

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
SOUTHERN ZONE, CHENNAI**

OA No. 147 of 2024 (SZ)

BETWEEN

Sri Sam P. Issac

...Petitioner

AND

Kerala State Pollution Control Board
and Ors.

...Respondents

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//Certified to be true copy of the originals//

Dated at Chennai on 21st day of July, 2024



**REMA SMRITHI VK
Standing Counsel for KSPCB
Respondent 1**

Control Board shall be the nodal agency for coordination and compliance. Proceedings (dated 05/04/2024 No: KSPCB/689/2024-SEE-1) regarding formation of Joint Committee was received from Chairperson, Kerala State Pollution Control Board a true copy of which is produced herewith and marked as **Annexure R-3 (a)**. This respondent has solicited nominations from all the concerned organizations, and accordingly the following representatives were nominated by departments concerned to serve as a member of this Joint Committee.

SN	Name	Designation	Department/ Agency
1	Shri. Ranjith D, IAS	Sub-Collector	Kottayam District, Kerala
2	Dr. Murali Krishna	Scientist-E/ Additional Director	Ministry of Environment, Forest & Climate Change, Regional Office, Bangalore.
3	Shri. Eby Varghese	Senior Environmental Engineer	Kerala State Pollution Control Board, Kerala

Notice of inspection was sent to the Joint committee members and the project proponent which is produced herewith and attached as **Annexure 3(b)**. As per the order of the Hon'ble NGT principle bench, the date of inspection shall be communicated to the petitioner also. But due to lack of address/phone number, this respondent could not contact him.

4. The Joint Committee conducted inspection on 22/06/2024. M/s. Mankombu Granites quarry project is situated in Survey No's 46/1-2, 46/1-3, 46/1-1, 46/1 at Moonilavu Village, Kottayam District, Kerala. A Crusher unit is nearby

which is owned by the project proponent itself. This quarry has obtained Environmental Clearance (EC) from State Environment Impact Assessment Authority (SEIAA), Kerala vide EC No. 34/2016 (No. 76/EC4/171/2013/SEIAA) dated 09.03.2016. As per EC, this quarry can extract 2,40,000 MTA of building granite stone from an area of 3.9942 hectares and the expected life of the mine is 6.5 years. It is also noted that as per the environmental clearance this quarry would be using open cast semi mechanised method of mining, and the mining would be done between 650 m MSL to 515 m MSL, and the ultimate depth of the mine was estimated as 515 MSL. As per EC, the nearest human settlement is at a distance of 110 meters on Western Side. Minimum distance to residence required as per the Board norms is 50m from the boundary of quarry. A copy of Environmental Clearance which the unit had submitted along with application for renewal of Board Consent to Operate is produced herewith and marked as **Annexure R-3 (c)**. Photographs related to Joint committee inspection and the quarrying area is produced herewith and marked as **Annexure R-3 (d)**

5. It is respectfully submitted that as per circular PCB/HO/CIRCULAR/51/2019 dated 04 /05/2022, while processing consent renewal applications pertaining to granite quarries, the applicant may be directed to produce letter from the Mining & Geology Department stating the life of the mine as per the approved mine plan. Thereafter, the EC validity may be taken equal to that of the life of the mine as stated by the Geologist or thirty years, whichever is earlier a true copy of circular is produced herewith and marked as **Annexure R-3 (e)**. The quarry unit had submitted application for renewal of Consent to operate by online application dated 19/05/2022 with letter from Mining and Geology dated 16/05/2022. As per the letter mine life of quarry is 12 years. Hence Consent to Operate of the Quarry has been renewed vide Consent No : 17679484/ICO/R/2022 issued on 19/05/2022 having validity up to

28/02/2027, a true copy of which is produced herewith and marked as **Annexure R-3 (f)**.

6. It is respectfully submitted that based on physical verification of the alleged quarry site, it is noted that M/s. Mankombu Granites is located at a road distance of about 6.5 kms away from the Illickal kallu, a tourist destination and as per Google Earth aerial distance, it is located at an aerial distance of 1.6 Kms. Photograph showing areal distance between Quarry and Illikal Kallu is hereby submitted as **Annexure R-3 (g)**. As per the report of the High-Level Working Group on Western Ghats Committee constituted under the Chairmanship of Dr. K. Kasturirangan, Moonilavu Village is not listed as an Ecologically Sensitive Area (ESA)/ Ecologically Fragile Area (EFA), a true copy of which is produced herewith and marked as **Annexure R-3 (h)**

7. As per EC, M/s. Mankombu Granites quarry is in Survey No's 46/1-2, 46/1-3, 46/1-1, 46/1 at Moonilavu Village, Kottayam District, Kerala, which is verified and found to be same as per the land tax receipt submitted during the Consent to Operate renewal application.

8. It is most respectfully submitted that the Board has no authority to check whether revenue land is encroached or not.

All the facts stated above are true to the best of my knowledge, information and belief.

Dated this the 19th day of July, 2024.



EBY VARGHESE
Senior Environmental Engineer

Eby Varghese
Senior Environmental Engineer, KSPCB
(Kottayam)



PROCEEDINGS
(Present: Sreekala S., Chirperson)



Sub:- Order dated 21.03.2024 in OANo.71/2024(PB) before the Hon'ble National Green Tribunal, Principal Bench - transferred to Southern Zone - filed by Sri. Sam P Issac against illegal mining activities by Mankomb Granites, Munnilavu village, Kottayam - officer nominated - Orders issued.

KERALA STATE POLLUTION CONTROL BOARD

KSPCB/689/2024-SEE-1

Thiruvananthapuram

Date: 05.04.2024

Read: Order dated 21.03.2024 of the Hon'ble NGT (PB) in O.A.No.71 of 2024 (copy enclosed).

ORDER

The Hon'ble National Green Tribunal (NGT) Principal Bench had registered Original Application No.71 /2024 filed by Sri. Sam P Issac against illegal mining activities by Mankombu Granites, Moonnilavu village, Kottayam. The NGT has vide order read above, constituted a Joint Committee of the following members to verify the factual position and to take appropriate remedial action.

1. Representative of Regional Officer, Integrated Regional Office, Ministry of Environment and Climate Change (MoEF & CC), Bangalore
2. Representative of Kerala State Pollution Control Board.
3. Representative of District Magistrate, Kottayam.

The Kerala State Pollution Control Board will be the nodal agency for coordination and compliance. It is directed in the Order that the Committee shall meet within two weeks, undertake visits to the site, look into the grievances of the applicant, associate the applicant and representative of the concerned project proponent, verify the factual position and take appropriate remedial action by following due course of law. The matter is also transferred to Southern Zone Bench of the Tribunal for further proceeding. Accordingly, Senior Environmental Engineer, Kerala State Pollution Control Board, District Office, Kottayam is nominated as the Nodal Officer on behalf of the Board. The Committee shall proceed as per the directions of the Tribunal.

The expenditure in this regard will be met from the head of account 'Research on Pollution Resources - Non-Plan'.

CHAIRPERSON

To

✓ Senior Environmental Engineer,
Kerala State Pollution Control Board,
District Office,
Kottayam.

Copy to:

1. Regional Officer, Integrated Regional Office, Ministry of Environment and Climate Change (MoEF & CC), Bangalore
2. The District Collector,
Collectorate,
Ernakulam
3. Adv. Rema Smrithi V.K
No.2, Temple Glade Apartments
Kalakshetra Colony
Beach Road
Besant Nagar
Chennai – 60009
4. Stock File

FORWARDED BY ORDER



SENIOR ENVIRONMENTAL ENGINEER- 1

Item No.1

(Court No. 2)

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI.**

(Through Physical Hearing with Hybrid V.C. Option)

Original Application No. 71/2024

Sam P Issac

...Applicant

Versus

State of Kerala & Ors.

...Respondents

Date of hearing: 21.03.2024

**CORAM: HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICIAL MEMBER.
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER.**

Applicant: None for the Applicant.

Application is registered based on a letter petition received by Post.

ORDER

1. Sam P Issac has sent by post the present letter petition to this Tribunal, which has been treated and registered as O.A. No. 71/2024.
2. The relevant part of the letter petition enumerating grievances of the applicant is reproduced as follows:-

X

X

X

X

"Sub- Illegal mining in Western Ghat Kerala

I am inviting your kind attention to the continues worst mining activities in western ghat of Kerala. It is in Moonnilavu village in Kottayam district of Kerala. The highest hill in the western ghat area of Kottayam district is named Illikkalkallu. It is a tourist destination and ecologically sensitive area. Top of Illikkalkallu peak is about 4000 feet above sea level. Near this peak in Sy.No.46/1,1-2,1-1,1-3 of Moonnilavu village in Meenachil taluk (Kottayam district, Kerala state) a quarrying lease No.384/2017-18/8860/M3/2017 dated 26.09.2017 under the kerala minor mineral concession Rules, is allotted to Shri

Nalinakshan Nair, Monkombu Granites, Moonnilavu. P.O. Since then large scale rock mining is going throughout there. A big metal crusher is also working there. A vast area of Government land is also encroached by them. In this ecologically fragile land heavy blasting is conducted using huge quantity of explosives, compressors, excavators and quarrying work is going on throughout day and night. Huge quantity of granite is excavated and transported from here.

Really Nalinakshan Nair is only a benami. The real man behind this looting is Shri. Tomin. J.Thachankari. He was a higher police officer, retired recently. Using his position in police department he forced the officers of concerned departments (Revenue, Mining and Geology, Police, Pollution control board, Explosives wing etc.) to grant necessary permissions to start the quarry in this ecologically fragile area. Fearing this police officer who is known as a shady character, no departments dare to conduct an inspection in this quarry. If anyone raise a protest, this police officer will threaten them. The Quarrying area is a steep hill with a slope more than 60 degree. It is a remote area. No outside persons are allowed to enter the premises. In a rainy season heavy land slide occurred there. Local people says that two labourers from north India lost their life and it was kept a secret by this police officer. The same day he send all other labourers to their home saying that if they break the secret he will shoot them.

Because of fear of my life, I am keeping my identity secret. I am regretting for it before you. Please take necessary action to stop this illegal quarrying activities.

X

X

X

X"

3. *Prima facie* the averments made in the application raise substantial questions relating to environment arising out of the implementation of the enactments specified in Schedule-I to the National Green Tribunal Act, 2010.

4. In view of the averments in the application, we consider it appropriate to have response of (1) State of Kerala through District Magistrate, Kottayam, (2) Director, Mining and Geology, State of Kerala, (3) Kerala Pollution Control Board, through its Member Secretary and (4) Shri Nalinakshan Nair, Monkombu Granites, Moonnilavu who stand impleaded as respondents No. 1 to 5. The Registry is directed to prepare and attach memo of parties to the application and issue notices to respondents No. 1 to 4 requiring them to file their reply/response within two months.

5. Notice be served on Project Proponent- Shri Nalinakshan Nair, Monkombu Granites, Moonnilavu through the District Magistrate, Kottayam and for this purpose notice issued to the Project Proponent be sent to the District Magistrate, Kottayam by E-mail for getting service of the same effected on it and sending his report in this regard.

6. In view of the averments made in the application, we also consider it appropriate that a Joint Committee be constituted to verify the factual position and suggest appropriate remedial action. Accordingly, we constitute a Joint Committee comprising of representatives of Regional Officer, Integrated Regional Office, MoEF & CC, Bangalore, Kerala Pollution Control Board and District Magistrate, Kottayam and direct the same to meet within two weeks, undertake visits to the site, look into the grievances of the applicant, associate the applicant and representative of the concerned project proponent, verify the factual position and suggest appropriate remedial action. The Kerala Pollution Control Board will be the nodal agency for coordination and compliance.

7. Even though in the present case cognizance has been taken by this Bench on the basis of letter petition received by post with approval and assignment under order of Hon'ble Chairperson, but in view of the facts and circumstances of the case including the fact that the place of accrual of cause of action lies within jurisdiction of the Southern Zone Bench of this Tribunal at Chennai, we are of the considered view that it will be appropriate if the case is further heard by the Southern Zone Bench of this Tribunal at Chennai.

8. Accordingly, the Registry is directed to list the matter before the Southern Zone Bench of this Tribunal at Chennai on 30.05.2024 after obtaining orders from Hon'ble the Chairperson for transfer of the case.

5. Notice be served on Project Proponent- Shri Nalinakshan Nair, Monkombu Granites, Moonnillavu through the District Magistrate, Kottayam and for this purpose notice issued to the Project Proponent be sent to the District Magistrate, Kottayam by E-mail for getting service of the same effected on it and sending his report in this regard.

6. In view of the averments made in the application, we also consider it appropriate that a Joint Committee be constituted to verify the factual position and suggest appropriate remedial action. Accordingly, we constitute a Joint Committee comprising of representatives of Regional Officer, Integrated Regional Office, MoEF & CC, Bangalore, Kerala Pollution Control Board and District Magistrate, Kottayam and direct the same to meet within two weeks, undertake visits to the site, look into the grievances of the applicant, associate the applicant and representative of the concerned project proponent, verify the factual position and suggest appropriate remedial action. The Kerala Pollution Control Board will be the nodal agency for coordination and compliance.

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8. Accordingly, the Registry is directed to list the matter before the Southern Zone Bench of this Tribunal at Chennai on 30.05.2024 after obtaining orders from Hon'ble the Chairperson for transfer of the case.

9. Factual and Action taken Report by the Joint Committee and reply/response by the respondents be filed within one month before the Southern Zone Bench of this Tribunal at Chennai by email judicial-ngtstz@gov.in preferably in the form of searchable PDF/OCR Supported PDF and not in the form of Image PDF.

10. A copy of this order be sent to the Regional Officer, Integrated Regional Office MoEF & CC, Bangalore, Member Secretary, Kerala Pollution Control Board and District Magistrate, Kottayam by email for requisite compliance.

Arun Kumar Tyagi, JM

Dr. Afroz Ahmad, EM

March 21st, 2024
AG



കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്
KERALA STATE POLLUTION CONTROL BOARD



ജില്ലാ ഓഫീസ്, കോട്ടയം ശ്രീനിവാസ അയ്യർ റോഡ്, കോട്ടയം-686001
DISTRICT OFFICE, KOTTAYAM, Sreenivasa Iyer Road, Kottayam-686001

“ഭരണഭാഷ - മാതൃഭാഷ”

17/05/2024

From

Senior Environmental Engineer
Kerala State Pollution Control Board, District Office, Kottayam

To

1. The Sub Collector
Kottayam
2. Dr. Murali Krishna Chimata, Scientist “E”
Integrated Regional Office, Ministry of Environment, Forest and climate Change (MoEF & CC), Bangalore, E- mail: cm.krishna@gov.in

Subject: Original Application No.71/2024 before the Hon'ble National Green Tribunal (NGT)
Principal Bench - Order dated 21.03.2024- constitution of Joint committee-Inspection

Reference: Email received from Head office, KSPCB on 05/04/2024

Sir,

As per the order of The Hon'be National Green Tribunal (NGT) Principal dated 21/03/2024 in Original Application No 71/2024, filed by Sri. Sam P Issac against illegal mining activities by Mankomb Granites, Moonilavu village, Kottayam,- Joint Committee has been constituted with following members.

1. **Renjith D IAS**, Sub Collector (94 4718 6315) Representative of District Magistrate, Kottayam
2. **Dr. Murali Krishna Chimata**, Scientist “E” (Mob. 9654684977) -Representative of Regional Office, Integrated Regional Office, Ministry of Environment, Forest and climate Change (MoEF & CC), Bangalore
3. **Er. Eby Varghese**, Senior Environmental Engineer (9447975736), Representative of Kerala State Pollution Control Board and Nodal Officer

It has been decided to conduct the Joint committee inspection on 22/05/2024 at 11.30 am at Mankombu Granite, Moonilavu. You are requested to make it convenient to attend the same.

Yours faithfully

EBY VARGHESE Digitally signed by EBY VARGHESE
Date: 2024.05.17 16:31:18 +05'30'

Senior Environmental Engineer & Nodal Officer



കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്
KERALA STATE POLLUTION CONTROL BOARD



ജില്ലാ ഓഫീസ്, കോട്ടയം ശ്രീനിവാസ അയ്യർ റോഡ്, കോട്ടയം-686001
DISTRICT OFFICE, KOTTAYAM, Sreenivasa Iyer Road, Kottayam-686001

“ഭരണഭാഷ - മാതൃഭാഷ”

17/05/2024

From

Senior Environmental Engineer

Kerala State Pollution Control Board, District Office, Kottayam

To

1. M A Nalinakshan Nair
Mundackal (H)
South vazhakulam P.O
Aluva, Eranakulam, 683105
2. The Manager
Mangombu Granites
Vellara,Chovvoor
P.O, Moonnilavu- 686586
Kottayam

Subject: Original Application No.71/2024 before the Hon'ble National Green Tribunal (NGT)
Principal Bench - Order dated 21.03.2024- constitution of Joint committee-Inspection

Reference: Email received from Head office, KSPCB on 05/04/2024

Sir,

As per the order of The Hon'be National Green Tribunal (NGT) Principal dated 21/03/2024 in Original Application No 71/2024, It has been decided to conduct the Joint committee inspection on 22/05/2024 at 11.30 am at Mankombu Granite, Moonilavu. You are requested to make it convenient to attend the same.

Yours faithfully

EBY VARGHESE

Senior Environmental Engineer & Nodal Officer

Digitally signed by EBY VARGHESE

Date: 2024.05.17 16:33:27 +05'30'



सत्यमेव जयते

**Proceedings of the State Environment Impact Assessment Authority
Kerala**

Present: Prof. (Dr.) K.P. Joy, Chairman, Dr. J. Subhashini, Member and Sri. P. Mara Pandiyan I.A.S
Member Secretary.

Sub: Environmental Clearance for the quarry project in Sy. Nos. 46/1-2, 46/1-3, 46/1-1, 46/1
at Moonnilavu Village, Kottayam district by M/s Mankombu Granites- Judgments of the
Hon: High Court of Kerala in W.P. 27209/2015 and R.P No. 1022/ 2015 filed by Sri.
M.A. Nalinakshan Nair

State Environment Impact Assessment Authority, Kerala

No. 76/EC4/171/2013/SEIAA

Dated: 09-03-2016

- Ref: 1. Application dated 31-7-2012 from Sri. M.A. Nalinakshan Nair, Managing Partner,
Mankombu Granites, Vellara, Moonnilavu P.O, Kottayam, 686586.
2. Minutes of the 13th meeting of SEAC held on 2-3-2013.
3. Letter No.J-11015/446/2014-IA-II(M) dated 16-6-2015.of MoEF, Govt. of India.
4. Minutes of the 31st meeting of the Expert Appraisal Committee of the MoEF held on
16-18/3/2015.
5. Minutes of the 45th meeting of SEIAA held on 11/12-9-2015.
6. Judgment dated 23-9-2015 of the Hon. High Court of Kerala in W.P No. 27029/2015
filed by Sri. M.A. Nalinakshan Nair.
7. Order dated 1-12-2015 of the Hon. High Court of Kerala in R.P No.1022/2015 in
W.P No. 27029/2015.
8. Letter dated 14-12-2015 from Sri. M.A. Nalinakshan Nair, Managing Partner,
Mankombu Granites, Vellara, Moonnilavu P.O, Kottayam, 686586.
9. Fax Message No. Q1-Cont. Case (C) No. 123/2016 dated 11-2-2016 from Sri. T.P.
Sajid, Senior Government Pleader.
10. Minutes of the 50th meeting of SEIAA held on 25-2-2016.

ENVIRONMENTAL CLEARANCE NO. 34 / 2016

M/s Mankombu Granites, Building No.4/194, Vellara, Moonnilavu. P.O,
Kottayam, 686586 has applied for obtaining Environmental Clearance under EIA Notification
dated 14-09-2006 for the proposed quarry project at Moonilavu Village, Moonilavu Panchayath,
Meenachil Taluk, Kottayam district, Kerala. The details of the case are as under:

- The proposed quarry site is a private land and the land is possessed in the name of M/s
Mankombu Granites.

- The proposed project is for quarrying of 2,40,000 MTA of building granite stone from an area of 3.9942 hectares of land. The expected life of mine will be 6.57 years.
- The project comes under Activity 1(a) in the Schedule of EIA Notification 2006 and since it is below 50 hectares, it comes under B category.
- Vide para 3 of O.M. No. L-11011/47/2011-IA.II(M) dated 18th May 2012, the mining projects with lease area up to less than 50 ha including projects of minor mineral with lease area less than 5 ha would be treated as category 'B' as defined in the EIA Notification 2006.
- At the end of life of mine, excavated pit (3.0842 ha) will be fully reclaimed and rehabilitated by plantation.
- The proposed project activity involves about 100% of the pit area for exploring granite building stone.
- The proposed project does not involve any underground mining activities.
- The mining will be done by open cast semi mechanised method of mining.
- The bench height and width proposed is 5 m and width maintained at 6 m
- The ultimate depth of the mine workings is estimated to be 515 MSL. The exploitation of mineral is being done from 650 m MSL to 515 m MSL in conceptual phase.
- A total quantity of 11,977 m³ of top soil and 5800 m³ of overburden will be removed during the mining operations. The top soil excavated from the quarry will be dumped separately at pre-determined place and subsequently will be utilized in spreading over reclaimed areas for plantation. Overburden will be utilized for laying internal haul road and will form base in reclamation / plantation.
- The sewage of 0.8 KLD generated from the mine office will be diverted to the septic tank followed by soak pit.
- About 40 trips of 20 T capacities will be utilised for transporting the mineral on daily basis.
- The total water requirement for the proposed activity is 5 KLD. The domestic water demand will be met from storm water / bore well. The water required will be sourced from the storm water reservoir. However the drinking water will be sourced from the existing open well which shall be purified in mini RO plant. It is proposed to collect the storm water into the holding/siltation tank by constructing channels all around the foot of hill. The channels will be constructed with intermediate check dams to prevent soil erosion.
- The total power requirement of 75 kW will be drawn from diesel engine.
- There will be fugitive emissions generated during material handling, transportation, loading, unloading, etc. that are proposed to be managed by regular water sprinkling on haul road, green belt development and avoiding overloading of vehicles.
- The explosives will be stored in the magazines in an isolated place and the licensed person will supervise / control the blasting operations.
- Ulakkapara Thodu is located at 1.5 km SE of the project site.
- The mineral produced from the proposed mine will be sent to the crusher plant which is under construction within the complex for crushing it to the required size before dispatching it to end use.

1.	Category/Sub category & Schedule	Category B, 1(a), as per O.M. No. L-11011/47/2011-IA.II(M) dated 18 th May 2012
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	GPS readings in WGS 84 datum	9°45'39.73" N to 9°45'47.96" N 76°48'24.59" E to 76°48'33.26" E
2.	Distance of the mining area from the nearest human settlement	110 m W
3.	Is the mine lease area less than 5ha	Yes
4.	Extent of area in m ²	39,925 m ²
5.	Proposed production capacity	2,40,000 MTA
6.	Ultimate depth of mining	515 MSL
7.	Quantity of topsoil estimated to be removed	11,977 m ³
8.	Method of mining	Open cast semi-mechanised method of mining
9.	Underground mining if any proposed	No
10.	Analysis reports from accredited laboratories	Air, water and noise analysis reports provided.
11.	Waste management proposals	As in PFR
12.	Mined area management	As in PFR and approved Mine Plan
	a) Accreditation with serial number of QCI / NABET	Sl. No. 54
13.	Proposals for Corporate Social responsibility	Provided
14.	Total cost of the project with details	1.50 Crores

2. The proposal was considered the 13th meeting of State level Expert Appraisal Committee (SEAC) of SEIAA held on 2-3-2013. The Committee noticed the following shortcomings in the proposal submitted by the proponent.

1. Regarding proof of ownership of land, copy of land tax receipts for all Sy. Nos. in the name of Thresia Luke Kocheri, was provided. But consent from Thresia Luke Kocheri to conduct mining activities in the land owned by her was not provided.
2. The Authorized signatory is Sri.Nalinakshan Nair. Copy of partnership deed was provided wherein Theresa Kocherry has put signature for M/s Mankombu Granites as its MD. Copy of resolution passed in the meeting of Partners of M/s Mankombu Granites authorizing Sri. M.A. Nalinakshan Nair as the Authorized signatory of Mankombu Granites was also provided. But the signature of Theresa Kocherry in the resolution and partnership deed was different.
3. Area survey plan approved by Village officer was provided but lacks clarity as Sy. nos. mentioned in the proposal were not shown in the survey plan clearly.
4. Against column 24 of Basic information of Form 1, the proponent had submitted that no litigation is pending against the lease area/ applicant of this lease area in any court of law to the best of knowledge. The Committee found that, such a submission of the authorized signatory was against the facts. This was later confirmed by the authorized signatory.

Considering all the above, the proposal was deferred and the Committee directed the proponent to submit a fresh proposal avoiding all factual errors narrating the full details of court cases, among others with documentary evidences. The decision of the 13th SEAC was intimated to the proponent on 16-04-2013. The said communication was returned by postal authorities as 'unclaimed'. Thereafter on 20-5-2015 the Authority sent an e-mail informing that if their response is not received within 60 days of receipt of the communication, the application will be delisted/ rejected.

3. Since the tenure of SEIAA, Kerala expired on 2-11-2014; the proponent submitted an application to MoEF directly for clearance from the Ministry under the provisions of the EIA notification. The matter was considered in the 27th and 31st meetings of the EAC of MoEF held on 10-

11 December 2014 and 16-18 March 2015 respectively. The Committee noted that it is a violation case as the mining has been done during 1-4-2014 to 9-2-2015 without prior environmental clearance as per the provision of the EIA notification, 2006, and also recommended the case on 16-18/3/2015. A show cause notice on violation proceedings under the Environment (Protection) Act, 1986 was issued by MoEF on 15-5-2015. The proponent submitted a reply to the EAC of the MoEF, Government of India on 20/05/2015. On constitution of SEIAA/SEAC in Kerala w.e.f. 19/03/2015, the MoEF transferred the application as such to SEIAA, Kerala 'for necessary action' which was received by SEIAA on 23-06-2015. Thereafter the entire proceeding was as if it is in pursuance of the application already submitted to SEIAA referred to as the 1st paper above. The whole case was placed in the 45th meeting of SEAC held on 11/12-9-2015 for appraisal and recommendation. The Committee remarked as under:

'The proposal has been forwarded by MoEF in which they have stipulated action against violation. This has to be reported to SEIAA. However before submitting to MoEF the project was considered by SEAC in its 13th meeting held on 2nd March 2013. Now the proponent has submitted mining plan. It is not in accordance with the KMMC Rules, 2015. Hence he has to submit a revised mining plan. However, the committee permitted to make a brief presentation. The Committee members raised queries regarding the slope and haulage facility in the area. It was informed that the proponent has acquired additional area to facilitate easy haulage and the above area is not included in the Mining Plan. The Committee decided to defer the item for submission of properly approved mining plan incorporating the entire area proposed for mining and also for field visit'.

In compliance with the decision of the 45th meeting of SEAC held on 11/12-09-2015, the petitioner submitted revised mining plan. At this juncture the proponent filed W.P.27209/2015 in the Hon. High court of Kerala for declaration for 'deemed clearance' based on the recommendation of the EAC of MoEF to the effect that their quarry project at Monnilavu, Kottayam may be deemed to have the environmental clearance as per the EIA notification 2006 as the application therefore was not disposed of within 45 days.

4. On 01/12/2015 in R.P. No. 1022/2015 filed by the proponent it is ordered by Hon. High Court that if the petitioner has fulfilled all the condition in the recommendation of the EAC final decision shall be taken by SEIAA in the light of Ext. P2 and P4 issued by MoEF, within one month from the date of receipt of the order. The SEIAA in its 47th meeting held on 7-1-2016, considered the directions. As the proponent himself has in his letter dated 13-7-2015, wanted the fresh application to be considered as the continuation of his earlier application to SEIAA necessarily the procedure therefore had to be followed. In compliance with the decision of the 45th meeting of SEAC held on 11/12-09-2015, the proponent submitted revised mining plan. Authority considered the position that there is a report on this quarry submitted by a technical committee constituted by the Government vide G.O (Rt) 152/12/Envvt dated 29-10-2012. It was decided to refer the matter to SEAC to report whether the above report would suffice as site inspection report and if not, to conduct site inspection, reports to be furnished in two weeks. It was also decided to file a petition in the High Court for extension of time for implementation of the order in R.P No. 1022/15 in W.P No. 27029/15. Meanwhile the proponent filed contempt of Court Case No. 123/2016 against the Member Secretary, SEIAA alleging non implementation of the order in the R.P. No. 1022/2015. As per the decision of

the Authority, petition for extension of time for implementation of the order in R.P. No.1022.2015 was filed on 3-2-2016. The government Counsel informed that when the petition came up before the High Court on 9-12-2016, the Hon. Court declined to give extension of time. It was advised to comply with the direction in R.P. No. 1022/13 urgently.

5. The specific order of High Court in the order dated 1-12-2015 in R.P. No.1022/2015 filed by the proponent is as follows:

'The writ petitioner has come up with this review petition stating that in the light of the Environmental Impact Assessment Notification, 2006, he is entitled to have deemed Environmental Clearance. Petitioner refers to clause (8) of the Notification and submits that if no decision has been taken within 45 days of receipt of recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned, he is entitled for a deemed Environmental Clearance. Therefore, this Court is of the view that if the petitioner has fulfilled all the conditions in the recommendation, final decision shall be taken by the second respondent/the State Environmental Impact Assessment Authority, in the light of Exts.P2 and P4 issued by the Ministry of Environment, Forests and Climate Change. Needful shall be done within a period of one month from the date of receipt of a copy of this order'.

Exp2 is the extract of the minutes of the EAC of MoEF, held on 16/18-3-2015 and Ext P4 is copy of the letter dated 16-6-2015 of MoEF, forwarding the documents the proponent had submitted to MoEF for E.C. for the quarry. Order in the R.P requires the proponent to fulfil all the conditions in the recommendations of the EAC, before final decision is taken by SEIAA, based on the above two documents. Usually such conditions form specific conditions in the E.C, to be implemented during construction or operation. In the situation because of the order of the Hon. High Court in the Contempt Petition No. 123/2016 filed by the proponent the Authority had to consider the case afresh and it was accordingly examined in detail. Authority adopted the report of the technical committee, submitted to Govt. in January 2013, which contain specific conditions on mitigation of environmental impacts of this quarry as the site inspection report for decision on grant of E.C with such specific and general conditions as are deemed fit and necessary for the operation of the quarry

6. On the basis of the report of the technical committee and recommendations of the EAC of MoEF the Authority decided to grant E.C to the quarry with the following specific and the modified general conditions for mining projects:

Specific Conditions

1. The quarrying activities of Mankombu granites in mid slope can influence both upslope and down slope considering the topography and settings. Dislodging of loose

- boulders and rock pieces from the upslope is a possibility and hence strict structural measures have to be ensured.
2. The quarrying operations should not affect the drainage channel on either side of the quarry face.
 3. Left over debris should not reach the streams that are in close proximity to the quarry site as it is a drinking water source of the local inhabitants at the downstream.
 4. Proper garland drains, slit traps, dust suppression measures noise reduction measures etc. will be mandatory so that human habitations are least affected.
 5. As applied for and approved the lease area will be 3.9942 ha with production limit of 2,40,000 MTA.
 - a. Land use within the lease area during mining will be as follows:
 - b. Pit 3.0842 ha
 - c. Green belt 0.24 ha
 - d. Road 0.01ha
 - e. Infrastructure 0.05 ha
 - f. Undisturbed 0.61
 - g. Total 3.39942 ha
 6. The boundaries of the lease area shall be properly demarcated and the geographic location of the quarry delineated erecting pillar boundary of the lease area on permanent pillars with coordinates conspicuously exhibited at all times. Also the entire lease area shall be fenced off, before commencing operations as per this clearance and the fencing shall always be maintained in good condition.
 7. There will be no underground mining activities. Life of mine is expected to be 6.5 years.
 8. The bench height will be maintained at 5m and width 6m. Mining will be done from top to bottom by slicing 2.5 m thick. The ultimate depth of the mine working will be 551 m AMSL.
 9. At the end of the life of the mine, excavated pit (3.0842ha) will be fully reclaimed and rehabilitated by plantation, leaving no voids.
 10. The topsoil excavated (11977cu.m) from the quarry will be dumped separately at predetermined place and utilised for spreading over the reclaimed areas for plantation. OB will be utilised for laying internal haul roads and reclamation.
 11. Mining, blasting, mine drainage; stacking of mineral rejects and disposal of wastes environmental management and progressive mine closure shall be strictly in accordance with the documents submitted to SEIAA.
 12. Controlled blasting should be carried out in such a manner that PPV levels are maintained below 10mm/sec and ground vibration resulting from the blasts will not cause any damage to structures in the surroundings and there is no fly rock problem.
 13. Muffling arrangement using steel wire mesh overlain by sand bags should be employed for blasting operation in the quarry.
 14. Blast timings should be restricted to the times of least traffic as 11- 11.30 am and 2- 2.30pm

15. CSR activity must be conservation oriented in consultation with the Bio Diversity Management Committee of Moonnilavu Grama Panchayat.
16. At the end of mining, the total mined area should not exceed 3.0842 ha.
17. The quarry shall not function between 6.00 p. m. and 8.00 a. m. If the timing condition fixed by the PCB is more stringent that will prevail.
18. Blasting shall be strictly in accordance with the conditions of the Mine Safety Directorate and Chapter 5 of the Mining Plan submitted.
19. The above conditions shall be without prejudice to compliance of more stringent conditions as may be stipulated as per any other statutory requirements or government orders and in such situations the more stringent conditions will prevail.

7. Environmental clearance under the EIA notification 2006 is therefore granted to the quarry project in Sy. Nos. 46/1-2, 46/1-3, 46/1-1, 46/1 at Moonnilavu Village, Kottayam district, by M/s Mankombu Granites, Building No.4/194, Vellara, Moonnilavu. P.O, Kottayam, 686586 subject to the specific conditions in para 6, the general condition appended and the mitigation measures undertaken in the EMP in the PFR and Mining plan submitted.

8. Before granting consent to operate, the Kerala State Pollution Control Board shall ensure that the condition precedents to be complied with as in the specific and general conditions are fully complied with. The proponent shall submit notarized affidavit to the effect that the above specific conditions, the general conditions in the appendix and the conditions in para 18 below will be adhered to till the life of the mine as now estimated

9. The clearance issued will also be subject to full and effective implementation of all the undertakings given in the application form, mitigation measures in the Environment Management Plan in chapter 2 of the Pre-Feasibility Report and the mining features including progressive mine closure plan as submitted with the application and relied on for grant of this clearance. The above undertakings and the conditions and undertakings in Chapter 4(Mining), Chapter 5 (Blasting), Chapter 6 (Mine Drainage), Chapter7 (stacking of mineral rejects and disposal of wastes) Chapter 11 (EMP) of the Mining Plan and the entire Progressive Mine Closure Plan as submitted will be deemed to be part of this proceedings as conditions as undertaken by the proponent, as if incorporated herein.

10. Validity of the environmental clearance will be five years form the date of this clearance, subject to earlier review in the event of violation or non- compliance of any of the conditions stipulated herein, or on genuine complaints from residents within the security area of the quarry.

11. Compliance report on the EMP and the continuing specific and general conditions shall be submitted to the Authority once in six months till the validity of the E.C. expires. Breach of this condition shall entail cancellation of the E.C.

12. Compliance of the conditions herein will be monitored by the Authority or its agencies at occasions as may be decided by the Authority, and also by the regional office of the Ministry of Environment & Forests, Govt. of India, Bangalore.

- i) As per G.O (P) 4/ 2013/ Env. dated 13-5-2013 Government have entrusted the Biodiversity Management Committees (BMC) of the respective Grama Panchayats to oversee the environmentally deleterious activities including quarrying. Therefore the B.M.C of Moonnilavu Grama Panchayat is authorized to monitor adherence of the above conditions by the proponent and to report to the concerned authorities instances if any of violations or non- compliance.
- ii) Necessary assistance for entry and inspection should be provided by the project proponent and those who are engaged or entrusted by him to the staff for inspection or monitoring.
- iii) Instances of violation if any shall be reported to the District Collector, Kottayam to take legal action under the Environment (Protection) Act 1986.
- iv) The given address for correspondence with the authorized signatory of the project is
M/s Mankombu Granites,
Chirappully House,
Nadackal . P.O,
Erattupetta,
Kottayam (Dist)
686586.
- v) Accredited consultant: Environmental Engineers & Consultants Pvt.Ltd.
A1-198, Janak Puri, New Delhi-110058.

Sd/-

P.MARA PANDIYAN.I.A.S,
Member Secretary (SEIAA)
&
Additional Chief Secretary
Environment & Forests Department.
Government of Kerala.

To,

Sri. M.A. Nalinakshan Nair,
Managing Partner,
Mankombu Granites,
Vellara, Moonnilavu.P.O,
Kottayam- 686586,

Copy to,

1. MoEF Regional Office, Southern Zone, Kendriya Sadan, 4th Floor, E&F Wing, II Block, Koramangala, Bangalore-560034.
2. The Additional Chief Secretary to Government, Environment Department, Government of Kerala.
3. Director, Dept. of Environment and Climate Change, Govt. of Kerala, Tvm-24
4. Director, Mining & Geology, Thiruvananthapuram -4.
5. District Collector, Kottayam,

6. Secretary, Moonnilavu Grama Panchayat, Erattupetta, Kottayam.
7. Secretary, Biodiversity Management Committee, Moonnilavu Grama Panchayat Office, Moonilavu, Kottayam.
- ✓ 8. District Geologist, Kottayam.
9. Chairman, SEIAA.
10. Website.
11. O/c
12. S/f



Forwarded/ By Order

Administrator
SEIAA

GENERAL CONDITIONS (for mining projects)

1. Rain Water Harvesting facility should be installed as per the prevailing provisions of KMBR / KPBR, unless otherwise specified.
2. Environment Monitoring Cell as agreed under the affidavit filed by the proponent should be formed and made functional.
3. Suitable avenue trees should be planted along either side of the tarred road and open parking areas, if any, including of approach road and internal roads.
4. Maximum possible solar energy generation and utilization shall be ensured as an essential part of the project.
5. Sprinklers shall be installed and used in the project site to contain dust emissions.
6. Eco-restoration including the mine closure plan shall be done at the own cost of the project proponent.
7. At least 10 percent out of the total excavated pit area should be retained as water storage areas and the remaining area should be reclaimed with stacked dumping and overburden and planted with indigenous plant species that are eco-friendly, if no other specific condition on reclamation of pit is stipulated in the E.C.
8. Corporate Social Responsibility (CSR) agreed upon by the proponent should be implemented
9. **The lease area shall be fenced off with barbed wires to a minimum height of 4ft around, before starting of mining. All the boundary indicators (boards, stores, markings, etc) shall be protected at all times and shall be conspicuous.**
10. Warning alarms indicating the time of blasting (to be done at specific timings) has to be arranged as per stipulations of Explosive Department.
11. Control measures on noise and vibration prescribed by KSPCB should be implemented.
12. Quarrying activities should be limited to day time as per KSPCB guidelines/specific conditions.
13. Blasting should be done in a controlled manner as specified by the regulations of Explosives Department or any other concerned agency.
14. A licensed person should supervise/ control the blasting operations.
15. Access roads to the quarry shall be tarred to contain dust emissions that may arise during transportation of materials.
16. Overburden materials should be managed within the site and used for reclamation of mine pit as per mine closure plan / specific conditions.
17. Height of benches should not exceed 5 m, and width should not be less than 5 m, if there is no mention is the mining plan/specific condition.
18. Mats to reduce fly rock blast to a maximum of 10 PPV should be provided.
19. Maximum depth of mining from general ground level at site shall not exceed 10m
20. No mining operations should be carried out at places having a slope greater than 45°.
21. Acoustic enclosures should have been provided to reduce sound amplifications in addition to the provisions of green belt and hollow brick envelop for crushers so that the noise level is kept within prescribed standards given by CPCB/KSPCB.
22. The workers on the site should be provided with the required protective equipment such as ear muffs, helmet, etc.
23. Garland drains with clarifiers to be provided in the lower slopes around the core area to channelize storm water.
24. The transportation of minerals should be done in covered trucks to contain dust emissions.
25. The proponent should plant trees at least 5 times of the loss that has been occurred while clearing the land for the project.
26. Disposal of spent oil from diesel engines should be as specified under relevant Rules/ Regulations.
27. Explosives should be stored in magazines in isolated place specified and approved by the Explosives Department.
28. A minimum buffer distance of 100m from the boundary of the quarry to the nearest dwelling unit or other structures, not being any facility for mining shall be provided.
29. 100 m buffer distance should be maintained from forest boundaries.

30. Consent from Kerala State Pollution Control Board under Water and Air Act(s) should be obtained before initiating mining activity.
31. All other statutory clearances should be obtained, as applicable, by project proponents from the respective competent authorities including that for blasting and storage of explosives.
32. In the case of any change(s) in the scope of the project, extent quantity, process of mining technology involved or in any way affecting the environmental parameters/impacts as assessed, based on which only the E.C is issued, the project would require a fresh appraisal by this Authority, for which the proponent shall apply and get the approval of this Authority.
33. The Authority reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the environment clearance under the provisions of the Environment (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.
34. The stipulations by Statutory Authorities under different Acts and Notifications should be complied with, including the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification, 2006.
35. The project proponent should advertise in at least two local newspapers widely circulated in the region, one of which (both the advertisement and the newspaper) shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Environment Impact Assessment Authority (SEIAA) office and may also be seen on the website of the Authority at www.seiaakerala.org. The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same signed in all pages should be forwarded to the office of this Authority as confirmation.
36. A copy of the clearance letter shall be sent by the proponent to concerned Grama Panchayat/ District Panchayat/ Municipality/Corporation/Urban Local Body and also to the Local NGO, if any, from whom suggestions / representations, if any, were received while processing the proposal. The Environmental Clearance shall also be put on the website of the company by the proponent.
37. The proponent shall submit half yearly reports on the status of compliance of the stipulated EC conditions including results of monitored data (both in hard copies as well as by e-mail) and upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the respective Regional Office of MoEF, Govt. of India and also to the State Environment Impact Assessment Authority (SEIAA) office.
38. The details of Environmental Clearance should be prominently displayed in a metallic board of 3 ft x 3 ft with green background and yellow letters of Times New Roman font of size of not less than 40. Sign board with extent of lease area and boundaries shall be depicted at the entrance of the quarry, visible to the public
39. The proponent should provide notarized affidavit (indicating the number and date of Environmental Clearance proceedings) that all the conditions stipulated in the EC shall be scrupulously followed.
40. No change in mining technology and scope of working should be made without prior approval of the SEIAA, No further expansion or modifications in the mine shall be carried out without prior approval of the SEIAA, as applicable.
41. The Project proponent shall ensure that no natural water course and/or water resources shall be obstructed due to any mining operations. Necessary safeguard measures to protect the first order streams, if any, originating from the mine lease shall be taken.
42. Monitoring of Ambient Air Quality to be carried out based on the Notification 2009, as amended from time to time by the Central Pollution Control Board. Water sprinkling should be increased at places loading and unloading points & transfer point to reduce fugitive emissions.
43. The top soil, if any, shall temporarily be stored at earmarked site(s) only for the topsoil shall be used for land reclamation and plantation. The over burden (OB) generated during the mining operations shall be stacked at earmarked dump site(s) only. The maximum height of the dumps shall not exceed 8m and width 20m and overall slope of the dumps shall be maintained to 45°. The OB dumps should be scientifically vegetated with suitable native species to prevent erosion and surface run off. In critical areas, use of geo textiles shall be undertaken for stabilization of the dump. The entire excavated area shall be backfilled. Monitoring and management of rehabilitated areas should continue until the vegetation becomes self-sustaining.
44. Catch drains and siltation ponds of appropriate size shall be constructed around the mine

- working, mineral and OB dumps to prevent run off of water and flow of sediments directly into the river and other water bodies. The water so collected should be utilized for watering the mine area, roads, green belt development etc. The drains shall be regularly desilted particularly after monsoon and maintained properly.
45. Effective safeguard measures such as regular water sprinkling shall be carried out in critical areas prone to air pollution and having high levels of PM₁₀ and PM_{2.5} such as haul Road, loading and unloading points and transfer points – it shall be ensured that the Ambient Air Quality parameters conform to the norms prescribed by the Central Pollution Control Board in this regard.
 46. Fugitive dust emissions from all the sources should be controlled regularly. Water spraying arrangement on haul roads, loading and unloading and at transfer points should be provided and properly maintained.
 47. Measures should be taken for control of noise levels below 85 dBA in the work environment.
 48. A separate environmental management cell with suitable qualified personnel should be set-up under the control of a Senior Executive, who will report directly to the Head of the Organization.
 49. The funds earmarked for environmental protection measures and CSR activate should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to the State Environment Impact Assessment Authority (SEIAA) office.
 50. The Regional Office of MOEF & CC located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (S) of the Regional Office by furnishing the requisite data/information/monitoring reports.
 51. Any appeal against this Environmental Clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
 52. Concealing the factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.
 53. The SEIAA may revoke or suspend the order, for non implementation of any of the specific or this implementation of any of the above conditions is not satisfactory. The SEIAA reserves the right to alter/modify the above conditions or stipulate any further condition in the interest of environment protection.
 54. The above conditions shall prevail notwithstanding anything to the contrary, in consistent, or simplified, contained in any other permit, license on consent given by any other authority for the same project.
 55. This order is valid for a period of 5 years or the expiry date of mine lease period issued by the Government of Kerala, whichever is earlier.
 56. The Environmental Clearance will be subject to the final order of the courts in any pending litigation related to the land or project, in any court of law.
 57. The mining operation shall be restricted to above ground water table and it should not intersect ground water table.
 58. All vehicles used for transportation and within the mines shall have 'PUC' certificate from authorized pollution taking centre. Washing of all vehicles shall be inside the lease area'
 59. Project proponent should obtain necessary prior permission of the competent authorities for drawal of requisite quantity of surface water and ground water for the project.
 60. Regular monitoring of flow rates and water quality up stream and down stream of the springs and perennial nallahs flowing in and around the mine lease area shall be carried out and reported in the six monthly reports to SEIAA.
 61. Occupational health surveillance program of the workers should be under taken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.



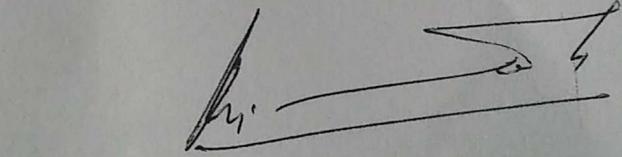

Member Secretary, SEIAA Kerala



Fig 1: Joint Committee with Project Team



Fig 2-3: Benches in the Quarry Mining Pit



KERALA STATE POLLUTION CONTROL BOARD

കേരള സംസ്ഥാന മലിനീകരണ നിയന്ത്രണ ബോർഡ്

Pattom P.O., Thiruvananthapuram – 695 004

പട്ടംപി .ഒ. തിരുവനന്തപുരം 695 004

PCB/HO/CIRCULAR/51/2019

Date: 04 /05/2022

CIRCULAR

Sub: - Validity of Environmental Clearance for mining projects – reg.

Ref: -1. MoEF&CC notification no. S.O.1807(E) dated 12/04/2022.

2. Representation dated 21.04.2022 submitted by Registered Metal Crusher Units Owners Association.

The Ministry of Environment, Forests & Climate Change, vide notification cited 1st above has made amendments regarding the validity of Environmental Clearance. As per the notification, the prior Environmental Clearance (EC) granted for mining projects shall be valid for the project life as laid down in the mining plan approved and renewed by competent authority, from time to time, subject to a maximum of thirty years, whichever is earlier.

Hence, while processing consent renewal applications pertaining to granite quarries, the applicant may be directed to produce letter from the Mining & Geology Department stating the life of the mine as per the approved mine plan. This may be counterchecked with the mine life mentioned in the EC. Thereafter, the EC validity may be taken equal to that of the life of the mine as stated by the Geologist or thirty years, whichever is earlier.

In case, the life of mine is more than 30 years, the notification under reference cited, permits extension for another twenty years beyond 30 years or for the life of mine whichever is earlier, and this extension is granted in installments as per the recommendations of the Expert Appraisal Committee every 5 years.

Based on the above, consent to operate may be renewed, as usual, for a period of five years or up to the validity of the EC in case the validity of EC is less than 5 years. All other criteria for processing of consent renewal applications for quarries remain unchanged. Consent renewal applications shall be processed accordingly.

**-sd-
CHAIRMAN**

To

1. The Chief Environmental Engineer,
Regional Office, Trivandrum/Ernakulam/Kozhikode.
2. The Senior Environmental Engineer,
Environmental Surveillance Centre, Eloor.
3. The Environmental Engineer, District Office,
Thiruvananthapuram, Kollam, Pathanamthitta, Alapuzha, Idukki, Kottayam,
Ernakulam-1, Ernakulam-2, Thrissur, Palakkad, Malappuram, Kozhikode, Kannur,
Wayanad, Kasargod.

Copy to:-

- 1) All Technical Staff in HO
- 2) IT Cell (for uploading in the website)
- 3) C.A to CHN & MS

Forwarded by order

**ALEXANDER
GEORGE**

 Digitally signed by ALEXANDER
GEORGE
Date: 2022.05.04 15:18:13 +05'30'

Senior Environmental Engineer-3



KERALA STATE POLLUTION CONTROL BOARD

FILE NO. :PCB/KTM/ICO/R/R15KOT1397218/2022

Date of issue :19/05/2022

INTEGRATED CONSENT TO OPERATE - RENEWAL

Consent No : 17679484/ICO/R/2022

Ref : Consent No : R15KOT1397218/ICO/R/2021 Date of issue :06/03/2021 validity upto :07/03/2022

The ' Integrated Consent to Operate' issued as per reference above to M/s Mangombu Granites,Vellara,Chovvoor P.O,Moonnilavu is hereby renewed up to 28/02/2027 and issued to M/s Mangombu Granites,Vellara,Chovvoor P.O,Moonnilavu The consent(s)/ variation order(s) cited under reference are integral part of this renewal order and this order is subject to the conditions stipulated therein and the following modifications/ additions.

I. GENERAL

S.No.	Items	Description
1	Capital Income	Rs.150 Lakhs
2	Annual fee	Rs. 27500/-
3	Category	RED
4	Activity	BLACK STONE RUBBLE (PER ANNUM)- 240000 Metric Tonnes
5	Survey number	46/1,1-2,1-1,1-3
6	Total Area	4.4760 Hectares
7	Fee remitted	Rs.151250/-
8	Excess fee remitted	Rs.11000/-
9	Validity	28/02/2027
10	Village	Moonnilavu

II. Stack Details

Stack No.	Source of Emission	Emission Rate(Nm ³ /Hr)	Stack Height above		Control Equipment
			Ground Level(In Meters)	Roof Level(In Meters)	

III. CONDITIONS

3.1 For renewal of the consent in case of continuance of operation of the quarry, application in the prescribed form shall be submitted through the web portal of the Board for Online Consent Management & Monitoring System 2 months prior to the date of expiry. Late application will be accepted only with fine.

3.2 The consent issued from the board is only with respect to the powers vested under the water Act 1974 Air Act 1981 and The Rules there under. The operation of the quarry shall be commenced only after obtaining clearances from all concerned Authorities.

3.3 There shall not be any firing activity between 6 pm to 6 am

3.4 Mining activities shall be done only in the area marked by Mining & Geology.

3.5 The PM10 in ambient air at the boundary shall not exceed 100 microgram/m³

3.6 The PM 2.5 in ambient air at the boundary shall not exceed 60 microgram/m³

3.7 The sound level (Leq) at 1 m outside the boundary of the site should not exceed the ambient noise Standard applicable to the adjoining areas.

3.8 Conditions given in the Environmental clearance shall be strictly complied with.

3.9 Mining shall be only done as per the mining plan attached with EC

3.10 Annual environmental statement shall be submitted on or before 31 st March every year

3.11 Suspended particulate matter measured between 3m and 10m from the unit shall not exceed 600 micrograms per cubic meter.

3.12 Arrangements of rain water harvesting including open well / Bore well/ Ground water recharging shall be provided. Rain water harvesting facility shall be installed in the unit within three month and photos of the same shall be submitted in this office via e-mail

3.13 Unless otherwise stated, all the consent conditions in the previous consents shall be complied.

3.14 All the conditions in the Environmental clearance shall be complied and periodic compliance report shall be submitted.

3.15 This consent is valid up to 28/02/2027 or The validity of new mining scheme approved by the district geologist Kottayam as mentioned in the letter No 2880/DOY/ML/2017 dated 16/05/2022, which ever is earlier.

All other conditions of the Integrated Consent to Operate issued as per reference above remain unchanged.

Biju.B

Digitally signed by Biju.B
Date: 2022.05.19 13:54:32 +05'30'

DATE :19/05/2022

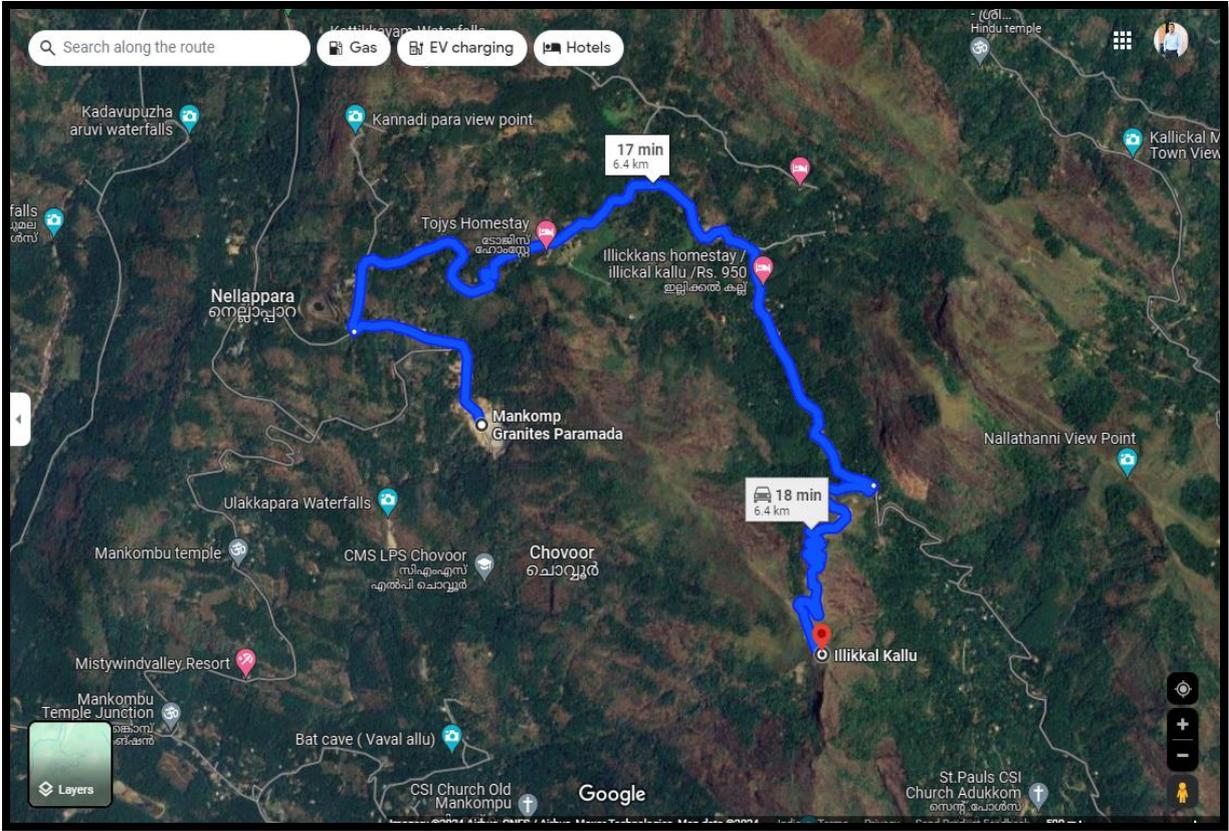
SIGNATURE & SEAL OF ISSUING AUTHORITY
ENVIRONMENTAL ENGINEER DISTRICT
OFFICE KOTTAYAM



To

M A Nalinakshan Nair,
Mundackal (H),
South vazhakulam P.O.,
Aluva

- 1. This digitally signed document is legally valid as per the Information Technology Act 2000**
2. For verifying this document please go to krocmmms.nic.in and search using date of issue/name of the unit/Application Number in "Consent Granted Applications" link in the home page of the Board's Online Consent Management and Monitoring System.



Aerial distance between Quarry and Illikal Kallu

**REPORT OF THE HIGH LEVEL WORKING GROUP
ON
WESTERN GHATS**

Volume II



**Ministry of Environment and Forests
Government of India
15 April 2013**



Cover: Portion of peninsular India showing Western Ghats region depicted using multi spectral image of advanced wide field sensor (AWifs) on board RESOURCESAT-1 as natural color composite

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SI No	STATE	DIST	TALUK	Village Name
1744	Kerala	Idukki	Devikulam	Kottakamboor
1745	Kerala	Idukki	Devikulam	Kanthalloor
1746	Kerala	Idukki	Devikulam	Vattavada
1747	Kerala	Idukki	Devikulam	Mankulam
1748	Kerala	Idukki	Devikulam	Mannamkandam
1749	Kerala	Idukki	Devikulam	Pallivasal
1750	Kerala	Idukki	Devikulam	Anaviratty
1751	Kerala	Idukki	Devikulam	Kunjithanny
1752	Kerala	Idukki	Devikulam	Vellathuval
1753	Kerala	Idukki	Peerumade	Upputhara
1754	Kerala	Idukki	Peerumade	Kumily
1755	Kerala	Idukki	Peerumade	Manjumala
1756	Kerala	Idukki	Peerumade	Periyar
1757	Kerala	Idukki	Peerumade	Kokkayar
1758	Kerala	Idukki	Peerumade	Peerumade
1759	Kerala	Idukki	Peerumade	Mlappara
1760	Kerala	Idukki	Peerumade	Peruvanthanam
1761	Kerala	Idukki	Thodupuzha	Kanjikuzhi
1762	Kerala	Idukki	Thodupuzha	Udumbannoor
1763	Kerala	Idukki	Thodupuzha	Idukki (Part)
1764	Kerala	Idukki	Thodupuzha	Arakkulam
1765	Kerala	Idukki	Udumbanchola	Chinnakanal
1766	Kerala	Idukki	Udumbanchola	Baisonvally
1767	Kerala	Idukki	Udumbanchola	Rajakumari
1768	Kerala	Idukki	Udumbanchola	Poopara
1769	Kerala	Idukki	Udumbanchola	Rajakkad
1770	Kerala	Idukki	Udumbanchola	Konnathady
1771	Kerala	Idukki	Udumbanchola	Santhanpara
1772	Kerala	Idukki	Udumbanchola	Kanthippara
1773	Kerala	Idukki	Udumbanchola	Vathikudy
1774	Kerala	Idukki	Udumbanchola	Chathurangapara
1775	Kerala	Idukki	Udumbanchola	Udumbanchola
1776	Kerala	Idukki	Udumbanchola	Upputhode
1777	Kerala	Idukki	Udumbanchola	Parathodu
1778	Kerala	Idukki	Udumbanchola	Kalkoonthal
1779	Kerala	Idukki	Udumbanchola	Thankamony (Part)
1780	Kerala	Idukki	Udumbanchola	Ayyappancoil
1781	Kerala	Idukki	Udumbanchola	Pampadumpara
1782	Kerala	Idukki	Udumbanchola	Kattappana
1783	Kerala	Idukki	Udumbanchola	Karunapuram
1784	Kerala	Idukki	Udumbanchola	Vandanmedu
1785	Kerala	Idukki	Udumbanchola	Anakkara
1786	Kerala	Idukki	Udumbanchola	Anavilasam
1787	Kerala	Idukki	Udumbanchola	Chakkupallam
1788	Kerala	Kannur	Thalassery	Aralam
1789	Kerala	Kannur	Thalassery	Kottiyoor
1790	Kerala	Kannur	Thalassery	Cheruvanchery
1791	Kerala	Kollam	Pathanapuram	Punnala
1792	Kerala	Kollam	Pathanapuram	Piravanthur
1793	Kerala	Kollam	Pathanapuram	Edamon
1794	Kerala	Kollam	Pathanapuram	Thenmala
1795	Kerala	Kollam	Pathanapuram	Arienkavu
1796	Kerala	Kollam	Pathanapuram	Thinkalkarikkakom
1797	Kerala	Kollam	Pathanapuram	Kulathupuzha
1798	Kerala	Kollam	Pathanapuram	Channappetta
1799	Kerala	Kottayam	Kanjirappally	Koottickal
1800	Kerala	Kottayam	Meenachil	Melukavu
1801	Kerala	Kottayam	Meenachil	Teekoy
1802	Kerala	Kottayam	Meenachil	Poonjar Thekkekara
1803	Kerala	Kozhikode	Kozhikode	Kedavur
1804	Kerala	Kozhikode	Kozhikode	Puthupadi
1805	Kerala	Kozhikode	Kozhikode	Nellipoyil
1806	Kerala	Kozhikode	Kozhikode	Kodencheri
1807	Kerala	Kozhikode	Kozhikode	Thiruvambadi
1808	Kerala	Kozhikode	Quilandy	Chempanoda
1809	Kerala	Kozhikode	Quilandy	Rikkattapatta
1810	Kerala	Kozhikode	Vadakara	Thinoor
1811	Kerala	Kozhikode	Vadakara	Kavilumpara
1812	Kerala	Malappuram	Nilambur	Chungathara
1813	Kerala	Malappuram	Nilambur	Kurumbilangode

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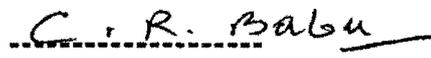
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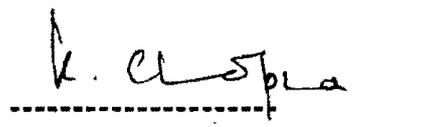
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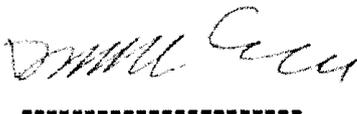
We, the Members of the High Level Working Group constituted to study the preservation of the ecology, environmental integrity and holistic development of the Western Ghats in view of their rich and unique biodiversity after due deliberation have adopted the Report for submission.


15/4/2013
1. DR K. KASTURIRANGAN.
CHAIRMAN

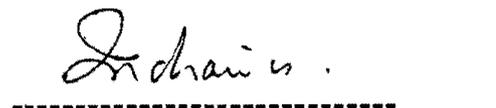
MEMBERS


2. (Professor C. R. Babu)

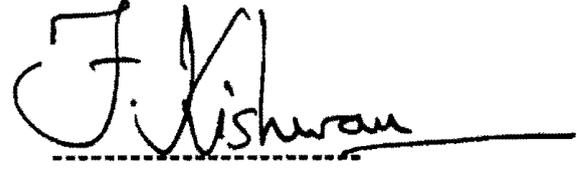

4. (Professor Kanchan Chopra)

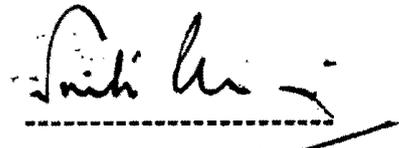

6. (Darshan Shankar)

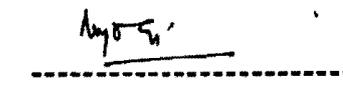

8. (Dr. P. S. Roy)


10. (Dr. Indrani Chandrasekharan)
Special Invitee


3. (J. M. Mauskar)


5. (Dr. Jagdish Kishwan)


7. (Sunita Narain)


9. (Ajay Tyagi)
Member Convenor

PREFACE

Western Ghats is a magnificent mountain range next only to Himalayas and is a biological treasure trove with a high degree of endemism (11% to 78%) and scenic beauty. This unique eco-system has been threatened by continuously increasing habitat pressures and declared as one of the world's hottest hotspots of biodiversity. Realizing the need to protect and rejuvenate the ecology of and for sustainable development in Western Ghats, the Ministry of Environment and Forests (MoEF) constituted a Western Ghats Ecology Expert Panel (WGEEP). The mandate of WGEEP was to demarcate ecologically sensitive zones and suggest measures to conserve, protect and rejuvenate the ecology of Western Ghats region. Taking into account the comments and suggestions made by different stakeholders including State Governments and Central Ministries on WGEEP Report, the MoEF constituted a High Level Working Group (HLWG) to suggest an all-round and holistic approach for sustainable and equitable development while keeping in focus the preservation and conservation of ecological systems in Western Ghats.

The Working Group has carefully examined the different approaches available for characterizing the Western Ghats System to get an insight so as to make pragmatic recommendations. The Working Group followed a detailed geospatial analysis for identification of Ecologically Sensitive Areas at a fine resolution of 24 m with village as unit. After extensive discussions with experts, the Working Group also defined the extent of Western Ghats; and as per HLWG's definition, the Western Ghats region spreads over an area of 1,64,280 km² and extends from North to South over a distance of 1500 km traversing Six States. Our analysis also revealed that already close to 60 per cent of the Western Ghats region is under cultural landscape - human dominated land use of settlements, agriculture and plantations (other than forest plantations) - and only 41 per cent of the land area can be currently classified as natural landscape. Of the natural landscape, the biologically rich area, with some measure of contiguity is roughly 37 per cent of the Western Ghats which is about 60,000 km². We have identified this 37% of natural landscape having very high and

high biological richness and low fragmentation and low population density and contain Protected Areas (PAs), World Heritage Sites (WHSs) and Tiger and Elephant corridors as Ecologically Sensitive Area (ESA) and recommend it to MoEF for notification.

Because of unprecedented threats to natural landscape of Western Ghats region by development projects and urban growth, the Working Group has recommended a non-tolerance policy with respect to highly interventionist and environmentally damaging activities like mining or polluting industries and made specific recommendations about prohibited activities and those that require high level of scrutiny and assessment before clearance within ESA. While recognizing the fact that list of non-permissible activities recommended may not be enough to fully manage the environmental fallout of development and also being fully aware that management through prohibition and fiat is often detrimental to the interests of the very people, the environment policy is aiming to protect. The Working Group has suggested a balanced and nuanced approach – to say no to the most damaging and high impact activities and at the same time creating an enabling process to incentivize environmentally sound development that benefits local livelihoods and economies.

The Working Group also took note of the environmentally friendly practices in coffee plantations in Kodagu and cardamom plantations in Idduki and Wayanad where integration of natural landscapes with human settlements exists. Indeed, it is because of this harmony between people and nature in the Western Ghats, the HLWG recommended policies to incentivize green growth that promotes sustainable and equitable development across the Western Ghats region. The future lies in working on green growth strategies that build on the natural endowment of the Western Ghats region to create a vibrant economy, while preserving, conserving and rejuvenating the ecology. As a part of the governance of Western Ghats ecology, the Working Group also recommended to MoEF for setting up of a “Decision Support and Monitoring Centre for Western Ghats”.

Even as we take urgent steps as outlined in this report, the future planning and regulations would call for constantly updating and improving our understanding of this multi-dimensional Mountain System. The Western Ghats ecosystem has a high degree of complexity arising out of a variety of non-linear interactions between its component elements such as rich Biodiversity (Flora & Fauna), Hydrological Systems, Geological and Geomorphological characteristics and Climatic Variations coupled with impacts of human interventions. Understanding of such a system and evolving specific strategies for sustainable development, after duly factoring conservation and preservation imperatives, demand insights into the behavioural pattern of this complex entity. Against this backdrop, our own understanding of the system behaviour has not even scraped the surface of the huge embedded knowledge bases and their interrelationships. The work of WGEEP and our own work can help to highlight the need for understanding this complex system in its variety of manifestations as we seek for maximum possible internal self-consistency between competing demands of development, conservation and local livelihoods. This is an area of research that can be carried out for several years involving some of the most brilliant minds. In this context, we feel that we should inspire generations of researchers to work on aspects relevant to the functioning of Western Ghats Ecosystem for greater insight into its behaviour. This in turn can also open up multiple pathways for decision making and facilitating the application of criteria like multi-parameter optimization.

In short, the WGEEP report together with the present Report can be, indeed, a starting point in a long and what could be an eventful odyssey to understand the man-environmental relations through the eyes of Western Ghats which in the view of its Creator can be a gift or a curse depending on how we judge and act. Recognizing this aspect should truly make us humble.

**Members
High Level Working Group**

ACKNOWLEDGMENT

The Members of the High Level Working Group (HLWG) would like to record their deep gratitude to the Hon'ble Minister of State (Independent Charge) for Environment & Forests, Smt. Jayanthi Natarajan for entrusting this important task to us, a task which was challenging and called for finding a right balance between the imperatives of conservation ecology and development for the complex Western Ghats System.

The task entrusted to the HLWG involved development of multi parameter criteria, analysis and modelling of different types of data and information. In executing this aspect of the activity, the HLWG relied heavily on the expertise of Indian Space Research Organization (ISRO) in general and National Remote Sensing Centre (NRSC) in particular. Specifically, the Working Group would like to express their sincere appreciation to the guidance provided by Dr. V.K. Dhadwal, Director, NRSC. Further, nearly all the important aspects of this specialized effort were carried out by Dr. Chandrasekhar Jha and Shri G. Rajashekar of NRSC who tirelessly worked on various aspects of analysis and interpretation. The high levels of expectations of HLWG were fully responded to by these scientists. We also recall with gratitude the special interest Dr. K. Radhakrishnan, Chairman, ISRO took in extending all the required support of ISRO for this purpose.

As a part of getting a second opinion through a peer review mechanism, the HLWG requested a committee of Dr. Y.V.N Krishna Murthy, Director, Indian Institute of Remote Sensing, Dr. V.B. Mathur, Dean, Wildlife Institute of India and Prof. Subhash Ashutosh, Indira Gandhi National Forest Academy for the critical evaluation of the methodologies used for identification of the Ecologically Sensitive Areas (ESA). We appreciate the high degree of professionalism brought to bear by these scientists in reviewing the methodology adopted.

The HLWG had contacted the Governments of the 6 States of Western Ghats to seek their specific views on the various recommendations made in the WGEEP report and their implications. The States not only responded to these enquiries with quality analytical inputs but also in most of the cases facilitated meetings of the working Group with the concerned State Government officials who made excellent presentations besides insightful discussions. Further, the HLWG had the privilege of meeting with Chief Ministers of Maharashtra, Goa and Kerala along with their Cabinet colleagues and elected representatives (MPs and MLAs belonging to different parties). This aspect of interaction with the State Governments, their elected representatives, functionaries and officials, provided the most valuable inputs for the Working Group to draft its recommendations. The Working Group would like to acknowledge with thanks the concerned functionaries at the State levels and in particular Chief Secretaries and Secretaries of relevant Departments.

The HLWG also made similar request to the Ministries/ Departments of the Central Government in the context of the WGEEP report. We would like to record our appreciation for the exhaustive responses that we received from the Central Ministries and Departments of the Government of India.

At the individual level, several important experts, professionals, NGOs and Activists interacted with the HLWG. Whereas, it is not possible to exhaustively acknowledge all the names, a few of them nevertheless merit mention. On the aspect of delineation of the Western-Ghats, the very illuminating discussions HLWG had with Prof. R. Vaidyanathan, Retd. Prof. of Geography and Geology, Andhra University, Dr. Balakrishna, Deputy Director General, Geological Survey of India and Prof. K.R. Subramanya of Geological Society of India are gratefully acknowledged. Further, the invaluable technical inputs and advice on Wildlife corridors provided by Prof. V.B. Mathur and Dr. Y.V. Jhala of Wildlife Institute of India are appreciated. Dr. Jayaraman of ISRO provided excellent inputs on the concept of Decision Support and Monitoring Centre for the Western Ghats.

One of the most important meetings that HLWG had at the individual level was with Prof. Madhav Gadgil, Chairman of WGEEP. The very extensive interaction of the individual Members of HLWG with Prof. Madhav Gadgil was deeply insightful even as we could glean his passion and commitment for the conservation of the Western Ghats ecology. Discussion with Prof. Madhav Gadgil provided valuable inputs for the HLWG, which also had discussions with many Members of WGEEP.

Many institutions provided useful information which were used by HLWG in conducting analysis and assessment. The State Biodiversity Boards, State Forest Departments, State Pollution Control Boards (SPCBs) and Tropical Botanical Garden Research Institute (TBGRI), Kerala State Electricity Board (KSEB) and Karnataka Power Corporation Limited (KPCL), to mention a few, provided valuable data on different issues ranging from Hydropower projects to biodiversity conservation.

HLWG also met a number of stakeholders including experts, experienced and knowledgeable citizens, associations of trade organizations, scientists and academicians, who offered valuable suggestions on the different facets of the Western Ghats. The HLWG also benefitted from meetings with some notable NGOs and Activists.

The HLWG thanks the Planning Commission, particularly Smt Indu Patnaik, Joint Advisor and Ms Urvana Menon, Young Professional (E & F) for their help in providing data inputs on Western Ghats Development Programme and analysis of the responses received.

Dr Amit Love, Deputy Director, Ministry of Environment and Forests, has been the major force behind the functioning of HLWG and it would have been impossible to accomplish the enormous task entrusted to HLWG without him.

The HLWG acknowledges the invaluable support provided by the scientists and staff, particularly Dr Rakesh Kumar and Shri Pankaj Kumar working at the Centre of Excellence Programme of the Ministry of Environment and Forests at the Centre for

Environmental Management of Degraded Ecosystems, University of Delhi in compilation and finalization of the report.

From the Ministry of Environment and Forests, we would like to particularly recognize the excellent presentation made by Dr. G.V. Subramanyam on the various aspects of WGEEP recommendations. Some of us also benefitted by the comprehensive briefing by Dr. Nalini Bhatt on the history of evolution of the several issues related to Athirappilly and Gundy projects. HLWG also acknowledges the inputs given by senior officers of the MoEF viz. Dr. S.K. Khanduri, Dr. Satpathy, and Dr. Burman. The HLWG would also like to express our thanks to Dr. V. Rajagopalan, Secretary, Ministry of Environment and Forests, for his keen interest in the progress of the HLWG and also extending the support of the Ministry whenever called for.

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SUMMARY OF RECOMMENDATIONS AND ACTION PLAN

The observations and discussions presented in different chapters of this Report clearly indicate unambiguously that the eco-system of Western-Ghats is in need of urgent attention and action. Out of the estimated 1,64,280 km² of the Western-Ghats area, the natural landscape constitutes only 41 per cent. The area identified as ecologically sensitive is about 37 per cent i.e., about 90 % of the natural landscape. It is against this backdrop of a fast dwindling unique ecosystem, that we make these recommendations. Needless to emphasize, there is a great sense of urgency, in the implementation of the tasks arising out of these recommendations, even though, we fully recognize the sincere commitment that each of the Six States has displayed in the context of protecting the rich Bio-diversity of this mountain range. In making some of the general and sectoral recommendations, we are also aware that many of these are already inbuilt into the present strategies of the respective States. In repeating such recommendations, we are only underscoring the imperatives of implementing such recommendations in letter and spirit. The summary of recommendations are given below:

A. Delineation and demarcation of ecologically sensitive area in Western Ghats region

1. In the absence of accepted definition and delimitation of Western Ghats in terms of geology and geomorphological features, the talukas under Western Ghats Development Programme of Planning Commission and under Hill Development Programme and talukas located at the traditionally accepted northernmost boundary of Western Ghats (south of Tapti river) in Gujarat have been included in defining and delimitation of Western Ghats Region by HLWG. The delimited area of 188 talukas in 6 States of Western Ghats has been designated as Western Ghats Region which spreads over an area of 1,64,280 km² between 8°0'– 22°26' N and 72°55'– 78°11' E and extends over a distance of 1500km from Tapti River at the north to Kanyakumari at the south, with altitudinal range (ellipsoid) from 0 to 2674 m above sea level and

width ranging from 10km (at narrowest point) to 200km (at widest point). HLWG recommends the adoption of the boundaries as demarcated in the Report.

2. About 60,000 km² of natural landscape (approximately 37% of the total geographical area of Western Ghats Region) has been identified as Ecologically Sensitive Area (ESA) by HLWG, which represents more or less a contiguous band of vegetation extending over a distance of 1500 km across 6 States of Western Ghats region and includes Protected Areas and World Heritage Sites. The demarcation unit of ESA is the village. IRS LISS III derived spatial layers on vegetation type and landscape level indices (with a fine spatial resolution of 24 m) were used as the basis for identification of ecologically sensitive areas (ESAs).

To facilitate sustainable development in the WG region, which is inhabited by about 50 million people, the non ESA comprising mostly cultural landscape is also demarcated. HLWG recommends that the Central government should immediately notify the ESA area, demarcated by HLWG in public interest. The need for urgent action is evident. In this notified area, development restrictions as recommended in this report will apply.

3. MoEF should put the ESA map in the public domain, which will enable scrutiny and transparency in decisions.

B. Development Restrictions in proposed Ecologically sensitive areas

4. HLWG is recommending a prohibitory and regulatory regime in ESA for those activities with maximum interventionist and destructive impact on the ecosystem. All other infrastructure development activities, necessary for the region, will be carefully scrutinized and assessed for cumulative impact and development needs, before clearance.

5. There should be a complete ban on mining, quarrying and sand mining in ESA. All current mining areas should be phased out within the next 5 years, or at the time of expiry of mining lease, whichever is earlier.
6. No thermal power projects should be allowed in ESA. Hydropower projects may be allowed but subject to following conditions:
 - (a) Uninterrupted ecological flow at atleast 30 per cent level of the rivers flow in lean season till a comprehensive study establishes individual baselines.
 - (b) After a cumulative study which assesses the impact of each project on the flow pattern of the rivers and forest and biodiversity loss.
 - (c) Ensuring that the minimum distance between projects is maintained at 3 km and that not more than 50 per cent of the river basin is affected at any time.
7. HLWG recommends that wind energy should be included in EIA notification and brought under purview of assessment and clearance.
8. All 'Red' category industries should be strictly banned. As the list of industries categorized as 'orange' includes many activities like food and fruit processing, there will not be a complete prohibition on this category. But all efforts should be made to promote industries with low environmental impacts.
9. Building and construction projects of 20,000 m² and above should not be allowed. Townships and area development projects should be prohibited.

10. All other infrastructure and development projects/schemes should be subject to environment clearance under Category 'A' projects under EIA Notification 2006.
11. Additional safeguard for forest diversion in ESA should be introduced. In cases of forest clearance required in ESA, all information of the project, from application stage to approval should be placed in the public domain on the website of MoEF and of the forest department of the respective States.
12. All development projects, located within 10 km of the Western Ghats ESA and requiring Environment Clearance (EC), shall be regulated as per the provisions of the EIA Notification 2006.
13. HLWG recommends a framework for governance and regulation of ESA, which draws on current regulatory institutions for decision-making, but simultaneously, strengthens the data monitoring systems and the participation and involvement of local communities in decision-making.
14. Existing regulatory institutions and processes for environment and forest clearances and project monitoring would need to be greatly strengthened for the governance framework to be enforced and monitored effectively.
15. The villages falling under ESA will be involved in decision making on the future projects. All projects will require prior-informed consent and no-objection from the Gram Sabha of the village. The provision for prior informed consent under the Forest Rights Act will also be strictly enforced.
16. The State Governments should also ensure consultation with local communities while planning for protection of wildlife corridors.
17. State Governments should immediately put in place structures for effective enforcement of development restrictions and ensuring sustainable development in ESA.

C. Financial arrangements and Incentivising Green Growth in Western Ghats region

18. HLWG recognizes that the Western Ghats even in those areas categorized as natural landscapes, is inhabited. It is not wilderness area, but the habitat of its people, who share the landscape with biological diversity. Conversely, the cultural landscape is also biologically rich and the economic growth of the entire region comes from its natural endowment of water, forests and biodiversity. For this reason, HLWG has recommended policies to incentivize environmentally sound growth across the Western Ghats.
19. HLWG recommends that the Western Ghats States should come together to negotiate for a grant-in aid from the Centre. The financial arrangement should be of the nature of a debt for nature swap. This is a mechanism whereby part of the outstanding debt of a State is swapped for new constructive initiatives by it to protect its natural resources. A part of these payments be retained by the State Governments and a part be used to finance local conservation trust funds (as in several countries), which disburse grants to community projects for improving forest productivity and ensuring sustainable forest based livelihoods in ESAs. In addition, the 14th Finance Commission should consider substantially increasing the fund allotted to States by the 13th Finance Commission for forest and environmental conservation.
20. HLWG recommends that there should be arrangements for Payments for Ecosystem Services accruing from ESA and non-ESA regions within the Western Ghats. HLWG also recommends that individual State Governments pursue such initiatives which may create possibilities for a dialogue on this issue between municipalities and relevant Panchayats within their States.

21. HLWG recommends considering extending Entry 20 (Economic Planning) in the Concurrent List, and introduce an appropriate new entry, say 20A, suitably titled, to ensure that developmental projects and activities are undertaken within an overarching environmental and ecological framework.
22. The Planning Commission should create a special Western Ghats Sustainable Development Fund, as proposed in this Report. This fund will be used to promote programmes specifically designed to implement an effective ESA regime and incentivize green growth in the region.
23. The 14th Finance Commission should consider options for ecosystem and other service payments in the Western Ghats as well as allocation of funds to ESA areas. It should also consider how these funds for environmental management would be made available directly to local communities who live in and around Western Ghats ESA.
24. The Planning Commission is currently working on a ranking of States based on Environmental Performance Index (EPI) developed by it. The EPI could be used to devolve funds to the States. ESA should get 'plus payments' which should be paid directly to the village community.
25. The strategy evolved for the continuation of the Western Ghats Development Programme, in the 12th Plan centres around, besides watershed based development, fragility of the habitat, and development needs of the people i.e. a Watershed + approach – an approach which emphasizes conservation, minimal ecological disturbance, involvement of locals along with sustainable model of economic development and livelihood generation with enhanced allocation. After a careful consideration of the strategy proposed, the HLWG recommends the following:
 - (a) Continuation of the WGD program with an enhanced allocation of Rs. 1000 crores,

- (b) Continuation of the special category status to the program i.e. cost sharing of 90:10 between Centre and State,
 - (c) Revival and reconstitution of the High Level Committee consisting of CMs of the six States, for monitoring the implementation of the recommendations /suggestions of the HLWG and existing legislations and periodical review the status report of the Decision Support and Monitoring Centre for Western Ghats Region,
 - (d) Setting up / strengthening of the State WG cell with a mandate to liaise with SPCB, State Department of Forests, SEAC and SBA, and Regional office of the MoEF and service the information and decision support needs of the State Government.
26. Forest management for inclusive development should require policies to integrate forest accounts, including measurement of the tangible and intangible benefits into State and National economic assessments and policies to improve productivity of forests for economic benefits for local communities.
27. The current rules of timber transit, which do not incentivize forest production on private lands and community forestlands, should be reviewed and revised. The Forest Rights Act's categorization of minor forest produce, including bamboo should be promoted to build forest-based local economies.
28. To promote sustainable agriculture, HLWG recommends a focused programme to incentivize growers in the Western Ghats to move towards organic cultivation and to build a unique 'brand' for such premium products in the world market.
29. In order to promote sustainable tourism, HLWG recommends the following:

(a) Existing regulatory provisions to assess environmental impact of tourism projects must be strengthened.

(b) The tourism policy for Ecologically Sensitive Area of the Western Ghats must provide local community ownership and benefits.

(c) All tourism hotspots in the Ecologically Sensitive Area should be monitored for compliance with environmental conditions and development restrictions and assessed in terms of impact.

D. Decision Support and Monitoring Centre for Western Ghats

30. The management of Western Ghats ecology involves conservation, protection and rejuvenation as well as sustainable development in Western Ghats through periodic assessments of environment and ecology on a long term basis across the Six States of Western Ghats region using state-of-art geospatial technologies. The information generated will be used for wide range of purposes including planning and policy formulation from time to time, keeping in view of changes monitored both in time and space. A Centre with the mandate to: (i) use the existing and new knowledge to build a vibrant political dialogue in the region as a whole on the need to make shifts in development paradigm, given its particular vulnerability, (ii) assess and report on the state of ecology of the entire region, and (iii) provide a decision support function in the implementation of ESAs is essential. With this objective in view, HLWG recommends for setting up the “Decision Support and Monitoring Centre for Western Ghats” by MoEF and it will be hosted by one State and will have joint management of all Six States of the Western Ghats region for conservation of the ecology and sustainable and equitable development in Western Ghats Region.
31. For the first time in conservation ecology and sustainable development, HLWG with the help of NRSC developed a scientific, objective and practical way of identifying Ecologically Sensitive Areas (ESAs) at a fine resolution of

24 m with village as a unit, using IRS LISS III derived spatial layers of vegetation type and landscape indices (based on ground truthing involving 100's of sampling sites under DBT-ISRO project on Biodiversity Conservation). The maps generated on GIS platform having different layers have a wide range of applications. Consequently, the HLWG recommends that the approach followed for identification of ESAs serves as a model for replication elsewhere in the region and country.

E. Climate change and Western Ghats

32. The predictions on climate change have been made using Global Climate Models (GCMs) and Regional Climate Models (RCMs) with resolutions at 100km and 25km, respectively, which are very coarse for Western Ghats, the width of which varies from 10 to 200km. There is a need for downscaling of the data for ecosystem change models such as Dynamic Vegetation Growth Models (DVGM) and Ecological Niche Models. HLWG recommends that the proposed Centre may undertake these studies. In any case, the likely increase in temperature regime, rainfall and extreme events, besides decrease in the duration of precipitation which alone has serious concern for Western Ghats ecosystem - increased water stress to the forests, in fire incidences, evapo-transpiration and surface runoff. As a adaptive measure to these changes, a number of adaptive strategies such as (i) species-mix plantations, (ii) planting of hardy species that are resilient to increased temperature and drought risk, and (iii) launching of a few adaptive projects such as anticipatory plantation along altitudinal and latitudinal gradient and linking of PAs and forests fragments and implementing advance fire warning strategy, which have been outlined in Chapter 3, should be taken into account while formulating policies across Western Ghats region

F. Specific cases referred to HLWG

33. HLWG is of the view that while the importance of the proposed Athirappilly hydropower project for meeting the peaking power requirements of the State cannot be disputed, there is still uncertainty about ecological flow available in the riverine stretch, which has a dam at a short distance upstream of the proposed project. It recommends that given the increased variability due to unpredictable monsoon, the project must be revaluated in terms of the generation of energy and whether the plant load factor expected in the project makes it viable against the loss of local populations of some species. Based on this revaluation and collection of data on ecological flow, the Government of Kerala, could take forward the proposal, if it so desires with the Ministry of Environment and Forests.
34. As the proposed Gundya hydropower project is located in the ESA, it must be proceeded upon with extreme caution. HLWG recommends that the Government of Karnataka should reassess the ecological flow in the downstream areas, based on a thorough evaluation of hydrological regimes in the area. The project should not be given the go-ahead, till such a review and reassessment is made. The Government's review must also assess local damage to all forests, which will emanate from the construction work and if at all, this can be mitigated. The HWLG has not proposed a complete ban on the construction of hydropower projects in the ESA, but its recommended conditions that balance the needs of energy with environment, must be followed.
35. HLWG has recommended that there should be a complete ban on mining activity in ESA and that current mining activities in ESA would be phased out within five years, or at the time of expiry of the mining lease, whichever is earlier. In view of the fact that the matter of iron ore mining in Goa is

pending before the Hon'ble Supreme Court, HLWG does not find it appropriate to make any other recommendation in the matter.

36. Sindhudurg and Ratnagiri districts have three categories of areas: (i) area under ESA, (ii) area under non ESA within Western Ghats and (iii) area outside Western Ghats region. HLWG recommends that the moratorium imposed should be lifted with the following conditions. As per the recommendations of this report, in the area of these two districts, which has been categorized as ESA, the sectoral restrictions and regulations will apply. In addition, all development projects located within 10 km of the Western Ghats ESA and requiring Environment Clearance (EC) shall be regulated as per the provisions of the EIA Notification, 2006. In the remaining area, including the area outside ESA but within Western Ghats, environment and forest processes and regulations will continue to apply. However, in order to ensure that such development projects do not adversely impact the environmental balance of the two districts, MoEF should monitor on regular basis the cumulative impact of projects, which may come up in these districts and take policy decisions at appropriate time based on such findings.

Action Plan

- I Considering the urgency in protecting and safeguarding the remaining biodiversity rich areas in Western Ghats, MoEF needs to notify ESA recommended by HLWG and also issue other notifications, regulations etc., as may be required to implement the aforesaid recommendations as soon as possible in public interest.
- II The aforesaid recommendations clearly bring out the requirements for their implementation. MoEF should be the overall nodal Ministry to ensure timely implementation of these recommendations. Each of the Six State

Governments may identify the nodal department to co-ordinate the implementation of these recommendations in the State.

- III On recommendations relating to financial arrangements and incentivising green growth in Western Ghats region, co-ordinated action needs to be taken by MoEF, Planning Commission and Ministry of Finance. In particular, the 14th Finance Commission should be persuaded to provide sufficient allocation of funds to the States in the Western Ghats for forest and environment conservation. Further, as recommended above, the Planning Commission should strengthen the implementation of Western Ghats Development Programme.

CHAPTER 1

Introduction

The Western Ghats (WG) or the Sahyadri is the majestic mountain range on the fringes of the west coast of India. It is one among the seven great mountain ranges in the country and is next only to the Himalayas. Its landscape is unique in terms of geology, biology and ecology. The mountain range extends over a distance of 1500-1600 km from Tapti river in the north to Kanyakumari in the south with an average elevation of more than 600 m and traverses through Six States viz. Gujarat, Maharashtra, Goa, Karnataka, Kerala and Tamil Nadu. Its geology and geomorphology coupled with high rainfall makes the Western Ghats as one of the most ecologically diversified landscapes. It is this ecological diversity of WG that supports: (i) a wide range of forest types ranging from tropical wet evergreen forests to grasslands, (ii) some 4000 species of flowering plants with high degree of endemism and (iii) rich fauna with endemism ranging from 11% to 78% among different groups. Consequently, Western Ghats constitutes not only one of the hotspots of biodiversity in the world, but also one among world's eight hottest hotspots.

The Western Ghats is the home for about 50 million people belonging to the Six States of the Country. It is the source of water for the entire Peninsular India, and also influences the monsoons. The life supporting and biodiversity rich ecosystems of Western Ghats are threatened today due to habitat pressures.

1.1 Background and Constitution of HLWG

The Ministry of Environment & Forests (MoEF), Government of India, has been concerned with degradation of Western Ghats in the past due to increasing population pressure. Keeping in view of the ecological sensitivity and significance of the region, complex interstate nature of its geography and also possible impacts of climate change, the MoEF constituted a 14- member Western Ghats Ecology Expert

Panel (WGEEP), with Professor Madhav Gadgil as its Chairman, on 4th March 2010. The Panel submitted its report on 30th August 2011.

Considering the complex interstate character of the Western Ghats and the recommendations of WGEEP which involved demarcation of Ecologically Sensitive Zones (ESZ) and zonal regulations of important sectors of activities, the Ministry sought comments/suggestions of all stakeholders. Over a thousand and seven hundred responses were received by the Ministry when the WGEEP Report was made public and put on the website of the Ministry.

It is in this background that the MoEF constituted the High Level Working Group (HLWG) vide office order dated 17th August 2012 (Annexure 1) with *inter alia* the following terms of reference:

(i) examine the WGEEP Report in a holistic and multidisciplinary fashion in the light of responses received from the concerned Governments of States, Central Ministries and Stakeholders, keeping in view the following matters: (a) sustainability of equitable economic and social growth in the region while preserving the precious biodiversity, wildlife, flora and fauna and preventing their further losses; (b) ensuring the rights, needs and developmental aspirations of local and indigenous people, tribals, forest dwellers and most disadvantaged sections of the local communities while balancing equitable economic and social growth with sustainable development and environmental integrity; (c) the effects and impacts of climate change on the ecology of Western Ghats region, (d) the implication of recognizing some sites in Western Ghats as world heritage sites in the conservation and sustainable development in Western Ghats and (e) the constitutional implications of Centre –State relations with respect to conservation and sustainable development in Western Ghats; (ii) to interact with the representatives of the Six States of Western Ghats region and other stakeholders, particularly environmentalists and conservation specialists; (iii) to suggest to the Government for further course of action on WGEEP Report; (iv) any other relevant matter that

may be referred to it by the Central Government; and (v) submission of Action Plan to implement WGEEP Report in the most effective and holistic manner.

1.2 Working of HLWG

During its tenure HLWG held 10 meetings, undertook four field visits and had interactions with State Governments and stakeholders (Annexure 2).

In the first meeting of HLWG, the MoEF presented an overview of the WGEEP Report and responses of State Governments, Central Ministries and Stakeholders. The Group decided to carefully review the Report of the WGEEP submitted in line with the terms of Reference assigned / its given TORs .

To achieve this and to address the issues raised by stakeholders on WGEEP Report, the HLWG decided to adopt a number of approaches. These approaches are described below. One approach followed was to visit different States in Western Ghats region and interact with democratically elected State Governments and other stakeholders. During its tenure, HLWG visited Maharashtra, Karnataka, Kerala and Goa.

In Maharashtra, HLWG held discussions with the Hon'ble Chief Minister Shri Prithviraj Chavan, his Cabinet colleagues, Chief Secretary and Secretaries of relevant Departments.

In Karnataka, the HLWG held discussions with Chief Secretary and Secretaries of relevant Departments and Forest Officials. Chairman HLWG also met the Hon'ble Chief Minister Shri Jagadish Shettar.

In Kerala, HLWG had discussions with Hon'ble Chief Minister, Shri Oommen Chandy, his Cabinet colleagues, Chief Secretary and Secretaries of relevant Departments and

Chairperson of State Biodiversity Board. The HLWG also met elected representatives of Parliament and State Legislature.

In Goa, HLWG had discussion with Hon'ble Chief Minister Shri Manohar Parrikar and Secretaries of relevant Departments.

During these visits, HLWG also met Stakeholders including representatives of civil society, NGOs, professionals, industry and trade associations, planter associations, professionals, academicians and local communities.

The second approach followed was to elicit responses from State Governments and Central Ministries to a questionnaire formulated by HLWG based on its ToRs. The third approach adopted was to make field visits to the sites of the developmental projects activities which were to be reviewed as per the ToR. As a part of wider consultations, HLWG also visited Pune and held discussion with Professor Madhav Gadgil, Chairman, WGEEP.

HLWG couldn't visit the States of Tamil Nadu and Gujarat as no convenient dates for the visit could be finalized in consultation with the State Governments. However, their inputs were received and were duly considered by HLWG while firming up its recommendations.

HLWG undertook field visits to assess the ground reality with respect to two proposed hydropower projects (Athirapilly and Gundy), development activities in Sindhudurg and Ratnagiri, Mining in Goa, and area specific issues related to Idukki and Wayanad. During these visits, HLWG interacted with Stakeholders, NGOs and activists besides the project staff and officials of district administration and concerned Departments of the States.

The following ten Central Ministries provided their comments to the HLWG for consideration (i) Ministry of Steel, (ii) Ministry of Mines, (iii) Ministry of Urban

Development, (iv) Ministry of Commerce, (v) Ministry of Railways, (vi) Ministry of Power, (vii) Ministry of Agriculture, (viii) Ministry of Tribal Affairs, (ix) Ministry of Rural Development, and (x) Ministry of Tourism.

HLWG solicited help of National Remote Sensing Centre (NRSC), Indian Space Research Organization (Hyderabad) to undertake geospatial analysis of Western Ghats region to demarcate and evolve scientific, objective and a practical approach for identification of Eco-Sensitive Areas (ESA) in Western Ghats, at a finer resolution with the village as the unit. HLWG had a number of detailed discussions with the Director and Scientists of NRSC for selection of criteria and the methodologies to be followed for geospatial analysis.

A one-day intensive brainstorming session was held at NRSC to look into the following technical issues viz. (i) the definition and demarcation of boundaries of Western Ghats in terms of geology and geomorphology, (ii) review of geospatial data sets available on WG and (iii) improvement of methodologies used in geospatial analysis for identification of eco-sensitive areas. Eminent geologists, geomorphologists, wildlife experts from Wildlife Institute of India (WII) and Wildlife Trust of India (WTI), University Departments and Geological Survey of India participated in the brainstorming session.

Based on these extensive and intensive discussions with experts, HLWG critically examined (i) the geospatial layers to be used, (ii) the data sets available and their compatibility at the level of resolution, (iii) the level of resolution, (iv) the processing load within a reasonable time frame, (v) quality of analysis and (vi) optimization of 24 m resolution. After taking into account the evaluation of these parameters, it was decided to use the data sets generated under DBT-ISRO project at landscape level on natural and cultural landscapes, biological richness, fragmentation, human population density, the data sets of Protected Areas (PAs) and World Heritage Sites (WHSs), Tiger corridors available at WII, and dataset of

Elephant corridors of WTI for identification of ecologically sensitive areas, at a fine resolution of 24m using village as a unit.

The geospatial analysis carried out at NRSC and the results obtained were reviewed by a three member peer-review Committee under the Chairmanship of Dr. Y.V.N. Krishnamurthy, Director, Indian Institute of Remote Sensing, Dehradun (Appendix I).

1.3 Scope of the Report

The HLWG Report provides a set of recommendations and Action Plan for the conservation of the unique ecology and sustainable and equitable development in Western Ghats region based upon: (a) careful examination of the WGEEP Report, (b) the submissions received from State Governments, Central Ministries and Stakeholders on the Report, (c) direct interactions of HLWG (during field visits) with Four State Governments at different levels (Chief Ministers, Chief Secretary), elected representatives of State Legislative Assemblies and Parliament and other stakeholders, and (d) written responses submitted by all the Six States and Twelve Central Ministers to the questionnaire sent by HLWG.

This report is organized in two volumes. Volume I is the main Report and Volume II contains the Annexures to the main Report. The main Report has eight Chapters. The first chapter details the uniqueness of Western Ghats, the background that led to the constitution of HLWG by the Government and its ToRs, working of the HLWG and scope of the Report. Chapter 2 covers the evaluations of Comments / Observations of State Governments, Central Ministries and Stakeholders and provides statistical analysis of the responses received on WGEEP Report including the questionnaire sent to State Governments and Central Ministries. It also highlights the issues of concern communicated by the Six States and Twelve Central Ministries.

Chapter 3 outlines the impacts of climate change on the ecology of Western Ghats and provides the likely impacts of climate change in key sectors such as forests and biodiversity, agriculture, water, irrigation and hydropower in Western Ghats, and also suggests adaptive strategies to overcome some of the impacts. Chapter 4 explains the procedure adopted by HLWG to define and demarcate the boundaries of Western Ghats for identifying Ecologically Sensitive Areas in the absence of accepted definition of Western Ghats. The Chapter reviews the different approaches followed in the past for demarcating the boundaries of Western Ghats based on the geological origin and structure, geomorphology, altitude, vegetation cover and rainfall. Chapter 5 deals with the need for scientific, objective and practical strategy for delimiting Ecologically Sensitive Areas in the light of comments received on the shortcomings of the method of zoning in WGEEP Report. It explains the geospatial methodologies followed by HLWG and the procedures followed in delimitation of Western Ghats region into Natural and Cultural landscapes. It explains the methods of delineation of ESA within the natural landscape with village as a unit and at a fine resolution of 24 m, including the overlaying of PAs, WHSs and Wildlife corridors on the ESA. The results obtained based on the methodology adopted by HLWG are analyzed for 188 talukas in terms of the area covered under ESAs and number of villages falling under ESA. Maps of Western Ghats showing vegetation and land cover classes, natural and cultural landscapes, biodiversity richness, fragmentation and human population density and ESA, and Maps of each of Six States showing natural and cultural landscapes and ESAs are also provided.

Chapter 6 deals with the strategies proposed by HLWG for sustainable and inclusive development with environmental integrity in Western Ghats region. The Chapter also outlines recommendations for sector level planning and development restrictions in ESAs for major sectors such as mining, energy, industry, and infrastructure. It also explains the mechanisms and financial arrangement for incentivizing green growth and the challenges of having world heritage tag for 39 sites in Western Ghats region. It also recommends a frame work for governance and

regulation, with a key recommendation on the setting up a “Decision Support and Monitoring Centre for Western Ghats”.

Chapter 7 outlines the details of proposed “Decision Support and Monitoring Centre” for Western Ghats to build a knowledge base and provide technical/decision support to the State Government. The Centre would enable monitoring, using geospatial technologies and this would lead to sustainable development of the region. The objectives of the proposed Centre and the modalities for its establishment are also detailed.

Chapter 8 reviews the two proposed hydropower projects at Athirappilly in Kerala and Gundya in Karnataka, development activities in Sindhudurg and Ratnagiri and mining in Goa, keeping in view the: (i) assessment made by WGEEP, (ii) discussions held with State Governments and local stakeholders, and (iii) field visits to the sites by HLWG.

In summary, this report has addressed the Terms of Reference mandated to the HLWG, reviewed the current status of Western Ghats including the contents of WGEEP Report, outlined the approaches adopted for defining Western Ghats boundaries, described the methodology used for delineating the ESA and has provided the details for interpretation and conclusions leading to a set of recommendations and the follow up actions.

CHAPTER 2

Evaluation of Comments of Stakeholders, State Governments and Central Ministries

2.1 Introduction

To elicit the views of the Stakeholders, concerned State Governments and Central Ministries and to assess the implications of the WGEEP Report for the Western Ghats region both in terms of Conservation of Ecology and Sustainable Development, the MoEF hosted the WGEEP Report on the website on 23rd May 2012. The HLWG evaluated the responses received from the stakeholders and further called for detailed comments and views through a questionnaire drafted by the Group from the six Western Ghats States (Gujarat, Goa, Maharashtra, Karnataka, Kerala and Tamil Nadu) and held discussions with Four State Governments, viz. Maharashtra, Karnataka, Kerala and Goa. Discussions with the State Governments of Tamil Nadu and Gujarat were not held as mutually convenient time could not be fixed. However, their inputs were duly considered by HLWG while firming up its recommendations.

Secretaries of twelve concerned Central Government Ministries, i.e., Power, Steel, Agriculture, Commerce & Industry, Urban Development, Railways, Rural Development (Department of Land Resources), Tribal Affairs, Tourism, Water Resources, Mines & Surface Transport were also requested by the HLWG for comments on the WGEEP Report. This Chapter provides an analysis of the responses received.

2.2 Analysis of Responses received from Stakeholders

2.2.1 Responses received from Stakeholders on the WGEEP Report before the constitution of HLWG

Over a thousand seven hundred and fifty responses were received from stakeholders including local Self Governments, Industry, Experts, local individuals etc. The summary of the comments /suggestions received on the WGEEP Report are given in Annexure 3. The responses received were analysed and were assigned under two major groups viz: Responses ‘not in favour’ and ‘in favour’ to WGEEP Report. Eighty one percent of the communication received expressed concerns regarding the recommendations and also the methodology followed. All the responses were further analysed for issues of concern and categorized under the above two major categories of responses.

Responses “not in favour” of the WGEEP report could be classified into six heads namely 1. Zoning Methodology, 2. Moratorium on Lote Parshuram, 3. Mining in Sindudurg , 4. Mining in Goa, 5. Establishment of WGEA and 6. General Comments. While the Responses “in favour” of the report dealt with, Gundiya Hydropower project, implementation of the WGEEP Report, translation of the report in local languages and extension of time limit for responses and General Comments (Annexure 4). The percentage responses under both the heads category wise is illustrated in (Fig 1a & Fig-1b).

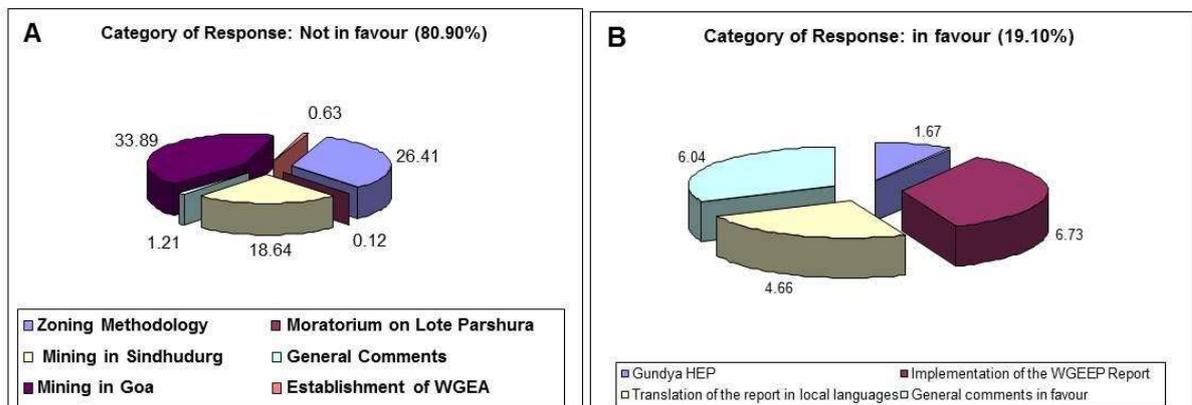


Figure 1: Percent of Responses under categories ‘Not in favour’ (A) and ‘in favour’ (B), to WGEEP Report and distribution pattern of percent responses to different aspects of WGEEP Report

2.2.2 Responses received from Stakeholders after the constitution of HLWG

A hundred and forty five responses were received by the HLWG till the end of March 2013 from stakeholders. The Group carefully analyzed the responses received and made an attempt to address the concerns expressed. Of the 145 responses received, only 30.34% of the responses supported the WGEEP Report. Of the remaining 69.66 % responses, most of them commented on the inappropriateness and unimplementable nature of the recommendations made in the Report. A few also suggested modifications to enable acceptance of the report to some extent. The responses received include specific comments on large Grid Size used, boundaries of talukas, cultivation of GM crops , livelihood issues and project specific comments especially w.r.t. Athirappilly and Gundya HEPs. The issue of moratorium on new clearances for mining, setting up of red and orange category industries in Eco-sensitive Zones, establishment of an authority for monitoring and implementation of the recommendations, enforced organic cultivation, Cumulative EIA and decommissioning of dams and HEPs have been extensively mentioned among these responses.

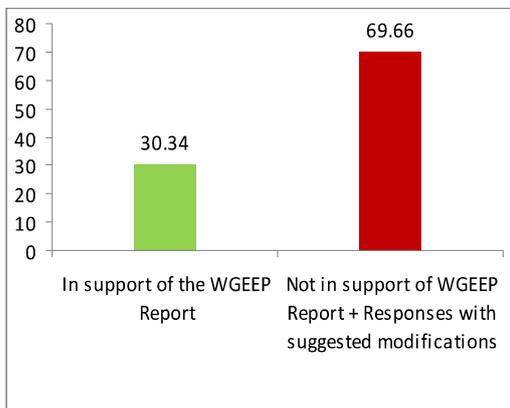


Figure 2: Frequency distribution of responses under the two categories 'in support' and 'not in support' to WGEEP Report

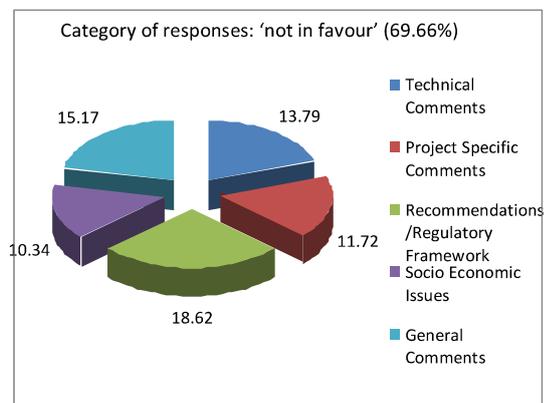


Figure 3a: Distribution pattern of response classified to different aspects of WGEEP Report under category 'not in favour'

Figure 2 depicts distribution of percent responses under 'in support' and 'not in support' which also includes the ones which support the WGEEP Report with suggested modification.

The responses received to WGEEP Report were grouped under two categories- 'in favour' and 'not in favour' and then analysed. The percent distribution of responses to five aspects viz. Technical, Project/Area Specific, Socio-economic Concerns, Recommendations/ Regulatory Framework and General are given in Figure 3a & b (Annexure 5).

Detailed analysis of the two categories of responses 'for' and 'against' to specific concerns on eco-sensitive zones, need and acceptability of Hydel Power, new institutional mechanism for approvals, monitoring and implementations, scientific methodology and cumulative EIA was also carried out (Figure 4).

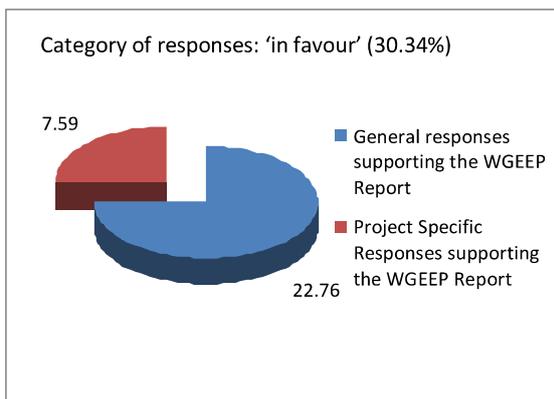


Figure 3b: Distribution pattern of percent responses to different aspects of WGEEP Report under category 'in favour'

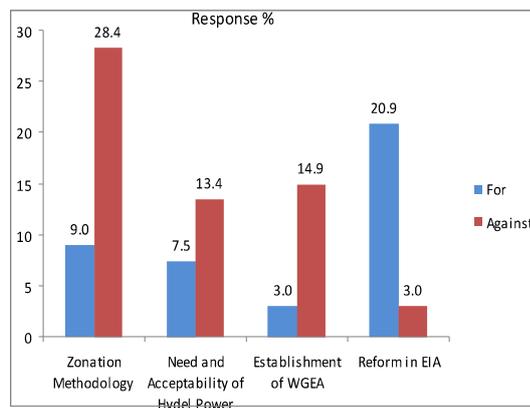


Figure 4: Frequency distribution pattern of responses to different aspects of WGEEP Report under each of the two categories

2.3 Comments received from State Governments

A comparative statement of major comments of the six State Governments to Sectoral recommendations and the WGEEP Report is at Annexure 6.

The comments received were grouped under mining, quarry and sand mining, land use, transport, non conventional energy (wind energy etc), power/ energy including hydro power, water – irrigation and inter basin diversion of water from rivers, polluting industries (red/orange), agriculture, tourism, forestry on public and

private land, biodiversity, waste treatment, animal husbandry, area development, green buildings and Genetically Modified Organisms (GMOs).

The responses received from the States on the above sectors/issues are summarized below:

1. Citing socio economic development needs, possible law and order situation and livelihood imperatives, a complete ban on mining in ESZ 1 has not been agreed to by the States except Karnataka which has stopped the issue of permissions for mining in Western Ghats.
2. The need to allow quarrying and sand mining with Environmental Impact Mitigation measures without compromising ecological and environmental balance and on institution of a special scheme for regulating mining has been stressed by the States of Maharashtra, Kerala and Gujarat.
3. Recommendations regarding no change in land use in ESZ areas, no new permission for Special Economic Zone and no new hill stations in public land have not been agreed to by the State of Maharashtra. The State of Kerala has accepted the recommendation subject to the relevant provisions of law as existing legal provisions do not permit such conversion in the State.
4. The States of Maharashtra, Kerala and Gujarat have clearly indicated that restriction on transport infrastructure recommended in the Western Ghats Region is unacceptable.
5. The States of Maharashtra, Kerala and Gujarat have indicated the need to set up solar and wind energy infrastructure which are sources of green energy.
6. The embargo on new Hydroelectric projects and the conditions imposed on them are unacceptable to the States of Kerala, Maharashtra and Tamil Nadu.
7. The State of Karnataka has indicated that the recommendation on Hydropower projects will be taken into consideration while taking up projects in the WG Region in the State. Restriction on dam height and recommendation regarding decommissioning of dams and thermal power projects has been strongly opposed by the States of Kerala, Maharashtra, Tamil Nadu and Gujarat.

8. Indicating that the recommendation on no inter basin diversion of water from rivers is against the Water Policy and suggesting that water needs to be allowed for human needs from water surplus to water deficit basin, the States of Maharashtra, Kerala and Tamil Nadu have strongly registered their objection to this recommendation.
9. Many of the recommendations especially w.r.t. water sector like catchment area treatment, protection of high altitude valley, swamps, water bodies, water conservation measures, rehabilitation of mined areas and improved river flow and scientific water quality management have been accepted by the States of Maharashtra and Kerala.
10. Maharashtra State has clearly indicated that the complete ban on red and orange industry imposed would greatly affect the 37 MIDC areas falling under the ESZ. Hence it is strongly opposed to such a move.
11. The States of Kerala and Maharashtra have suggested imposition of stringent pollution standards and monitoring of red and orange category industry.
12. The States of Karnataka, Kerala and Maharashtra have accepted promotion of organic agricultural practices including phasing out of use of insecticides, promoting ecological farming etc. They have, however, recommended incentives for farmers shifting to organic farming including budgetary support.
13. With a caveat that the ecotourism policy of the MoEF shall be refined by the State of Karnataka, Karnataka and Kerala have accepted the safe tourism practices advocated.
14. Recommendations with regard to forest and biodiversity and implementation of the Forests Rights Act, have been accepted by the States of Karnataka, Kerala and Maharashtra. The State of Kerala has suggested possible introduction of incentives for maintaining natural vegetation.
15. Introduction of incentives for biodiversity conservation has been accepted by the State of Kerala subject to Special Funds being made available to Biodiversity Management Committees and devolution of funds to the State Department of Environment.

16. The State of Kerala has accepted the recommendation regarding no hazardous and toxic waste processing unit in ESZ1 and ESZ2.
17. Recommendations regarding introduction of incentives for maintenance of land races of livestock, redeploying subsidies for chemical fertilizers and related recommendation w.r.t. Protected Areas have been accepted.
18. The State of Kerala has also accepted the need for best practices for construction, top soil conservation, green building certification etc. regarding area treatment and development subject to legislation in the State and local conditions.
19. The State of Kerala has stated that exclusive building code for the Western Ghats region is unacceptable.
20. Karnataka, Kerala and Tamil Nadu have accepted the recommendation that Genetically Modified Crops should not be allowed in the Western Ghats. The State of Kerala has however qualified the acceptance subject to State policy.
21. The State of Kerala has indicated that the plastic bags are being managed and would be managed as per existing rules "The Recycled Plastic (Manufacture and Usage) Rules" notified under the Environment Protection Act, 1986.
22. The Govt. of Tamil Nadu has constituted a Hill Area Conservation Authority (HACA) in 1990/2003. HACA is a regulatory authority for Thirty One talukas in Nine districts which fall in Western Ghats of the State.
23. The recommendations on the establishment of Western Ghats Ecology Authority (WGEA) has not been accepted by all the State Governments.

2.4 Comments received from Central Government Ministries /Departments.

Ten out of the twelve concerned Central Government Ministries, viz; Power, Steel, Agriculture, Commerce & Industry, Urban Development, Railways, Rural Development (Department of Land Resources), Tribal Affairs, Tourism, Water Resources, Mines and Surface Transport have communicated their views/ comments on the WGEEP Report.

The Ministry of Power has indicated the need to examine individual projects especially hydro power on the merits and demerits and take a decision on a case to case basis, instead of a blanket ban which is recommended. They have also suggested a review based on the need and progress made on Athirappilly and Gundya projects. An omnibus ban on mining activity in the ecologically sensitive zones of the WG is considered inappropriate by the Ministry of Mines.

As per the Ministry of Commerce, if the recommendations of Gadgil Committee are accepted, species indigenous to India like cardamom, pepper and some of the tree spices might suffer heavily, which will adversely affect our trade in spices.

Ministries of Urban Development, Tourism and Tribal Affairs suggested that recommendations and action points mentioned in the WGEEP Report on demarcation of WG, Sustainable tourism and implementation of FRA, may be adopted. The Gist of the Comments received from Central Ministries is given in Annexure 7.

Annexure 8 gives responses received from State Governments and Central Ministries.

2.5 Summary

The foregoing analysis of responses from the Stakeholders, the Six WG States, and the Ten Central Ministries indicate, that delineation of Western Ghats, Zonation of Eco-Sensitive Zones, moratorium on Mining, establishment of Western Ghats Ecology Authority, restriction on infrastructure development and decommissioning of dams are areas of great concern to all the stakeholders, however the need to promote Organic farming,, phasing out pesticides, banning Red category industries in eco-sensitive zones found acceptance. The locals including members of the local bodies and elected representative were categorical about specific issues such as translation of WGEEP Report in to local language and extension of time for

comments, restriction on mining in Goa and Sindhudurg, inclusion of certain talukas in ESZ and non grant of permission for Gundy Hydroelectric project.

The concerns expressed and comments/suggestions made by the State Governments, Central Ministries and Stakeholders on the WGEEP Report and on the implications of its recommendations have, after careful scrutiny and scientific analysis, been addressed in various chapters of the Report of the HLWG.

CHAPTER 3

Impact of Climate Change on the Ecology of Western Ghats

3.1 Introduction

Climate change is not only a major global environmental problem but is also an issue of great concern and challenge to a developing country such as ours. The earth's climate has demonstrably changed on both global and regional scales since the pre-industrial era, with some of these changes attributable to human activities. The observed changes in regional climate have already affected many of the physical and biological systems and there are also indications that social and economic systems have also been affected. Climate change is likely to threaten food production; increase water stress and decrease its availability; lead to sea level rise flooding crop fields and coastal settlements; and increase the occurrence of disease such as malaria. India has limited capacity to develop and adopt strategies to reduce their vulnerability to changes in climate in the wake of adequate resources, access to technology and finances (NATCOM, 2012).

Assessment of impacts of projected climate change on natural and socio economic systems is central to the whole issue of climate change. Climate change impact assessment involves the following:

- Identification, analysis and evaluation of the impact of climate variability and change on natural ecosystems, socio economic systems and human health
- Assessment of the vulnerabilities which also depend on the institutional and financial capacities of the affected communities such as farmers, forest dwellers and fishermen
- Assessment of the potential adaptation responses
- Development of technical, institutional and financial strategies to reduce the vulnerability of the ecosystems and populations.

India has low adaptive capacity to withstand the adverse impacts of climate change due to high dependence of majority of the population on climate sensitive sectors such as agriculture, forestry and fisheries, coupled with poor infrastructure facilities, weak institutional mechanisms and lack of financial resources. India is, therefore, seriously concerned with the possible impacts of climate change such as:

- Water stress and reduction in availability of fresh water due to potential decline in rainfall
- Threats to agriculture and food security since agriculture is monsoon dependent and rainfed agriculture dominates many States in India
- Shifts in area and boundary of different forest types and threat to biodiversity with adverse implications for forest dependent communities
- Impacts on human health due to increase in vector and water borne diseases such as malaria
- Increased energy requirements and impacts on climate sensitive industry and infrastructure.

Assessment of climate change impacts, and vulnerability and adaptation to climate change, requires a wide range of physical, biological and socio economic models, methods, tools and data.

Principally, the studies on impact of climate change on Western Ghats have been undertaken on forests and crops grown in the region. The methods for assessing the vulnerability, impacts and adaptation are gradually improving but are still inadequate to help policy makers to formulate appropriate adaptation measures, due to uncertainties in regional climate projections, unpredictable response of natural and socio economic systems and the inability to foresee future technological development.

3.2 Impacts of Climate Change on Forests and Biodiversity

3.2.1 Impacts on Forests

The impacts of climate change on forests in India have been assessed based on the changes in area under different forest types, shifts in boundary of forest types, and net primary productivity (NPP). The Assessments in India's Second National Communication to UNFCCC was based on (i) spatial distribution of current climatic variables, (ii) future climate projected by relatively high-resolution regional climate models for two different periods for the A1B* climate change scenario, and (iii) vegetation types, NPP, and carbon stocks as simulated by the dynamic model IBIS v.2, or Integrated Biosphere Simulator. The vegetation distribution simulated by IBIS illustrates an expansion of tropical evergreen forests in the Eastern India Plateau and in Western Ghats.

The assessment of climate impacts show that, at the national level, about 45% of the forested grids are likely to undergo change. Vulnerability assessment showed that the vulnerable forested grids are spread across India. However, their concentration is higher in the upper Himalayan stretches, parts of central India, northern Western Ghats, and Eastern Ghats. In contrast, north-eastern forests, southern Western Ghats, and the forested regions of eastern India are estimated to be least vulnerable. Currently, within the forested area of 69 Mha, only 8.35 Mha is categorized as very dense forest. More than 20 Mha of forest is monoculture, and more than 28.8 Mha of forests are fragmented (open forest) and have low tree density. Low tree density,

***A1B scenario:**

This scenario assumes significant innovations in energy technologies, which improve energy efficiency and reduce the cost of energy supply. Such improvements occur across the board and neither favour nor penalize the particular groups of technologies. A1B assumes, in particular, drastic reductions in power generation costs through the use of solar, wind, and other modern renewable energies, and significant progress in gas exploration, production, and transport. This results in a balanced mix of technologies and supply sources with technology improvements and resource assumptions such that no single source of energy is overly dominant.

Source: IPCC (2000)

low biodiversity status as well as higher levels of fragmentation contribute to the vulnerability of these forests. **Western Ghats, though a biodiversity hotspot, has fragmented forests in its northern parts. This makes these forests additionally vulnerable to climate change as well as to increased risk of fire and pest attack.**

Forests are likely to benefit to a large extent (in terms of NPP) in the northern parts of the Western Ghats and the eastern parts of India, while they are relatively adversely affected in the western and central India. This means that afforestation, reforestation, and forest management in the northern Western Ghats and eastern India may experience carbon sequestration benefits.

Impact on Net Primary Productivity (NPP): An increasing trend over India of NPP based on A1B Scenario has been predicted. An increase on an average of 30.3% by 2035 and 56.2% by 2085 is predicted.

3.2.2 Implications for Biodiversity

In the Western Ghats climate change is expected to increase species losses. Changes in phenology are expected to occur in many species. The general impact of climate change is that habitats of many species will move poleward. Species that make up a community are unlikely to shift together. Ecosystems dominated by long-lived species will be slow to show evidence of change and slow to recover from the climate related stress.

3.3 Impact of Climate Change on Agriculture

Even though there are not many recorded observations on the impact of climatic extremes in the past on crops grown in the area, some of the striking effects have been the adverse impact of the drought of 1983 on many plantation crops.

The analysis of past weather data from different locations representing the major coconut growing Western Ghats areas and yield data from the respective districts,

indicates warming trends in most of the areas . The increase in average maximum temperature varies from 0.01 to 0.04⁰C /year. On the other hand, average minimum temperatures are decreasing in many places. The range in change varies from - 0.03⁰C to +0.03⁰C/ year. Dry spells are in increasing trends in districts of Karnataka and Kerala, whereas reducing trends in coastal Maharashtra. Change in dry spells varies from -1.98 to 0.27 days/year. Change in coconut yields across the country range from -114 to 270 nuts/ha/year.

Agriculture in the relatively high elevation areas (average elevation 1200 m) is characterized, in general, by four typologies:

(i) Large tea, coffee and rubber estates; (ii) Other plantations and spices, which are generally grown as inter crops; (iii) Annual crops-based farming consisting of mainly paddy, vegetables, pulses, tuber crops and millets and (iv) Homestead farming. The homestead farming is one of the key features of WG area, wherein a large number of species of trees (jackfruit, mango, papaya, guava, kokum etc), spices (pepper, nutmeg etc), medicinal plants, plantation crops (coconut, areca nut etc.), biennials and annuals including banana, pineapple, paddy, vegetables and tuber crops are grown.

The key findings of the Indian Network of Climate Change Assessment (INCCA 2012) for scenarios of 2030 are as under:

Rice: The simulation analysis indicates that the productivity of irrigated rice in Western Ghats region is likely to change +5 to -11% in PRECIS A1B 2030 scenario depending upon the location. Majority of the region is projected to lose the yield by about 4%. However, irrigated rice in parts of southern Karnataka and northernmost districts of Kerala is likely to gain. In these areas, current seasonal minimum and maximum temperatures are relatively lower (20-22⁰C T_{min}; 27-28⁰C T_{max}). The projected increase in temperature is also relatively less in these areas (0.5⁰C-1.5⁰C). In the case of rain-fed rice, the projected change in yield is in the range of -35 to +35% with a large portion of the region likely to lose rice yields up to 10%. The

results thus indicate that, irrigated rice is able to benefit due to CO₂ fertilization effect as compared to rain-fed rice, which is supplied with less amount of fertilizers. Farmers in Western Ghats regions falling in north-west parts of Tamil Nadu, northern parts of Kerala and in some parts of Karnataka can reduce the impacts of climate change and can reap higher harvests by adopting crop management strategies and by growing varieties tolerant to climate change.

In addition to Rice, Climate change is likely to reduce the yields of maize and sorghum by up to 50%, depending upon the area in this region. These crops have C₄ photosynthetic systems and hence do not have relative advantage at higher CO₂ concentrations.

Coconut: Coconut yields are projected to increase by as much as 30% in the majority of the region by the 2030. Increase in coconut yield may be mainly attributed to the projected increase in rainfall (~10%) and relatively less increase in temperature, apart from CO₂ fertilization benefits. However, some areas like south-west Karnataka, parts of Tamil Nadu, and parts of Maharashtra may show reduction in yields by up to 24%.

Cocoa: Cocoa is grown as the intercrop either under areca nut or coconut. Being a shade-crop, cocoa is influenced only indirectly by the increase in atmospheric temperature. Analysis indicates that a rise in temperature by 1°C should be beneficial for crop productivity. The improvement is likely to be about 100 kg of dry beans/ha. The cocoa growing foothills of the Western Ghats of Karnataka are more likely to benefit than central Kerala. However, crop management and irrigation supply should be maintained or improved to exploit this benefit. Further, an increase in temperature beyond 3°C is likely to reduce cocoa yields

Livestock Productivity: The Heat Stress Days per annum are likely to increase with the Temperature - Humidity Index (THI) above 80 in 2030s in the Western Ghats.

This would lead to severe thermal discomfort to livestock resulting in negative impact on the productivity.

Agriculture Crop Diversity is important as it can be used to combat risks such as pests, diseases and variations in Climate. Other impact of crop diversity is on nutrition.

3.4 Water, Irrigation and Hydro Power

The potential impacts of climate change on water yield and other hydrologic budget components are quantified by performing SWAT hydrological modeling with current and future climate scenarios for the regional systems. Impacts of climate change and climate variability on the water resources are likely to affect irrigated agriculture, installed power capacity, environmental flows in the dry season, and higher flows during the wet season, thereby causing severe droughts and flood problems.

Detailed outputs have been analysed in the 2nd NATCOM report with respect to the two major water balance components of water yield and actual evapo-transpiration that are highly influenced by the weather conditions dictated by temperature and allied parameters. Majority of the river systems show increase in the precipitation at the basin level. The only two river basins that show some decrease in evapo-transpiration under the EC scenario are Cauvery and Krishna rivers which originate from the Western Ghats.

It is also seen that there is an increase in the moderate drought development for Krishna, Pennar, and Cauvery basins, which have either predicted decrease in precipitation or have enhanced level of evapo-transpiration.

The maximum water withdrawal takes place from Godavari and Krishna river basins in Western Ghats in all the years. Though at basin-level, the comparison between water availability and water demand indicates a comfortable position, but

due to wide temporal and spatial variation in the availability of water, there exists a water crisis-like situation in most areas of the country. It is expected that due to climate change, water availability situation is likely to be aggravated.

Hydro capacity is expected to increase, but its share decreases from the total installed capacity by 2100. The slow growth in capacity is due to barriers of high investment requirements and long gestation periods. A number of socio-environmental issues are related to dam construction, flooding of areas, damages to the ecology, and resettlement and rehabilitation of the population.

3.5 Adaptation Strategies and Measures

Several measures/strategies have evolved during the Eleventh Plan period to address various issues pertaining to Climate Change which have been further improved in the 12th plan outlined as under:

1. In respect of Agriculture in the medium term, the focus is on improving yields with the existing available technology, timely availability of water through expansion of the irrigation system, and also improvement of existing irrigation systems.
2. A species-mix plantation that maximizes carbon sequestration is suggested.
3. Hardy species, which are resilient to increased temperature and drought risk, be planted in Forests of the western and central India.
4. A few pilot adaptation projects could be launched, incorporating adaptation practices, particularly in the most vulnerable regions identified. These include:
 - (i) Modifying the forest working plan code, preparation process and incorporating the projected climate change and likely impacts,

- (ii) Initiating research on adaptation practices, covering both conservation and forest regeneration practices,
- (iii) Linking Protected Areas and forest fragments,
- (iv) Anticipatory planting of species along the altitudinal and latitudinal gradient,
- (v) *in situ* conservation,
- (vi) adopting mixed species forestry in all afforestation programs,
- (vii) Incorporating fire protection and management practices and implementing advanced fire warning systems.

According to the Second National Communication on Climate Change (NATCOM, 2012), the Western Ghats is expected to experience increase in temperature regimes, rainfall and extreme events due to climate change. There is also a high probability of significant decrease in the duration of the precipitation (NATCOM, 2012). This may have serious consequence for the Western Ghats ecosystems which may face decrease in the moisture regimes and increase in fire incidences due to low moisture content in the ecosystems. The projected changes in the precipitation may also induce changes in the hydrological regimes especially increase in evapo-transpiration and increased runoff (Hamlet et al., 2007). Although the projections are modelled using robust climate models which include Global Climate Models (GCMs) and Regional Climate Models (RCMs) with best possible resolution of 100 km and 25 km respectively, the data are very coarse for any study on ecosystem level changes in the Western Ghats which has a width ranging between 10 to 200 km. There is need for downscaling of the data for ecosystem level change models such as Dynamic Vegetation Growth Models (DGVM) and Ecological Niche Models (Franklin et al., 2012). Availability of accurate downscaled projected climate data will help in modeling accurately the decline in the density and abundance of the moisture sensitive species in the Western Ghats. This will also help in modeling the migration or shift of the moisture sensitive species up the moisture gradient as well as in increase and spread of the invasive species (IPCC, 2007).

CHAPTER 4

Definition and Delimitation of Western Ghats Region

4.1 Introduction

Although, references to the Western Ghats have been made several millennia ago, its definition and delimitation is still controversial due to complexity of its geology and geomorphology, and there is also no consensus on its origin and evolution. From a scientific perspective, understanding of the geology and geomorphology is critical for defining and delimitation of any landform. But the attempts made to define and delimit Western Ghats on this basis in the past have thus far met with little success.

A review of different approaches followed for defining and delimiting Western Ghats has been presented in this Chapter. The definition and delimitation of Western Ghats Region as adopted in the present Report by HLWG are also given.

4.2 Geology and Geomorphology

Gross landforms are defined in terms of geological and geomorphological features; physiographic features have also been used for defining landforms. The delimitation of Western Ghats is problematical because of diverse opinions on the origin of Western Ghats among geologists. The Memoir 47 (1 & 2) of the Geological Society of India (Bangalore) on "Sahyadri –The Great Escarpment of the Indian Subcontinent" edited by Y. Gunnell and B.P. Radhakrishna (1967) gives details on the geology and geomorphology and origin of Western Ghats. Radhakrishna defined WG as the long unbroken wall extending for a length of 1600 km paralleling the West Coast and marking an important physiographic feature of Indian Peninsula. He observed that its origin is one of the major unsolved problems of Indian Geology. Traditionally this magnificent range which fringes the west coast of India is also known as Sahyadri. The Western Ghats of Indian Peninsula extend in a NNW-SSE direction for a distance of over 1600 km lying between latitudes 08° and 21° 06 and longitudes 73° and 78° (Radhakrishna, 1967).

Radhakrishna (1967) described WG as follows: "Western Ghats starts as a bold westerly escarpment south of the Tapti estuary in Gujarat, reaching almost immediately to a height of over 3000 feet (914.4 m) and then extends in the form of a wall down to Kanyakumari (Cape of Comorin) with only one break or gap at Palghat (Palghat gap); throughout this length the Ghats retain an average elevation of 900 m above sea level with peaks as high as 1800-2400 m, and traverse many geological formations of differing physical and structural characteristics. According to him the WG are not true mountains ranges but represent only the precipitous western edge of a plateau uplifted to its present position and represent as an edge of an upraised disrupted continental block, with early Miocene as its probable date of formation. The Ghats form the dividing line between two erosional surfaces - the low-lying plains of marine denudation and a peneplaned plateau at elevations of over 900 m".

Wadia (1975) considered that the greater part of the Peninsula is constituted by Deccan plateau, which is a central table land extending from 12° to 21° north latitude raising above 600 m mean elevation above sea, and to its west are Sahyadri or Western Ghats which extend unbroken to the extreme south of Malabar, where the WG merge into uplands of the Nilgiris, and from Nilgiris the WG extend (after a solitary Palghat Gap) through Anaimalai hills to extreme south of the Peninsula, with mean elevation of 900 m.

Dixit (1981) explained the geomorphic aspects of Western Ghats and suggested that the origin of Western Ghats is in-separably linked with the origin of west facing scarp (escarpment), which is not fully explained and remains hypothetical; consequently, the origin of Sahyadri also remains unsettled question. Three hypotheses are proposed to explain the origin of escarpment by different geologists - (i) the Fault escarpment hypothesis, (ii) the Erosional escarpment hypothesis, (iii) the hypothesis of a dead cliff. Dixit also pointed out that most of the passes

recognized as Ghats are located at an altitude of 600 m. He also discussed relief of Western Ghats in terms of three parallel but contrasting components:

- (i) the relief of the plateau – east of the continental divide,
- (ii) the relief of the crest zone of Western Ghats proper, and
- (iii) the relief of the Western face and the projecting escarpment.

The last two aspects are explained by him with respect to Sahyadri divide line / Western Ghats divide line.

Valdiya (2010) in his paper entitled “Geological framework and tectonics of Western Ghats” defined Western Ghats as the zone of escarpment representing seaward western flank of the mountainous Sahyadri range extending 1600 km south from the Tapti valley to Kanyakumari with broken multiple precipitous scraps alternating with irregular terraces. The Western Ghats consisting of Sahyadri range, the Western Ghats escarpment and the coastal belts constitute one geological domain or province. In other words, there are units within the Western Ghats – (i) the high linear mountain ranges of Sahyadri stretching 1600 km from the Tapti river in the north to Kanyakumari in the south and form the western border of the Peninsular India, (ii) the escarpment in the form of ‘landing stair’ of sorts of the seaward western bank flank of Sahyadri called as Western Ghats because of resemblance of shape and pattern of 600-700 m high scraps alternating with irregular terraces to the bathing ghats on the banks of river and shores of ponds or lakes and (iii) the undulating terrain with smaller hillocks and spurs known as Konkan- Kanara- Malabar coastal belt. This concept of WG has not been accepted by geologists.

The published map of Geological Survey of India shows that the geology of northern and southern segments are different. They are affected by Western Ghats tectonic process after the origin of these formations. The northern segment is covered by Deccan traps (basalts) and southern segments by Charnockites, Khondalites, and Granulites etc. However these two diverse set of rocks were affected by the Western Ghats faulting events and hence has more or less same regional structural imprints.

It is evident from the above that WG can not be demarcated using geological and geomorphological features because of the complexity of geological and geomorphological features, and whatever maps available on WG are conceptual. But it can be defined as a physiographic unit, as physiographic aspects of WG are not influenced by underlying geology or rock structure.

4.3 Delineation of Western Ghats for Western Ghats Development Programme of the Planning Commission

The Planning Commission initiated Hill Area Development Programme (HADP) with prime objective of promoting socio-economic development of the Hill people in harmony with the preservation of ecological balance. Activities on eco-restoration, eco-preservation and eco-development have been emphasized in the programme and the focus is on fulfillment of basic needs of hill people i.e. food, fuel, fodder, health, education and drinking water. The list of Hill areas were identified for the first time by the Committee of National Development Council (NDC) on Hill areas in its meeting held on 12 March 1965. The States or Union Territories identified Hill Areas in their jurisdiction. In this exercise, Tamil Nadu identified Nilgiris as a Hill area under the programme.

The Planning Commission constituted a Working Group on Hill Area Development during 7th Plan. In its first meeting it was decided to use scientific criteria for delineating hill areas in the country. A subgroup of the Working Group was constituted for removal of the anomalies and to suggest inter alia delineation of hill areas on uniform and scientific basis. A Technical Committee of the subgroup was constituted to work out the scientific criteria for delineation of Hill areas. Based on the scientific criteria suggested by the Technical Committee, the working group adopted the following criteria for delineation of new Hill areas in the country for inclusion in the National Programme of Hill Development in the country other than Himalaya and Western Ghats (1986).

“A geographical area must satisfy two conditions to qualify as hill area namely it should contain an area (a) with an average slope of 30° or more which may be designated as the core and (b) the relative relief of 300 m or more”. These criteria were not applicable for Himalayas and Western Ghats Development Programme (Planning Commission, 1986).

For the first time Western Ghats Development Programme (WGDP) was conceived at a meeting taken by the then Minister of Planning, Shri C. S. Subramaniam on 31.05.1972 with Chief Ministers of Maharashtra, Karnataka and Planning Minister of Goa, Tamil Nadu and Kerala were associated in subsequent meetings. In the delineation of Western Ghats, ‘Contiguous talukas/blocks along the Ghats having at least 20% of their area at an altitude of 600 m or above were included in WGDP and covered under HADP since 1974-75.’ The unit of demarcation of Hill Areas in Western Ghats is taluka.

The High Level Committee constituted (vide, Report of the Expert Group on Delineation of New Hill Areas, 1986) for the development of the Western Ghats identified various districts/talukas falling in Maharashtra, Karnataka, Kerala, Tamil Nadu and Gujarat and subsequently included Goa, as per the Map of Second Irrigation Commission Report Atlas showing Western Ghats in the scale of 1:60,00,000, which was a replicate of the Map of Physiographic Regions of India prepared by National Atlas Organization of Ministry of Education, Government of India (1964). According to this map Western Ghats is one of the 5 subdivisions of the Peninsular Plateau which constitutes the fourth and largest Physiographic divisions of India which has been divided into Seven such broad Physiographic divisions. The map gives broad outlines of Western Ghats based on the earlier works by Baker, Dudley Stamp and others. To identify the districts and talukas in Western Ghats based on the map, it was ‘necessary to define the boundaries so that no area that should be included is omitted and area not really falling in the Western Ghats is not included’. Western Ghats was defined in geological terms as the uplifted Western border of the Deccan Peninsula formed of different geological formations of

varied origin and structure running about 1600 km along the Western border of Peninsular plateaus from the mouth of the river Tapti to Cape Comorin (Kanyakumari). It was divided into 3 physiographic subunits – the northern part which is built of horizontal sheets of lava which on erosion have given rise to a typical trap landscape; Ghats, which runs from a little south of 16° N parallel latitude to the Nilgiris, are formed of granitoid gneisses which on weathering have given rise to a more rugged topography; and the southern part of the Ghats (Southern Ghats) is separated from the main Ghats by the Palghat Gap which appears to be a rift valley. Three ranges of Southern Ghats radiate in three different directions from Anai Mudi Peak (2695 m) – the Anaimalai range to the north, the Palni to the north east and the Elamalai (Cardamom hills) to the south.

After a detailed study of the map of Western Ghats area (1:1,00,000) the Committee found that the Ghats proper (dissected belt) was only 'a few km wide as a rule and have height of 760-915 m'. Taking this area as the Western Ghats, the Committee imposed it on the administrative maps of talukas and districts of the same scale and thus led to the inclusion of all areas with an elevation of 600 m or above also which were contiguous to the higher altitudes and formed part of the administrative boundaries of the talukas. This led to the omission of talukas which were wholly coastal or only marginally hilly (having less than 20% of the taluka area) and inclusion of talukas which had high altitudes as defined above and actually constitute Western Ghats (Source: Report of the Expert Group on Delineation of New Hill Areas, Planning Commission, 1986).

4.4 Definition and Delineation of Western Ghats as Proposed by WGEEP

WGEEP defined Western Ghats from an environmental view point in the following way:

“The term Western Ghats refers to the practically unbroken hill chain (with the exception of the Palakkad Gap) or escarpment running roughly in a north-south direction, for about 1500 km parallel to the Arabian sea coast from the river Tapti

(about 21° 16' N) down to just short of Kanyakumari (about 8° 19' N) at the tip of the Indian Peninsula". WGEEP adopted the term Western Ghats in broad sense and included the entire tract of hills from the Tapti to Kanyakumari. It also discussed the problems of boundary demarcation in relation to Eastern Ghats, which meet Western Ghats (Nilgiri), and the presence of eastern and Western spurs. It also mentioned that there is no consensus among different workers on the precise boundaries of Western Ghats due to differences in the drivers used for defining boundaries. WGEEP used the altitude and forest area or vegetation as drivers defining the boundaries and used forest area above a certain altitude as the operational definition of Ghats. On the eastern side, the cut off elevation was above 500 m as the WG rise discretely from the Deccan plateau and on the west this cut off of forested area was at 150 m and above or the coastline itself in case the forests spring from the edge of the coastline. The land-use map developed by Forest Survey of India was used to demarcate forest areas and GTOPO30 (Global 30 Arc - Second Elevation Data set) for altitude details at 1x1 km resolution was used. NDVI (Normalized Differential Vegetation Index) values were also used as a surrogate for vegetation or forest cover.

About 150 km stretch of Biligirirangan range of Eastern Ghats of Karnataka and Tamil Nadu running in a north-south direction was also included as a part of WG. As per these boundaries, the WG as delimited by WGEEP spreads over an area of 129037 sq. km between 8° 19' 8" - 21° 16' 14" N and 72° 56' 24"- 78° 19' 40" (E) and extends to 1440 km from Tapti in the north to Kanayakumari in the south, with the width ranging from 48-210 km (excluding Palghat).

Western Ghats as defined by WGEEP do not correspond exactly to particular administrative units such as districts and talukas. WGEEP also mentioned about the Western Ghats Development Programme of Planning Commission and the delineation of Western Ghats at taluka level under that programme. WGEEP considered that talukas do constitute a reasonable administrative unit for defining

the Western Ghats. Infact, taluka was used as unit for zonation of ecologically sensitive areas.

WGEEP, however, writes that, “We must however admit that the Western Ghats Ecology Authority, which put in place, will have to take another look for boundaries, we suggest, since we have not been able to find time to examine and refine these with enough care”.

4.5 HLWG’s definition and delineation of Western Ghats region

HLWG examined the definition and delimitation of WG proposed by geologists, geomorphologists, geographers, ecologists and conservationists. Most of these definitions are conceptual in nature and precise boundaries are not demarcated (Table 1). It is difficult to define and demarcate WG in terms of geology and geomorphology because of its complex geology and geomorphology and unsolved problem of its origin. As has been explained above under section 4.2 of this chapter: (i) the mean elevation of Deccan Plateau is 600 m above sea level; (ii) the WG has mean elevation greater than 600 m (about 900 m) through its length from Tapti estuary on the northern most tip to Kanyakumari at the south end; and (iii) the elevation of most of the Ghats is 600 m and above.

An attempt was initially made by HLWG to define WG geologically and geomorphologically, keeping in view of the observations made by geologists. For this purpose one full day meeting of geologists (Dr K. Vinod Kumar) from NRSC, Geological Survey of India (Dr Balakrishnan) and University Departments of Geology and eminent Geomorphologists (Professor R. Vaidyanathan, who was also a member of Expert Committee constituted for identification of Hill Areas under Hill Area Development Programme of Planning Commission) was held at NRSC, Hyderabad. All the geologists and geomorphologists confirmed that it is not possible to define Western Ghats and demarcate its boundaries geologically and geomorphologically. Though it is possible to define WG in terms of north-south band (the ridge) but the

same would require substantial time to work it out. The other alternative is to look for physiographic features such as altitude, slope, topography rainfall and others.

Further, the High Level Working Group also requested the State Governments to share with the HLWG any exercise done by them to demarcate Western Ghats region in their respective jurisdiction. The HLWG noted that no information has been received except from the State Government of Karnataka. The Karnataka Forest Department had used (i) forest and land use pattern, (ii) rainfall and (iii) geomorphology as variables to define the Western Ghats in Karnataka. The Group felt that the Karnataka methodology is very specific to the State and the criteria adopted may not apply to the other States.

HLWG, in the absence of geologically and geomorphologically sound criteria in demarcating WG, decided to adopt the criteria followed by the Western Ghats Development Programme of Planning Commission which defined WG in terms of geology conceptually, but has taken altitude as the criterion for identification of talukas/blocks under Western Ghats Development Programme of Planning Commission as recommended by High Level Committee, because the Ghats are usually 760-915 m high. All those talukas/blocks at 600 m and above elevation and those talukas having more than 20% of the area at 600 m and above elevation that are contiguous to higher altitudes and formed part of the administrative boundaries of Western Ghats Development Programme are listed under Western Ghats Development Programme. This criterion has geological connotation - that at 600 m on the east the WG springs from Deccan Plateau, on an average the mean elevation of WG all along its length from north to south is greater than 600 m, and most of the Ghats have height of over 600 m.

The data on elevation and rainfall in different districts of Western Ghats (Table 1) also support the criterion used by Western Ghats Development Programme of Planning Commission.

Table 1*: Elevation and rainfall at various sections of Western Ghats region

Districts (West to East)	Sections	Elevation West (m)	Elevation East (m)	Rainfall West (cm)	Rainfall East (cm)
<i>Dangs & Nashik</i>	1	150	955	200	80
<i>Thane & Nashik</i>	2	170	695	240	200
<i>Thane & Ahmadnagar</i>	3	60	1030	240	80
<i>Sindhudurg & Kolhapur</i>	4	130	790	320	240
<i>Kozhikode, Wayanad, Nilgiri, Erode & Salem</i>	5	65	970	320	80
<i>Trishshur, Coimbatore & Dindigul</i>	6	50	840	320	140
<i>South Goa, Uttar Kannad & Dharwad</i>	7	40	540	280	120
<i>Dakshin Kannad & Hassan</i>	8	70	940	320	200
<i>Ratnagiri & Satara</i>	9	80	720	240	160
<i>Sindhudurg & Kolhapur</i>	11	60	640	240	280
<i>Pattanamtitta & Tirunelveli</i>	12	150	150	320	80
<i>Kanniyakumari & Tirunelveli</i>	13	95	110	140	120

*Source: DBT-ISRO Project (Roy.et al 2012)

Table 2 provides a comparative evaluation of different approaches followed in defining and delimiting Western Ghats.

Table 2: Different approaches followed in delimitation of Western Ghats

Delimitation Criteria	Delimitation of Western Ghats boundaries
Physical geographical definition	Western Ghats is the most important orographic feature of the peninsula, fringing the Western coast from the Tapti estuary to cape comorin (Source: E. H. Pascos in A Manual of Geology and Burma ed. 3 1950 and also in Memoir of Geological Society 47:67-69, 2001). No boundaries were demarcated.
Geology and Geomorphology	Valdiya (2010) demarcated a conceptual boundary of Western Ghats based on homogeneity of geological structural elements especially the northern, southern and extreme eastern boundaries. As the geology of northern and southern segments are quite different and were effected by tectonic process after the origin of these formations. The northern segment is covered by Deccan traps (basalts) and southern segments by Charnoclites, Khondalites, Granulites, etc. These diverse set of rocks were affected by the Western Ghats faulting events and hence more or less the same regional structural imprints. It is not possible to draw a boundary based on these structural imprints without ground truthing. Further, the definition of Western Ghats by Valdiya also includes coastal plain which was formed by the recent geological processes and hence cannot be a part of Western Ghats block faulting process. Consequently, the Valdiya's definition has not been accepted. According to Radhakrishna (2001) Western Ghats traverse many geological provinces and structural elements and defined that it extends from 8 to 21.06 degree and 75 to 78 degree (Source: Dr K. Vinod Kumar, NRSC). No boundaries were demarcated.
Topography, Temperature and Rainfall	Western Ghats are influenced by topographic variations and tropical south-west monsoon system; the Western Ghats show diverse bioclimatic conditions at macro and micro levels. Exacerbated by orographic effect, windward side of the Ghats receives full intensity of summer monsoon, with rainfall sometimes exceeding 7000 mm. However, the climatic conditions along the Ghats are not uniform. Since the monsoon arrives from the south and retreats in the reverse direction, the rainy season is longer in the south than in the north. The second aspect is that the monsoon rains diminish rapidly once they cross the Ghats summit (includes rain shadow zone). The third climatic gradient is the fall

	<p>of temperature with altitude. High rainfall, dense network of drainage and substantial forest cover made the Western Ghats as a 'water sink' of the Southern Peninsula.</p> <p>No boundaries were demarcated.</p>
Forest/Vegetation	<p>The Western Ghats harbors one of the best 'non-equatorial' forests. These types are closely correlated with the temperature and rainfall regimes. Wet evergreen, dry evergreen, moist deciduous and dry deciduous climax types are clearly distinguished along the mean annual rainfall gradient; whereas low, medium and high elevation wet evergreen types are found in areas characterized by decrease in minimum temperature with the increase in altitude. Since the rainfall, temperature and altitude varies from north to south, uniform criteria of vegetation cannot be used for delineation of Western Ghats.</p> <p>No boundaries were demarcated.</p>
<p>Forest Vegetation Cover</p> <p>Geomorphology</p> <p>Isohyets greater than 800 m</p>	<p>Western Ghats region of Karnataka has been defined as an administrative unit based on the three criteria: (i) all villages having more than 25% of the area under forest cover, (ii) areas with isohyets greater than 800 m on the eastern edge, with village as the unit and (iii) the three regions of hilly tracts - the escarpment (Ghats), Malanad, (including semimalanad) and hilly hinterland. These criteria were used only for identification of fringe villages which form the boundary of Western Ghats and all those areas within the boundary of Western Ghats, irrespective of whether they fulfil above criteria or not are included in Western Ghats region (Source: Report submitted by B. R. Ramesh and G. Muthasankar (French Institute of Pondicherry) to Karnataka Western Ghats Task Force in 2011 and information provided by the Forest Department of Karnataka). It may be noted that the first layer used was the talukas recognized under Western Ghats Development Programme. The criteria are not applicable to the entire Western Ghats that traverse Six States, as the criteria vary significantly across the Western Ghats.</p>
Vegetation cover and altitude	<p>WGEEP defined WG from environmental point of view. It uses forest cover (FSI, 2009) and altitude as criteria for delineating the Western Ghats region. NDVI has also been used as surrogate for vegetation or forest cover. On the eastern side the cut off elevation was above 500 m as the WG rise discretely from the Deccan plateau and in the west this cut off of forest area was at 150 m and above or the coastline itself in case the forests spring from the edge of the coastline. The conventional northern and southern limits (Northern limit is south of Tapti river extending up to Kanyakumari in South) have been used. According to K. R.</p>

	<p>Subrahmanya (personal communication), consideration of 500 m as the eastern edge by WGEEP would cover 90% of the Deccan Plateau which is not appropriate in delimitation of boundaries.</p> <p>The natural forest cover of evergreen forest on the western slope also changes from moist to dry deciduous types on the eastern slopes, and as such it is difficult to make a clear geographical boundary. WGEEP also included Biligirirangan (Eastern Ghats) as a part of Western Ghats because of topographic and forest contiguity and this also makes it difficult to make a clear geographic boundary.</p> <p>No unit was used to delimit boundaries. However, for assigning three layers of ecological sensitivity, taluka was used as a unit.</p>
<p>Altitude (under Western Ghats development Programme of Planning Commission), slope and relief (under Hill development Programme of Planning Commission) and traditional northernmost talukas of Gujarat located on the south of Tapti river</p>	<p>A review of criteria for delimitation of Western Ghats was undertaken by eminent experts in brain storming session at NRSC. It was decided that Western Ghats can not be defined in terms of geology and geomorphology. The experts suggested a multicriteria approach (vegetation, rainfall, slope, geology, landform and altitude) can be used to delineate Western Ghats. In the absence of such delineation, topographic aspects were followed for delimitation of talukas/blocks under Western Ghats Development Programme and Hill Area Development Programme of Planning Commission. The criteria adopted have also geological connotation - that beyond 600 m in the east the WG springs from Deccan Plateau, on an average the mean elevation of WG all along its length from north to south is greater than 600 m. In addition most of the Ghats have height of > 600 m. A total of 188 talukas constituted Western Ghats region and the boundaries are demarcated using outer boundaries of peripheral talukas.</p>

A GIS map of delineated WG was generated by using the outer limits of peripheral talukas as boundary of Western Ghats on all sides (Figure 5). The method used for delineation of map is given below.

4.6 Generation of Spatial Layers on Western Ghats

The administrative spatial layer indicating boundary of India (International and coastal), States, districts, talukas and villages have been taken from Survey of India spatial layer. Talukas identified by Planning Commission for Western Ghats Development Programme and Hill Area Development Programme and seven talukas of Gujarat (annotated separately from the existing database on the basis of their

location to south of Tapti river from where Western Ghats starts at the north) were mapped using standard GIS software (Figure 6). This spatial layer has been used for further analysis and modeling Ecologically Sensitive Areas as per the details given in Chapter 5.

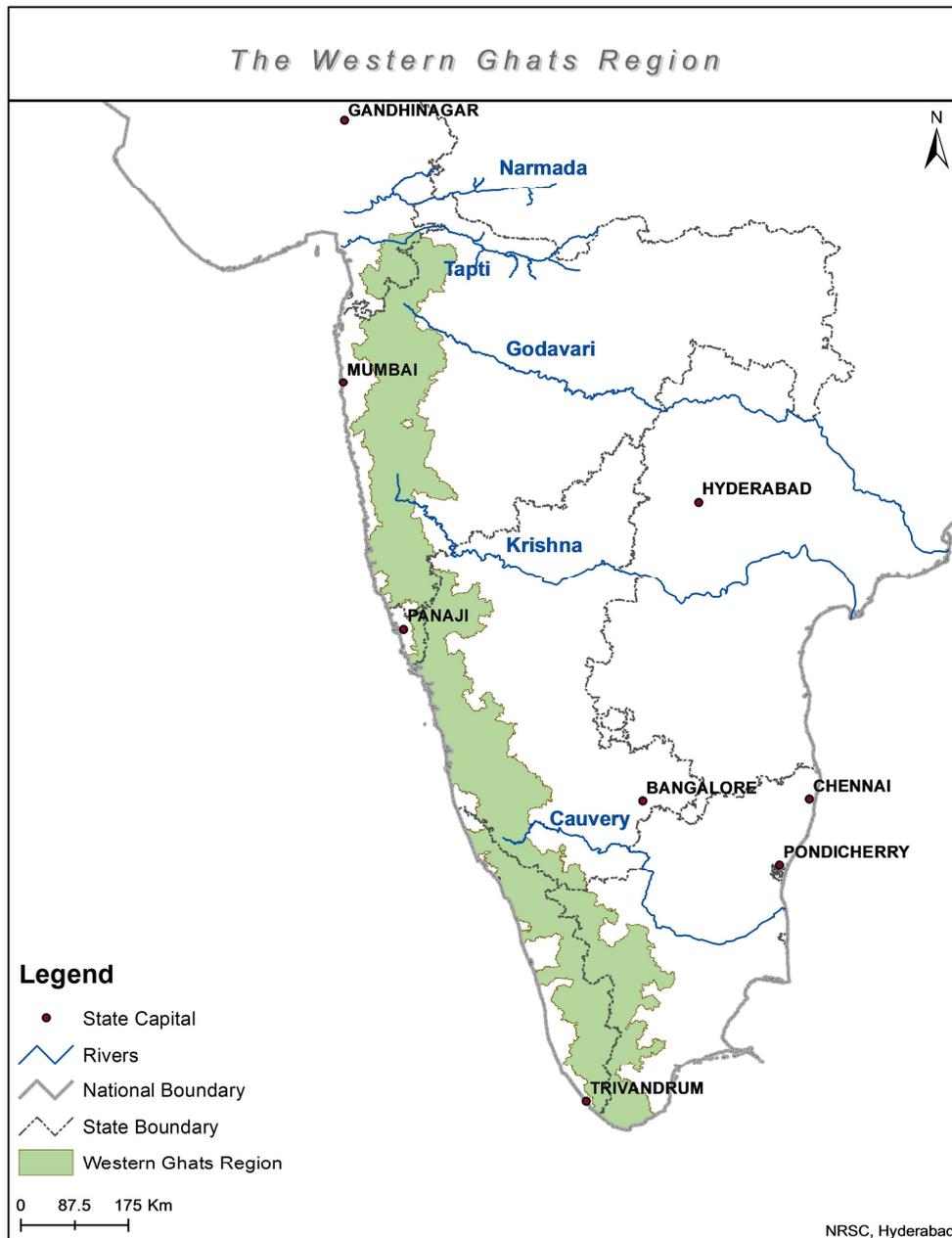


Figure 5: Map of Peninsular India showing Western Ghats region and origin of major rivers, with Tapti river as the northern boundary of Western Ghats.

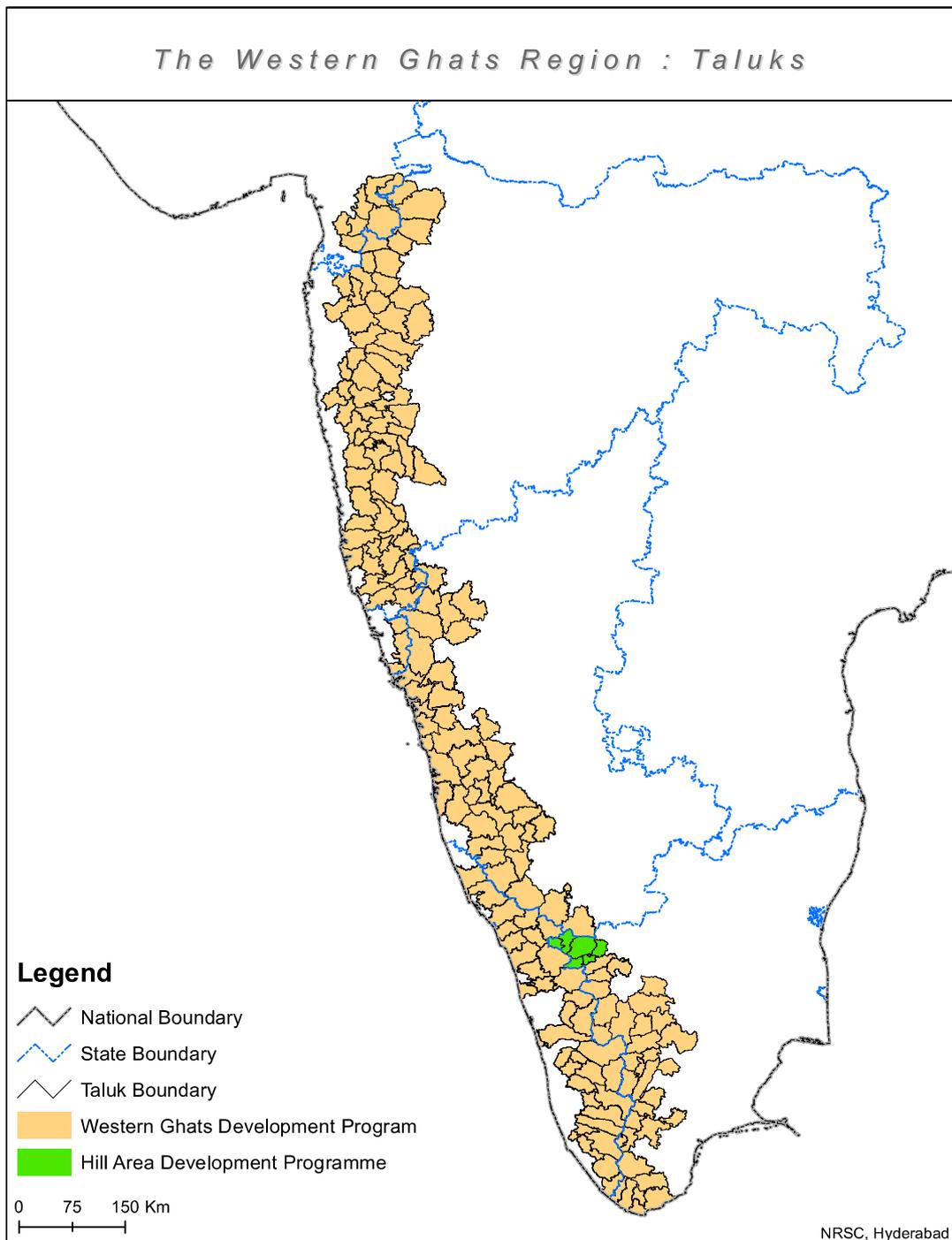


Figure 6: Map of Peninsular India showing 188 talukas of Western Ghats region that includes Seven talukas of Gujarat located to south of Tapti river – the northernmost limit of Western Ghats region.

To sum up, the WG region defined by HLWG has the following features:

Northern Limit : 8° 0' N 22° 26'.

Eastern Limit : 72° 55" E 78° 11'

Area : 1, 64,280 km²

Length : 1500 km

Width: 10 km (at narrowest point) – 200 km (at widest point)

Altitudinal range (minimum and maximum) (*Ellipsoid height) : 0 to 2674 m

* estimated by NRSC using public domain
ASTER DEM.

The list of 188 talukas that constitute Western Ghats region are given in the Table 6 of Chapter 5.

The merits of WG delineation by HLWG are (i) that taluka is taken as unit to demarcate WG, (ii) that the talukas identified as geological (scientific) connotations, and (iii) that talukas listed are based on criteria used by WGDP and HADP of Planning Commission and Seven talukas of Gujarat located on the south of Tapi river which forms the northern most boundary of Western Ghats.

CHAPTER 5

Identification of Ecologically Sensitive Areas in Western Ghats Region

5.1 Background

As a part of environmental protection, the Ministry of Environment & Forests (MoEF), Government of India has been developing strategies for conservation of ecologically sensitive or fragile areas. In 1990, the MoEF brought out a report on parameters for determining Ecological Fragility. The Task Force set up by Planning Commission also brought out a Report on 'Conserving Ecologically Fragile Ecosystems' in 1996. In 1999 the MoEF constituted a committee under the Chairmanship of Dr Pronab Sen (the then Advisor in Planning Commission) to work out parameters for designating an area as ecologically sensitive which require special protection under Environment (Protection) Act 1986 (EPA) in a way that the processes of designation of such areas is objective, scientific and transparent.

The Pronab Sen Committee submitted its Report in 2000 and defined Ecological Sensitivity 'as the imminent possibility of : (a) permanent and irreparable loss of extant life forms (species); or (b) significant damage to ecological processes affecting natural evolution and speciation'. The Committee also clarified that it is not the intention to curtail activities while defining the ecological sensitivity and pointed out that India has a special responsibility to conserve and use resources in a sustainable manner. The Committee listed three primary criteria of Ecological Sensitivity and these criteria were grouped into 3 categories - (i) species based criteria (endemism, rarity, endangered species and centres of evolution), (ii) ecosystem based criteria (specialized ecosystems, special breeding sites/areas, frontier forests, areas with intrinsically low resilience, sacred groves and wildlife corridors), and (iii) geomorphological features based criteria (uninhabited islands in the sea, steep slopes and origins of rivers) besides Seven auxiliary criteria such as centres of less known food plants, wetlands and grasslands, upper catchment areas, not so steep slopes, high rainfall areas and other uninhabited islands. To ensure

additional protection to the protected areas such as National Parks, Sanctuaries and Tiger Reserves, Protected and Reserve Forests, Biosphere reserves, Coastal Regulation Zone I (i) and Hill Stations which are already known as ecologically Important or under ecological stress, the Sen Committee recommended to prioritize such areas and accord them wholly or partly the status of Ecologically Sensitive areas after applying the criteria listed by it.

The Committee also remarked that 'the nuances of ecological sensitivity are such that excessive rigidity on this count could defeat the very purpose of this exercise, which seeks to strike a balance between preservation of our ecological endowments and the needs of development'. The Committee recommended that the protection under EP Act should not be restricted to only areas satisfying one or more of these criteria, and other environmental concerns should be appropriately addressed and hence a separate exercise should be undertaken to frame parameters to delineating environmental sensitivity.

The Committee also mentioned that the system presently being followed for notifying environmentally sensitive areas under EPA is appropriate and adequate, subject to only minor modifications.

WGEEP adopted Pronab Sen Committee's concept of Ecologically Sensitive Area and designated the entire Western Ghats as an Ecologically Sensitive Area (ESA) and assigned three levels of sensitivity to different regions within the ESA. The WGEEP discussed the Twelve primary criteria and Six auxiliary criteria proposed by Pronab Sen Committee in very general way and with one or two examples from entire Western Ghats and with a remark "**incomplete information**" under each parameter and recommended the entire WG as ESA (Part II of WGEEP Report). In the absence of any guidelines by Pronab Sen Committee on management regime for ESA and since it is not feasible to evolve a uniform regime for entire Western Ghats, the WGEEP adopted 3-layered approach and attempted to assign relative levels of ecological sensitivity to areas based on 8 parameters using 9x9 km or 5'x5' grids.

WGEEP recognized Three Ecologically Sensitive Zones (ESZ) – ESZ1, ESZ2 and ESZ3 based on a scoring system assigned to the states/variants of each of the 8 parameters on a scale of 0-10, and average score for each grid was calculated. Similarly the average scores of grids of PAs were calculated and ranked them in descending order in each State. If the average score of the grid was equal or higher than the lowest rank grid of PAs then it was treated as ESZ 1, and about 25% of grids having average scores of grids equal to lowest rank grids of PA were treated as ESZ2 and the remaining ones were treated as ESZ3. This was done based on the stipulation that protected areas (PA)+ESZ1 in each State should not exceed 60% of the total area and PA+ ESZ1 +ESZ2 should make it 75% of the total as forest cover. Using the following ESZ assignment algorithm the grids were assigned to different ESZs:

$$p+x+y+z=100, \text{ where}$$

p=percentage of area falling in existing protected area

x=percentage of area assigned to ESZ1

y=percentage of area assigned to ESZ2

z=percentage of area assigned to ESZ3

Three scenarios were generated in terms of p based on the existing percent forest cover. For example in scenario 1 where $p > 75\%$, all the grids outside PA were assigned to ESZ3 and no grid was assigned to either ESZ1 or ESZ2; similarly in scenario 2 when $60 < p < 75\%$, lowest scoring 25%, grids were assigned to ESZ3 and the rest were assigned to ESZ2 and no grid was assigned to ESZ1; and in scenario 3, the 25%, lowest scoring grids were assigned to ESZ3 and the rest were assigned to ESZ1 and ESZ 2.

If the desired results are not met under any of the scenarios, WGEEP also made provisions to rank the parameters selected in order of their importance after ignoring the least important parameters and then rework the scores so that the desired results are achieved. WGEEP slightly modified the zonation criteria for Goa and used 1'x1' grids rather than 5'x5' grids. The ESZ were extrapolated and reported for taluka which was taken as a unit in mapping. The parameters selected by WGEEP

for zonation were (i) number of endemic species, (ii) number of IUCN red listed mammal species (iii) percent of area covered by unique evergreen ecosystem, (iv) percentage of forest area, (v) elevation (vi) slope and (viii) riparian forest vegetation. WGEEP generated geospatial maps for taluka wise ESZ for each State of Western Ghats. Regulatory regimes for different ESZs were also formulated.

WGEEP did not completely use the methodology outlined in their *Current Science* Paper.

To ensure conservation of ecological systems and sustainable development in Western Ghats region as per the mandate given by MoEF to HLWG and in light of responses received from the stakeholders, State Governments and Central Ministries on WGEEP Report (see also Chapter 2), the HLWG examined critically the basis for identifying entire WG as Eco-sensitive area, the criteria selected in identifying different eco-sensitive zones (ESZs) within the ESA of WG and mode of assigning ESZs to talukas in each of the districts of each State included in WG as defined by WGEEP. The HLWG, while appreciating the efforts made by WGEEP in designating WG as ESA and assigning the talukas to different ESZs, found the following limitations: (i) using criteria with incomplete back up information for designating entire WG as ESA and (ii) identifying ESZs without taking into account the human cultural component which is a part of biodiversity, livelihood and developmental needs of human populations, and disturbance regime, and (iii) coarse grid size used for zonation. There is also some redundancy in criteria selected, subjectivity in zonation and inclusion of entire talukas having only a small area of ESZ1/ESZ2 as a part of ESZ1/ESZ2. Realizing these limitations, the WGEEP itself suggested that ESZs designated require refinement and further examination.

Keeping this in view and the need for sustainable development approach for the conservation of Western Ghats ecology, the HLWG in their deliberations decided: (i) to utilize geospatial methods and the best available spatial datasets that would be applicable at fine spatial resolution for demarcating ESA and (ii) involving NRSC for

geospatial analysis. The HLWG also constituted a subgroup consisting of Professor C. R. Babu, Professor P. S. Roy and Dr Indrani Chandrasekharan to interact with NRSC for evolving scientific, objective and a practical method for geospatial analyses leading to identification of ecologically sensitive areas in WG region.

The ecological glory of Western Ghats, the methodologies adopted for geospatial analyses, and the results and outputs generated from geospatial analyses are given in this Chapter.

5.2 General Aspects of Western Ghats Region

5.2.1 Geographical Features

The magnificent range fringing the west coast of India in the form of a gigantic wall is the Western Ghats. It is great escarpment of Indian subcontinent and stretches nearly 1600 km in length from Tapti river in north to Kanyakumari in the south and abruptly rises to a height of 2000 m above sea level. Western Ghats traverse through Gujarat, Goa, Maharashtra, Karnataka, Kerala and Tamil Nadu run parallel to the west coast at a distance of 40 km, on an average, from the shore line.

The mean elevation of the Western Ghats is higher than 600 m and exceeds 2000 m at some places. The Nilgiri plateau has several peaks above 2000m and the most prominent one is Dodda Betta (2637m). The Anaimudi peak in the high ranges of Kerala rises to the height of 2695m and is the highest peak south of the Himalayas. There is a major discontinuity in this otherwise continuous hill tract stretching from the north to south and is known as the Palghat gap which is about 30 km long and 100m high above mean sea level. The Western Ghats correspond to two major categories of rock formation, one is the highly varied Pre-Cambrian shield, and the other, to the north of Goa, is the basaltic lava flows of the Deccan Trap. The Western Ghats are essentially the Western edge of the Indian peninsular plateau, which is the stable mark of Archaean and Pre-Cambrian formations, where the mountain building was ceased in the Pre-Cambrian times (Radhakrishna, 2001). Nine

geological landscapes are recognized in Western Ghats. The region is rich in minerals and has high potential for hydroelectric power generation, besides containing rich bio-resources.

The Western Ghats form the major watershed in Peninsular India and as many as Fifty Eight major Peninsular Indian rivers originate from it. Forty seven of these rivers flow towards the west, Eight rivers flow east ward and Three rivers flow south wards. The Godavari, the Krishna, the Cauvery, the Kali, the Bedthi, the Tadri and the Sharavati are major rivers in the region (Tewari, 1995). Ghats are an important source of water for the entire Peninsular India. The area receives between 2,000 and 8,000 millimeters of rainfall annually within a short monsoon period and performs important hydrological and watershed functions. Approximately 245 million people live in the peninsular Indian states that receive most of their water supply from rivers originating in the Western Ghats. The great range of Western Ghats – the most striking feature in the geography of India – influence the climate of India, particularly the rainfall pattern.

Fast running rivers and steep slopes have provided sites for many large hydro-power plants. There are about Fifty major dams along the length of the Western Ghats and the earliest hydro-power plant setup was in 1900 at Khopoli in Maharashtra. Most notable hydro-power plants are the Koyna Hydro-power plant in Maharashtra, the Parambikulam Dam in Kerala, and the Linganamakki Dam in Karnataka. There are hill torrents that discharge their monsoon flows into Arabian sea within 48 hours after precipitation.

The hot and humid tropical climate coupled with heavy precipitation from southwest monsoon and favorable edaphic factors create ideal conditions for the luxuriant growth of plant life, which can be seen only in few parts of the world. Forestry is the second largest user of land. The high western slopes of the Ghats harbor evergreen forest, and as one moves from western to eastern slopes the vegetation changes to moist and dry deciduous forest types along the rainfall

gradient. The vegetation attains its luxuriant development towards the southern tip in Kerala, where rich tropical rain forests flourish. The commercially most important species, teak, grows best in tracts of moderate rainfall where the natural vegetation consists of moist deciduous forest. The commercial plantations of coffee, cardamom, tea, *Acacia* and *Eucalyptus*, cashew, rubber, bananas, arecanut, coconut, etc. occupy large area and also make the forest landscape highly mosaic.

The exact total area under Western Ghats varies due to lack of well-defined boundaries of Western Ghats. For example, according to WGEEP the total area under WG is 1,29,037 km², but others put the area under WG anywhere between 1,36,800 km² to 260,962 km². About Fifty million people inhabit Western Ghats. As per HLWG's definition, Western Ghats spreads over an area of 1,64,280 km² and traverse across Six States of Peninsular India.

5.2.2 Biogeography

The Western Ghats region stretches from 8° N to 22° N along a 1500 km north west gradient. The region has a considerable temperature and rainfall gradients, and this permitted the evolution of several distinct species associations. Longitudinally, the Ghats spring from sea level in the west, rise abruptly to a highly dissected plateau upto 2700 m and then descend often equally abruptly to the dry Deccan plateau. The elongated mountain chain has been cut by wide valleys at few places, and thus preventing dispersal of less motile species and favouring local speciation. This zone harbours one of the major formation of tropical evergreen forest of India and it is also a zone of ecological stress due to anthropogenic pressures. The Western Ghats are divided into Twelve regions (Rogers and Panwar, 1988). These are:

- (i) Dangs-Below Ghat areas, (ii) Upper Krishna Drainage, (iii) Kanara, (iv) Coorg, (v) Mysore-Lower Nilgiris, (vi) Wyanad Plateau, (vii) Nilgiri, (viii) Anamalai, (ix) Palni, (x) Periyar-Cardamom, (xi) Varushanad-Andipatty and (xii) Agasthyamalai

5.2.3 Biodiversity

The Western Ghats has unique taxonomic hierarchies, remnant ecosystems and strong endemic associations. The sholas, mangroves, kans, dry evergreen forests, swamps, reeds and riverine belts represent the unique ecosystems. The forests of WG are some of the best representatives of non-equatorial evergreen forests in the world. The resource value of this mega diversity centre spans from timber-non timber category through wilderness-ecotourism to gene pools of plants of medicinal-aromatic-food-industrial value.

This kind of luxuriant biotic communities evolved over geologic time scale and witnessed various land use practices depending upon the resource demand and ingress of human dimension. This has induced considerable alteration in the Western Ghats biogeography bringing in commercial agriculture, commercial forestry, hydropower, mining and biotic pressures within the forest ecosystems. Consequently there is a need for sustainable development approach that enable ecological protection and development takes place in tandem.

Floristically the Western Ghats is one of the richest areas in the country and harbours as many as 4000-4600 species of flowering plants of which 56 genera and 2100 species are endemic. Gramineae (Poaceae) has the highest number of endemic genera and the genus *Nilgiranthus* has the maximum number (20) of endemic species. In Western Ghats Bamboos are represented by 8 genera with over 24 species; out of 8 species of *Ochlandra* (Bambusae) found in India, 6 species occur in Western Ghats. Among herbaceous plants, the genus *Impatiens* has about 175 species in India, out of which 77 species are reported from the southern Western Ghats alone. The leguminous genus *Dalbergia* has about 100 species in the world, of which 22 species are from Western Ghats. Of the known orchids of Indian Peninsula, 37 percent are endemic to the Western Ghats region. Taxa with extremely restricted distribution are found in Western Ghats. A number of endangered or rare plant species have their type locations in Western Ghats. For example, the Chemmunji Peak area in the Agasthyamalai Range is the type locality for half a dozen endemic

species. Diversity as well as endemism is equally high among animals species of the Western Ghats. Blanford recorded 48 genera of mammals, 275 genera of birds (with 28 endemic forms) and 60 genera of reptiles from Western Ghats (Tewari, 1995).

The Biodiversity in Western Ghats is threatened due to habitat pressures. The existing forests are highly degraded and facing the prospect of increasing degradation. The area covered by Protected Areas is 16,930 km² which constituted 10% of the total Western Ghats. The Western Ghats is one of the two biogeographic zones in India with the highest level of coverage by Protected Areas and other one is Andaman and Nicobar Islands.

5.2.4 Vegetation Types and Land Cover

There are four major phenological forest types in the Western Ghats, moist deciduous forests occupy the largest area followed by semievergreen, evergreen and finally dry deciduous.

Evergreen forests: The highest levels of endemism are found in the evergreen forests. These forests occur in areas having annual rainfall of 2,500- to 5,000-millimeter. The habitat types of the southern Western Ghats tropical evergreen forests include the wet montane evergreen forests and shola-grassland complexes in the higher elevation (1,200-2,200 m). More than half the tree species found in these forests are endemic, especially among the families Dipterocarpaceae and Ebenaceae.

Semi-evergreen forests: Semi-evergreen forests occur primarily in the states of Maharashtra, Goa, and Karnataka of Western Ghats (IIRS 2002). This forest type includes secondary evergreen Dipterocarp forests, lateritic semievergreen forests, bamboo brakes, and riparian. These forests also tend to have high levels of tree diversity and endemism

Moist deciduous forests: The moist deciduous forest type occupies the largest area within the Western Ghats. It occurs in areas with mean annual rainfall of 2,500-3,500 mm.

Dry deciduous forests: The dry deciduous forests occur on the leeward side of the Western Ghats Mountain Range in areas with 900-2,000 millimeters mean annual rainfall. They extend across the southern Indian states of Karnataka and Tamil Nadu.

5.3 Methodologies (Geospatial Analyses)

Remote Sensing, GIS, spatial statistics, photogrammetry and models are the tools to execute the principles of the landscape ecology. Landscape ecology helps in understanding the priority in conservation and resolves conflicts, as it emphasizes that land use/cover types, amounts and arrangement of these on the landscape elements, ultimately determines the dynamics and landscape structure. The spatial datasets, their scales and resolution of satellite data are important for analysis and modeling. Remote Sensing satellite data provides resolution from <1 m to 1000 m. The landscapes are best depicted and mapped using medium resolution (20-50 m) satellite data. Indian Remote Sensing satellite; Resourcesat I and II provide three resolutions in AWifs (50 m), LISS III (24.5m) and LISS IV (5.4 m). The LISS III sensor is widely used for regional mapping of resources and landscape ecological analysis. ISRO has been undertaking such mapping under various projects and has access to required geospatial datasets. Accordingly, HLWG requested ISRO for geoprocessing.

The subgroup of HLWG interacted with scientists of Forestry and Ecology Group of National Remote Sensing Centre (NRSC) of ISRO for two days at Hyderabad to work out methodologies for identification of Ecologically Sensitive Areas (ESAs) in Western Ghats region defined by HLWG. The Director of NRSC also participated in the discussion.

The group discussed the different options available for scientific, objective and practical ways of delineating ecologically sensitive areas at the landscape level using different layers representing ecological characteristics. The group examined the datasets available for different layers at NRSC and other Institutes at the fine resolution level. Finally, after a thorough discussion, it was decided to utilize the datasets generated in the DBT-DOS project (Appendix 2; Roy et al 2012) and these datasets cover: (i) the landscape level characteristics of existing land use /land cover (habitats), (ii) fragmentation, (iii) disturbance, and (iv) ecological parameters (endemicity, ecosystem, species diversity and total bioresource value index) collected from ~20000 ground sample points and used these data sets to map biologically rich areas (Appendix 2).

Using these data sets, a pilot proof of concept project was undertaken for identification of ecosensitive area in three districts – Uttarkannada in Karnataka, Idduki in Kerala and Ratnagiri in Maharashtra. The methodology adopted and the GIS maps thus generated were explained to HLWG. The HLWG reviewed the results of the pilot project and recommended landscape level evaluation for demarcating eco-sensitive areas.

The key premise is that the landscape level indicators would be based on the vegetation, particularly the primary vegetation types.

The HLWG approach for the delineation of eco-sensitive area starts with the natural vegetation consisting of major vegetation types, the scientific reasons for it are several. Primarily, the only fine scale, spatially consistent information on plant species distribution for the Western Ghats is the vegetation type map. These vegetation types are generated using multi-spectral remote sensing data in conjunction with suitable ground inventory of plant species. Finally the spatially consistent species surrogate information, that vegetation types provide, can be used as the basis for estimating landscape level metrics such as biological richness and forest fragmentation.

The HLWG effort for the identification of ecologically sensitive areas based on landscape level indicators have utilized the layers generated from the national project on landscape level biodiversity characterization under the collaborative study of the Department of Space and Department of Biotechnology, based on multi-season IRS LISS-III data. It provides spatial information on the vegetation types consisting of natural and managed vegetation. The satellite image elements were correlated on ground with the sampling intensity varying from 0.002% to 0.005%, depending upon the vegetation heterogeneity. Details of the study methodology, sampling technique and biological richness modelling have been published (Roy et al 2012). Besides the remote sensing data, other collateral databases used include phytosociological data collected from 16,578 field sample plots (with 7596 plant species, wherein 648 species are endemic, 23 are endangered, rare or threatened (ERT), 1879 medicinally important and 2803 are economically important species). The datasets were collected during 1998-2010 under Department of Biotechnology and Indian Space Research Organization joint programme (Roy et al 2012).

The project combined the spatial information generated on vegetation types with the species level information and landscape level parameters to generate modelled layers on biological richness and disturbance regimes stands. The spatial database of these layers have served as the baseline data for habitat suitability assessment, prioritization for microscale habitat studies, corridor connectivity and landscape planning, identification of species-rich areas, conservation methods for protection of rare species. These databases have been used for identification of ecologically sensitive areas.

The geospatial analysis for the identification of ESZ uses two of the landscape level spatial layers - forest fragmentation and biological richness. The geospatial analysis for the generation of these layers is described in Appendix 2. The different datasets used in the analysis and their sources are given in Table 3. The analysis carried out is schematically represented in Figure 7.

Table 3: Datasets (layers) used in geospatial analysis and their sources

S.No.	Layer/Data	Source	Remarks
1.	Forest and Vegetation Types	Department of Space-Department of Biotechnology (DOS-DBT) Project on Biodiversity Characterisation at Landscape level (2007)	Based on interpretation of ortho- corrected IRS LISS III (23 m) data of 2005-2006; Projection: LCC, Datum: WGS84
2.	Natural and Cultural Landscapes	Derived from forest and vegetation types layer (S. No. 1)	Projection: LCC, Datum: WGS84
3.	Forest fragmentation and biological richness	Department of Space-Department of Biotechnology (DOS-DBT) Project on Biodiversity Characterisation at Landscape level (2007)	Projection: LCC, Datum: WGS84
4.	Village boundaries	Survey of India	The village boundaries and areas are indicative; Projection: LCC, Datum: Everest
5.	Population density	Village-level Population: Census of India (2001); Village boundary layer: Survey of India	Spatial data organisation and tagging of census data with village layer by NRSC, Hyderabad
6.	Administrative boundaries	Survey of India	Western Ghats landscape as defined by the Planning Commission, Govt. of India, under WGDP and HDP (consisting of 188 Talukas)
7.	Protected Areas, World Heritage Sites and Tiger Corridors	Wildlife Institute of India	Projection: LCC, Datum: Everest
8.	Elephant corridor	Wildlife Trust of India	

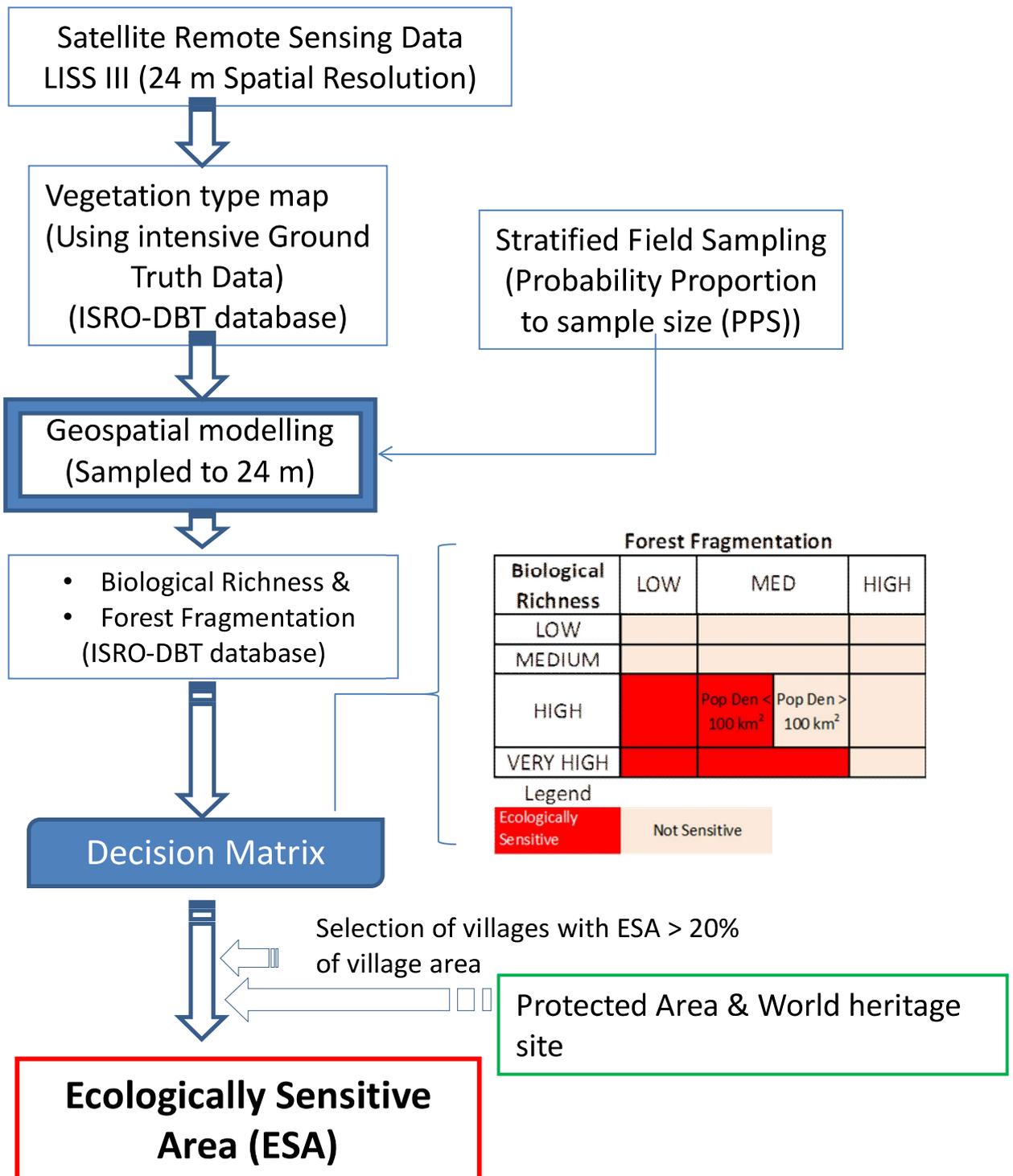


Figure 7: Schematic representation of geospatial analysis carried out using different datasets for identification of ESAs.

The fragmentation layer provides insights into the effects of forest fragmentation on landscape patterns, biodiversity and ecological processes. The biological richness

layer identifies areas that should be treated on a priority basis for the conservation of biodiversity. The biological richness layer is spatially modelled by combining information on disturbance metrics (fragmentation, juxtaposition, porosity and patchiness), ecosystem uniqueness, total importance value, and endemism. It covers only natural landscapes. It may be noted that disturbance metrics included as one of the components of biological richness index and it includes not only fragmentation but also juxtaposition porosity and patchiness. Consequently, fragmentation used in biological richness index is insignificant and does not represent double count. The spatial layers categorize biological richness in four classes (low, medium, high and very high) and forest fragmentation in three classes (low medium and high). Figure 7 explains the steps in processing the datasets for generating eco-sensitive areas.

While very high biological richness with low and medium fragmentation and high biological richness with low fragmentation has been taken as ESA as such, the high biological richness medium fragmentation class was included only where the population density was lower than 100 persons/km². The population data from the 2001 census (Govt. of India, 2001) was combined with spatial data on village boundaries (Survey of India) to prepare a spatial layer on population density. The reason that less than 100 person/km² was chosen because in hilly areas the usual density is <100 persons/km².

The Ecologically Sensitive Areas (ESAs) thus identified are at the smallest administrative unit - the village. Village was taken as the unit of ESA. Villages were selected on the basis of the proportion of ESA to the geographic area of the village. A threshold of 20% proportional ESA was used to mark villages as ESU. This approach is much more conservative, and indeed meaningful, than treating an entire taluka as an ESA. Finally all protected areas and World Heritage sites (spatial data provided by the Wildlife Institute of India) are treated as Ecologically Sensitive. It should be noted that the village boundaries from SOI used in the study are indicative. The spatial resolution used was 24 m. The observation made from data set on Tiger

corridor (from WII) and Elephant corridor (from Wildlife Trust of India) were used to overlay on ESA.

The methodologies described above were discussed at HLWG meetings and also used to map ESAs in Mudigere taluka of Chikmagalur district in Karnataka as another case study.

5.4 Observations

5.4.1 The observation made from geospatial analysis are given below:

5.4.2 Case Study on the Identification of ESAs in Mudigere Taluka of Chikmagalur District of Karnataka

Chikmagalur is a district in the Western Ghats region of Karnataka. The rivers Tunga and Bhadra originate from this district. The first coffee plantations in the country were established in this district. The Kudremukh National Park and Bhadra Wildlife Sanctuary are located in the area. The District is divided into seven talukas grouped into two Revenue Sub-Divisions viz., Chikmagalur and Tarikere. Out of seven talukas, five talukas Chikmagalur, Koppa, Mudigere, Narasimharajpura and Sringeri are part of the Western Ghats region delineated.

The forests in the taluka are of evergreen, semi evergreen, *sholas* and moist deciduous types.

Figures 8 & 9 shows that a little over a third of the taluka is occupied by orchards and plantations and constituted the cultural landscape (54% of the taluka). The natural landscape accounts for 46% of the taluka area.

About 63% of the natural landscape is characterized by high and very high biological richness, with almost 60% of it falls under low fragmentation category.

The village database shows that there are 140 villages in the taluka and 58 of them have a population density below 100 persons/km².

Figure 10 indicates that ESA constitutes 570 km² covering 27 villages. These villages include all those having 20% or more of the area covered under ecologically sensitive area. The total ESA includes 184 km² of the Kuderemukh National Park located at the north western part of the taluka.

ESZs of WGEEP were overlaid on the ESA of HLWG (Figure 11). As per WGEEP methodology, out of 28 grids of 9x9 km, 17 were assigned to ESZ 1 and 10 were assigned to ESZ 2.

These results on the case study substantiate that the methodologies followed for identification of ESA are objective, scientific and practical in delineation of ESAs at fine resolution with village as a unit. This is further confirmed by Peer Review Committee (see item 5.5 of this Chapter).

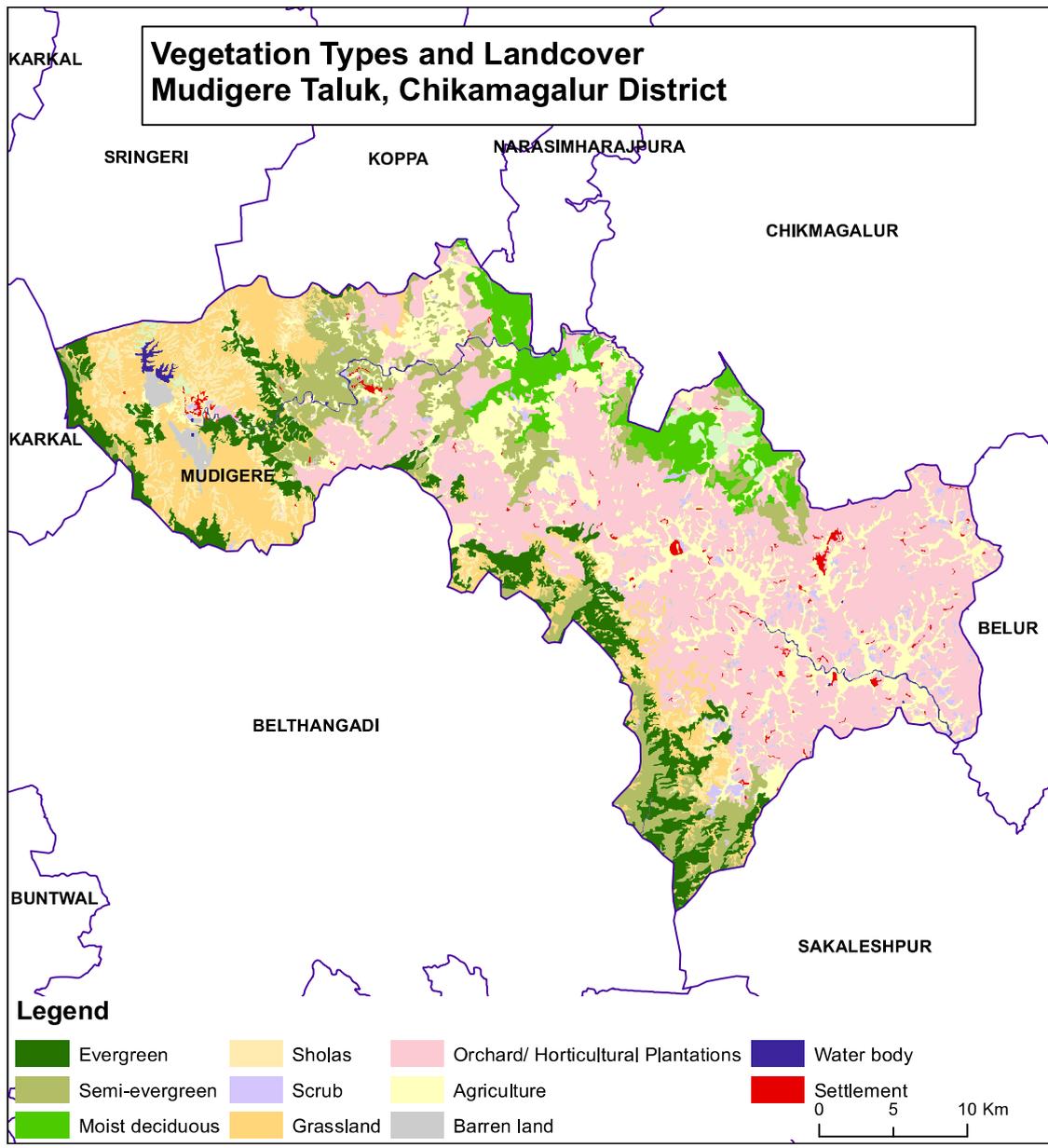


Figure 8: Mudigere taluka showing vegetation and land cover types.

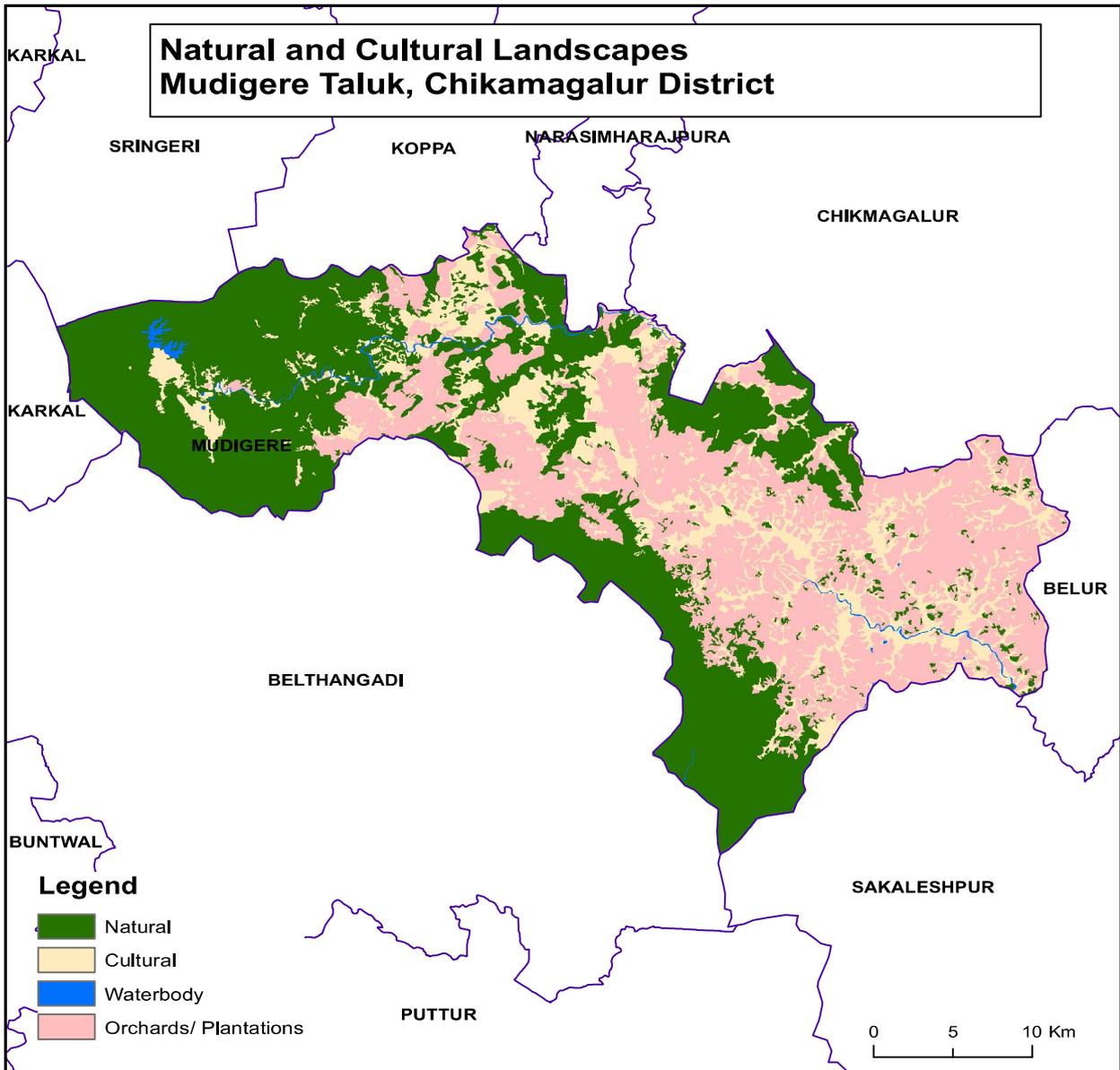


Figure 9: Mudigere taluka showing natural and cultural landscapes.

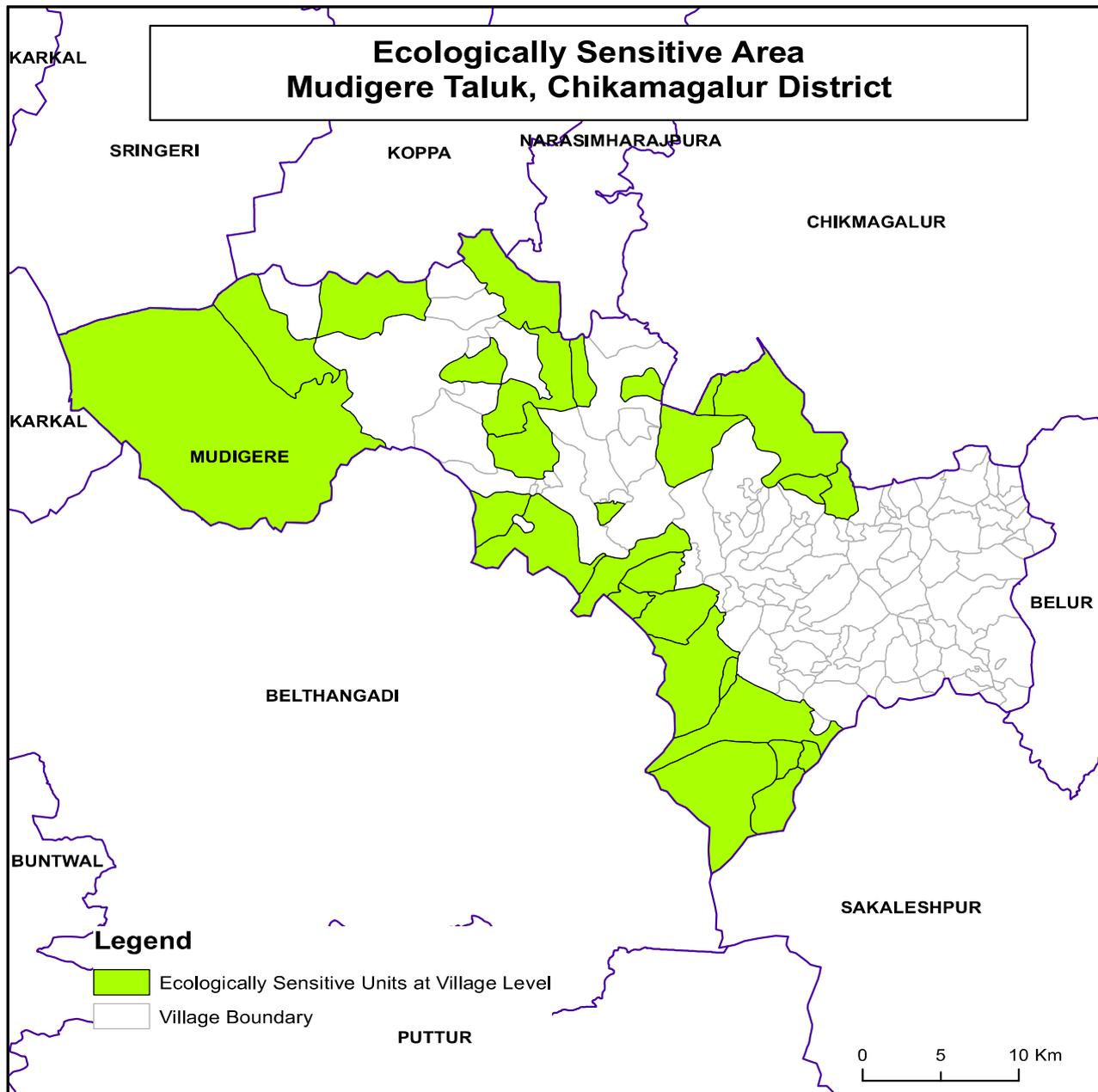


Figure 10: Mudigere taluka showing ESAs.

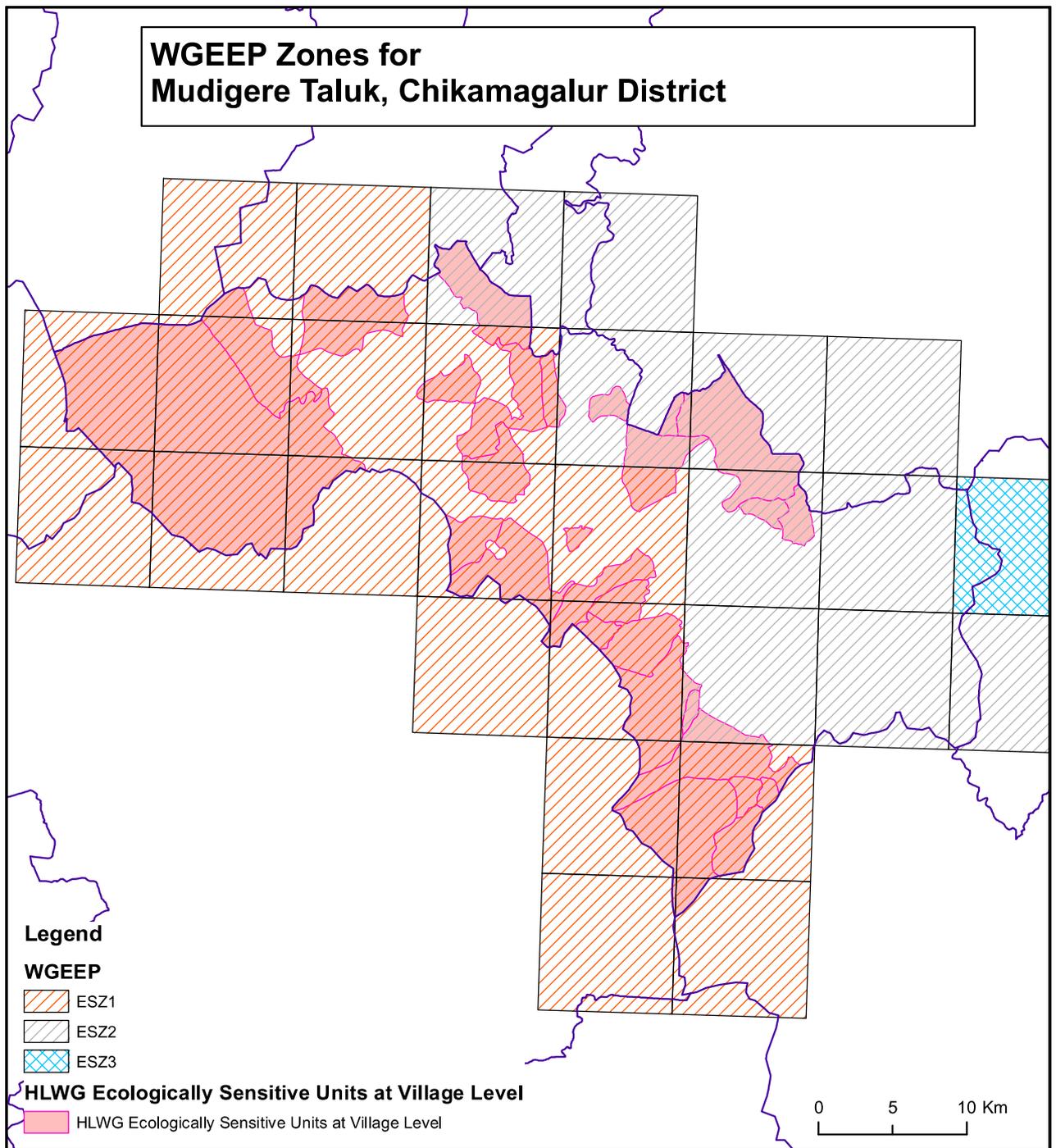


Figure 11: Mudigere taluka showing ESZs of WGEEP overlaid on ESAs.

5.4.3 Identification and Delineation of ESAs in Western Ghats Region

5.4.3.1 Different layers used in the delineation of ESA across Western Ghats region

The methodologies thus tested by HLWG were used in the identification and delineation of ESAs in Western Ghats Region as defined by HLWG.

The vegetation and land cover classes found in natural and cultural landscapes are given in Table 4 and Figure 12. The area under natural and cultural landscapes is 68,249 km² and 96,031 km² respectively and thus making the total geographical area of Western Ghats as 1,64,280 km². The four forest types (49,926 km²), grasslands (5,549 km²) and scrub (8,972 km²) cover most of the natural landscape; of the four forest types, moist deciduous forest is predominant (25,479 km²). Agriculture (81,239 km²) and orchard/horticultural plantation (7,815 km²) are dominant land uses in cultural landscape.

Landuse and landcover data clearly depict that the Western Ghats are prominently dominated and deeply integrated by cultural landscapes along with unique and ecologically sensitive natural landscapes (Figures 8 & 9). Therefore, any strengthening of conservation efforts in Western Ghats should also take into account this integrative practice and sustainable development that makes conservation very effective.

It may be noted that the total area under water bodies is 4,351 km², of which 3,617 km² area of waterbodies shares boundary with atleast one polygon of natural landscape in Western Ghats region. Consequently, the area of 3,617 km² under waterbodies is included under natural landscape and the remaining area under waterbodies is part of cultural landscape. Of the 3,617 km² area under waterbodies, 1,526 km² area falls under ESAs (Source: NRSC).

Table 4: Vegetation and Landcover classes in Natural and Cultural Landscapes

Natural Landscape		Cultural Landscape	
Sl No	Class	Sl No	Class
1	Sholas	1	Agriculture
2	Evergreen	2	Arecanut
3	Semi-evergreen	3	Orchard/ Horticulture
4	Moist deciduous	4	Water Body*
6	Teak	5	Settlement
7	Bamboo		
8	Dry deciduous		
12	Grassland		
13	Kans		
14	Mixed plantation (forest)		
15	Sacred groves		
16	Riverine		
18	Scrub		
19	Mangrove		

*Also found under natural landscape (see also section 5.4.3.1 of this Chapter)

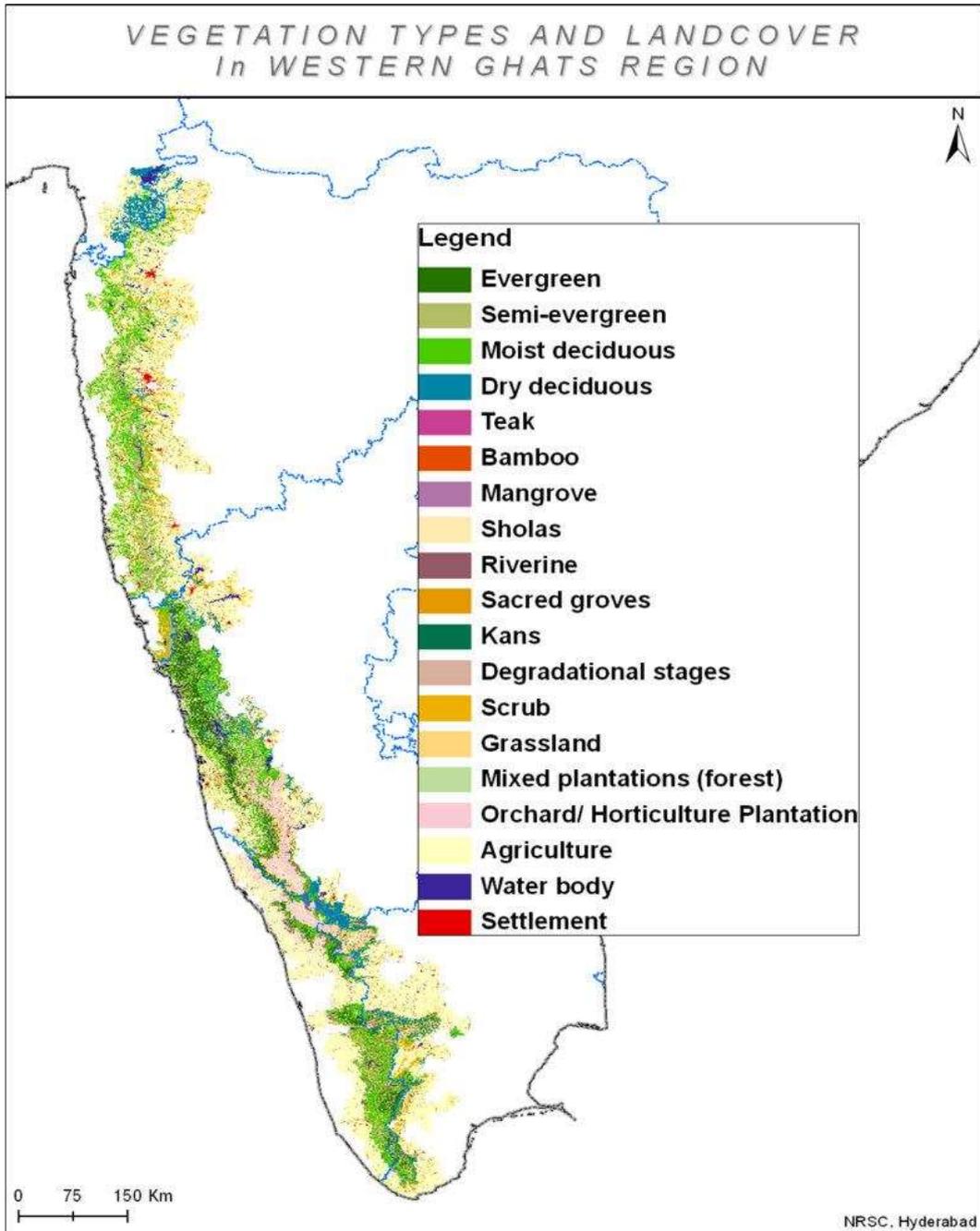


Figure 12: Vegetation and Land cover types in WG region.

Figure 13 depicts area of Western Ghats region covered by relative portions of Natural and Cultural Landscapes. Out of the total 1,64,280 km² area, the ratio of Natural to cultural landscape is 68,271 km²: 96,008 km².

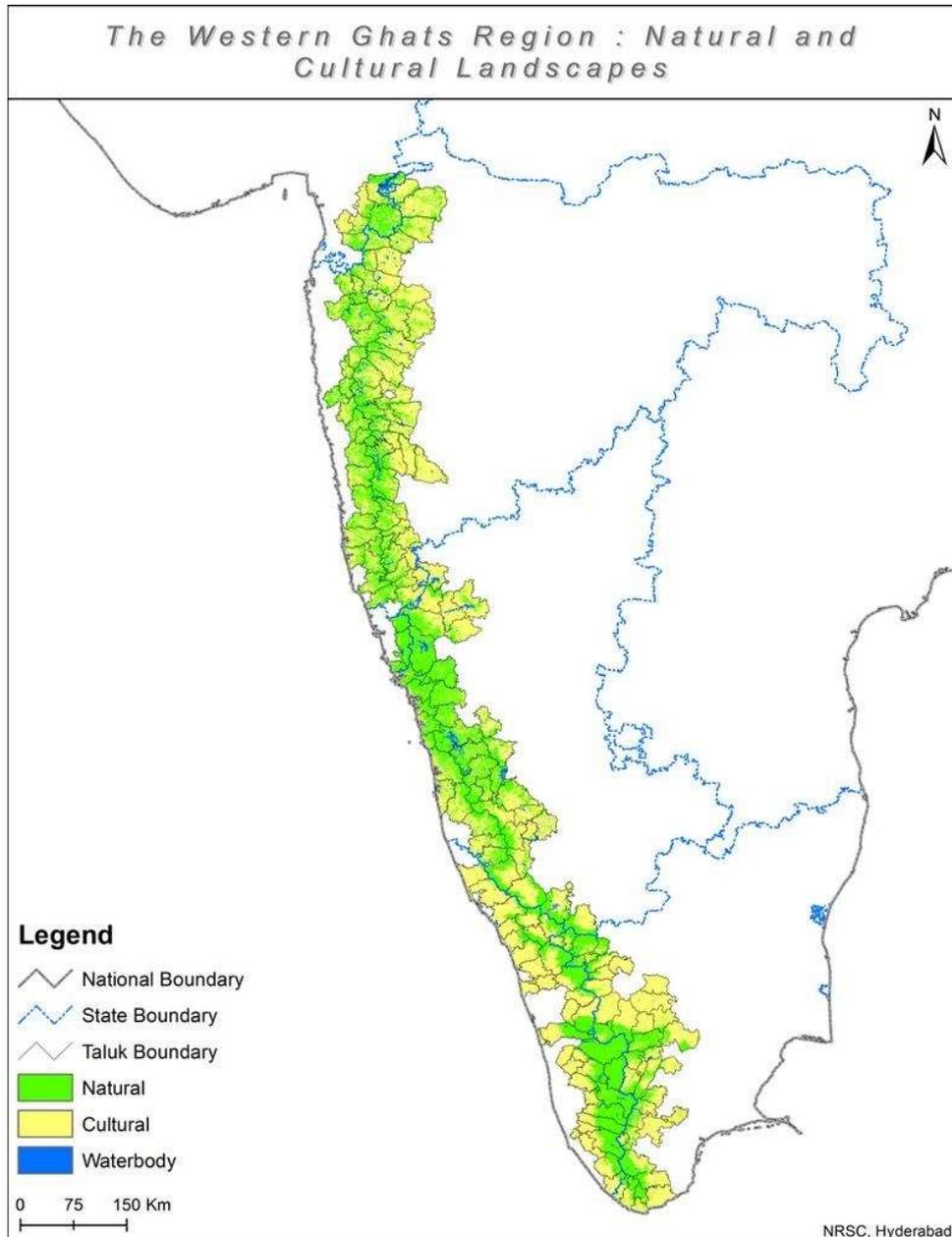


Figure 13: Western Ghats region showing Natural and Cultural Landscapes and water bodies.

Figure 14 illustrates the different levels of biological richness in natural landscape across Western Ghats region. Figure 15 gives pattern of forest fragmentation layer across the Western Ghats region.

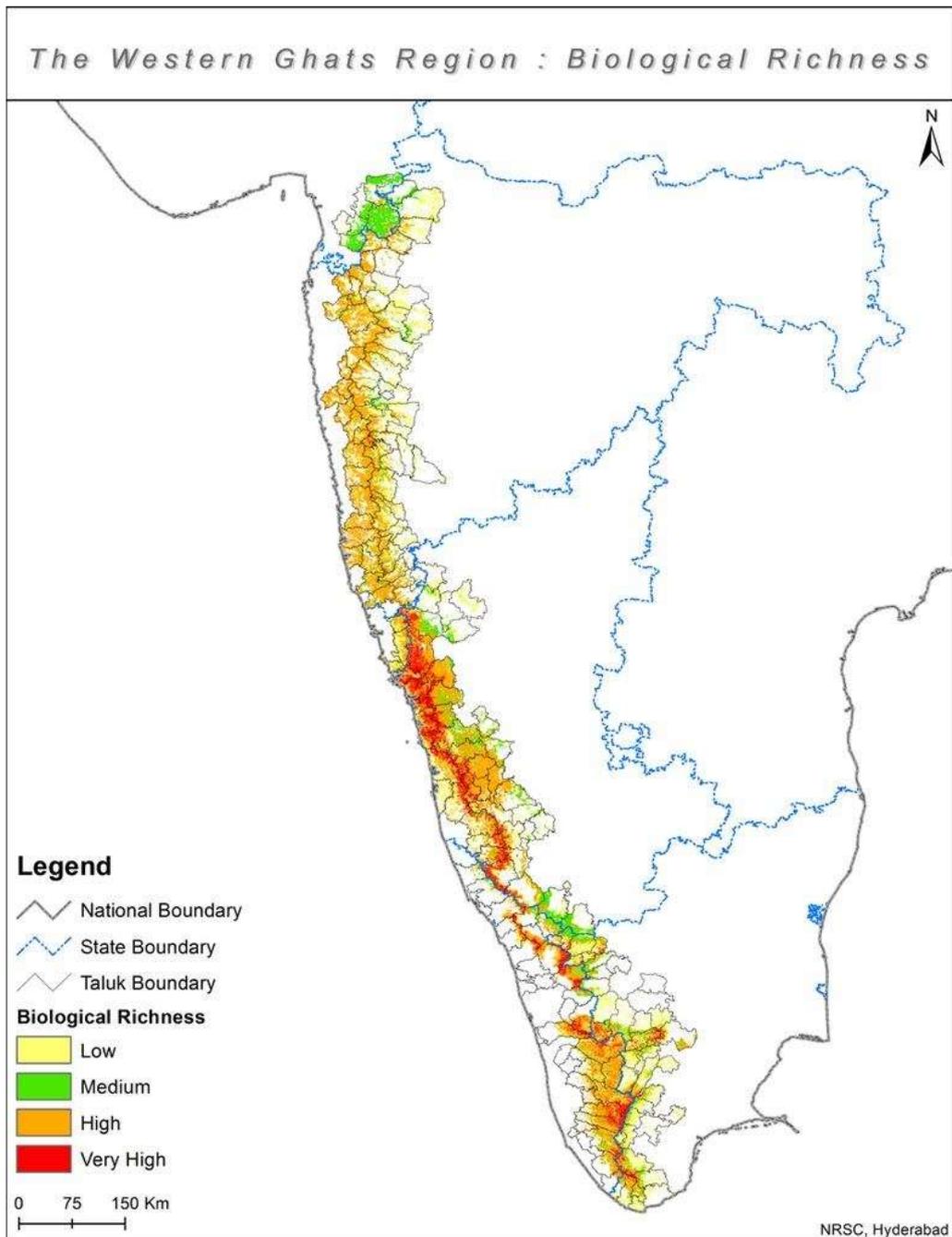


Figure 14: Western Ghats region showing different levels of biological richness in natural landscape.

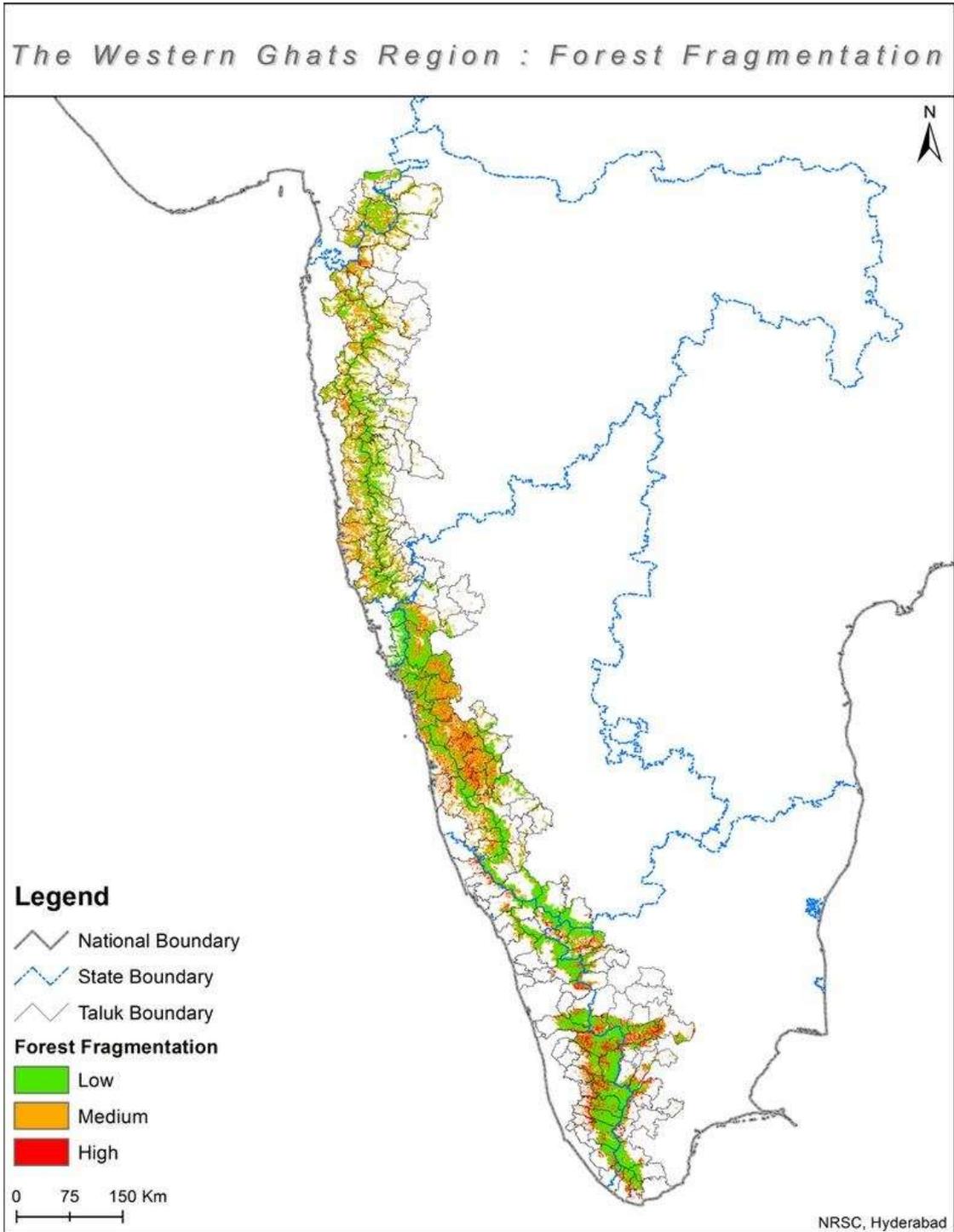


Figure 15: Western Ghats region showing different levels of forest fragmentation in natural landscape.

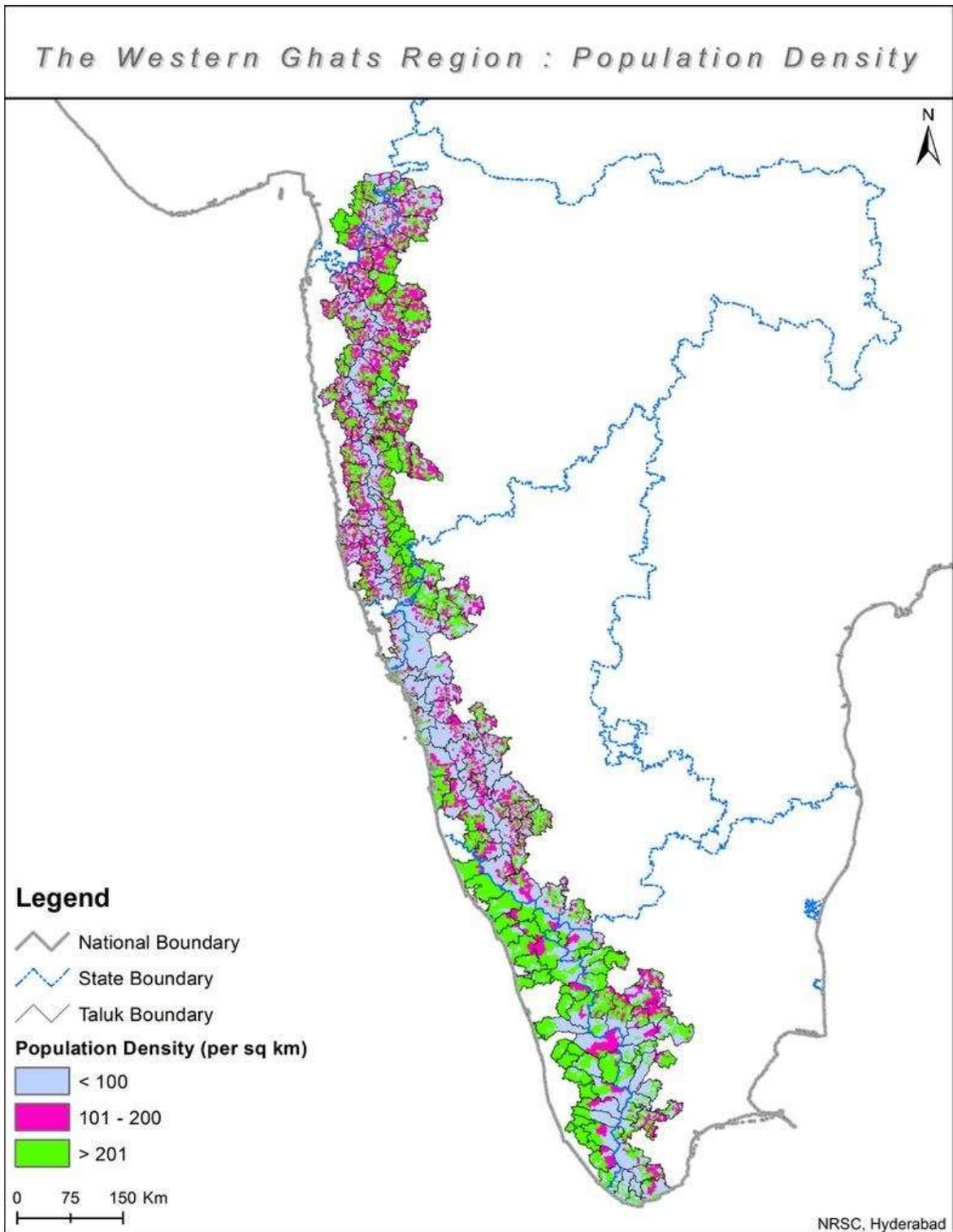


Figure 16: Western Ghats region showing different population densities.

The population densities across the Western Ghats region are given in Figure 16. Table 5 gives the number of villages and population densities in ESA and non-ESA areas. The ratio of village area in ESA to non-ESA is 59,940 km² (36.49%) : 1,04,340 km² (63.51%). The ratio of population size in ESA to population size in non-ESA is 52,12,244 (10.82%): 429,46,841 (89.18%). The number of villages in ESA to number of villages in non-ESA is 4156 (22.88%): 14009 (77.12%). The ratio of population density in ESA to population density in non-ESA is 86.9: 411.61.

Table 5: Number of villages and population density in ESAs and non ESAs of Western Ghats region

CAT	Village Area	Population Size	Number of Villages	Population Density
ESA	59,940 36.49%	52,12,244 10.82%	4,156 22.88%	86.96
NON ESA	1,04,340 63.51%	429,46,841 89.18%	14,009 77.12%	411.61

The list of villages in ESA is given in Appendix 3 in Volume 2.

5.4.3.2 ESA, PAs, WHSs and Wildlife Corridors in Western Ghats Region

ESA, PAs and WHSs in Western Ghats region are mapped in Figure 17. As indicated in Table 6 the area under ESA (including PAs and WHSs) is approximately 59,940 km² (about 60,000 km²) out of the total 68,271 km² of natural landscape. This constitutes 36.49% (about 37%) of the Western Ghats region. Out of 59,940 km² ESA, 16,902 km² area is occupied by PAs and WHSs (Table 6).

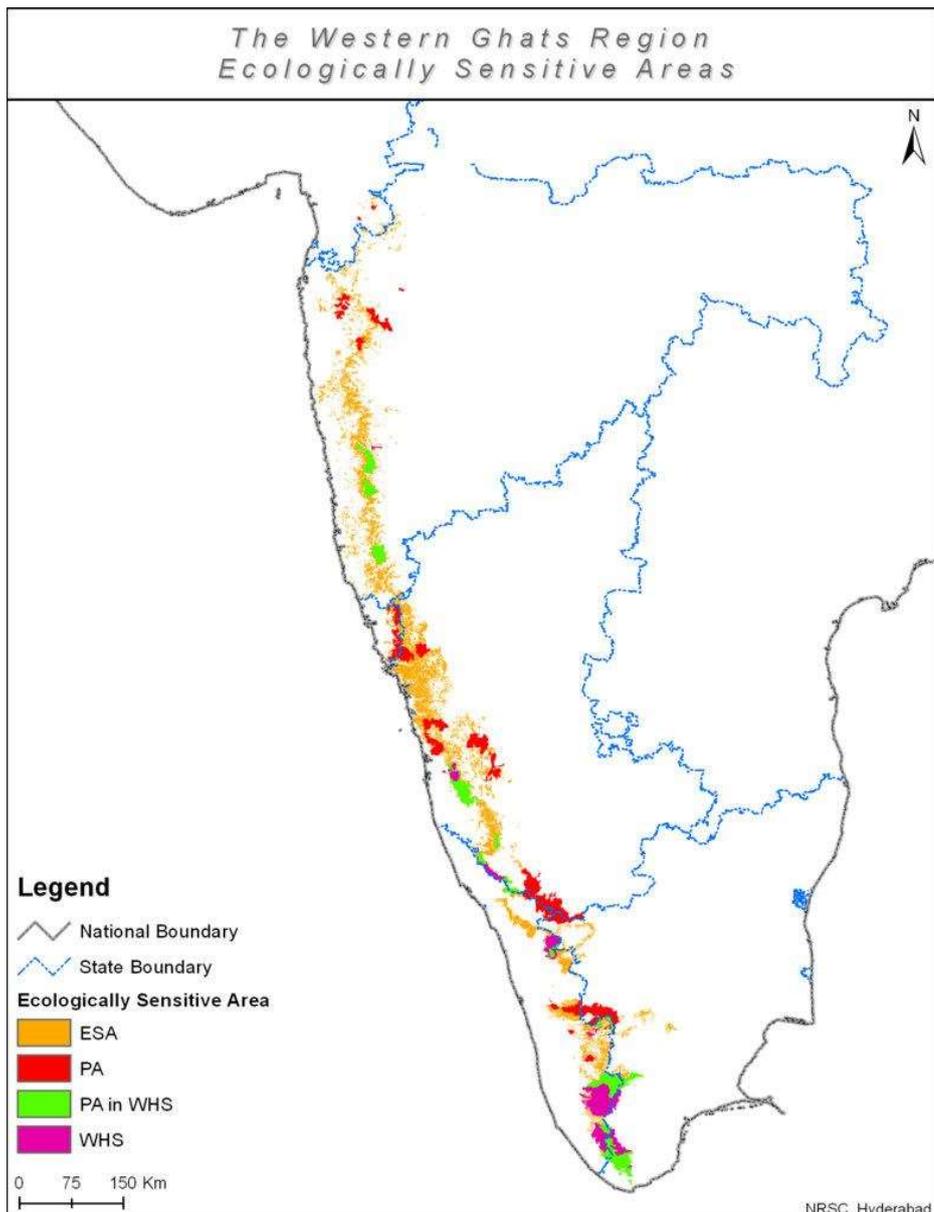


Figure 17: Western Ghats region showing ESA, PAs and WHSs.

The Western Ghats (WG) region includes an extensive Protected Areas network covering about 10% of the geographic area of WG. However, the PAs cannot safeguard viable populations of landscape dependent species such as tiger and elephant over long term, unless they remain connected by habitat corridors. Corridors facilitate movement of individual wild animals amongst PAs so as to minimize the ill effects of inbreeding, genetic drift, demographic stochasticity, and are essential to ensure long-term survival of wild animal populations. This is in tune with the well understood fact that wildlife populations need to be managed as 'metapopulations'.

Wildlife Institute of India (WII) report on the 'Status of Tigers, Co-predators, and Prey in India -2010' identifies important tiger corridors, their spatial context, and potential bottlenecks affecting their functioning. Similarly the Wildlife Trust of India (WTI) has identified elephant corridors.

Tiger and elephant corridors mostly fall in the ESA of the Western Ghats as defined by HLWG in this report. However, some parts of corridors traverse through the cultural landscape in the WG outside ESA. HLWG urges the State Governments to ensure the integrity of the wildlife corridors, and not permit alteration in present landuses in cultural landscape that would make these areas impermeable to the wildlife movement. This can better be ensured by the WG States by devising a workable joint action plan for securing the wildlife corridors especially in cultural landscape.

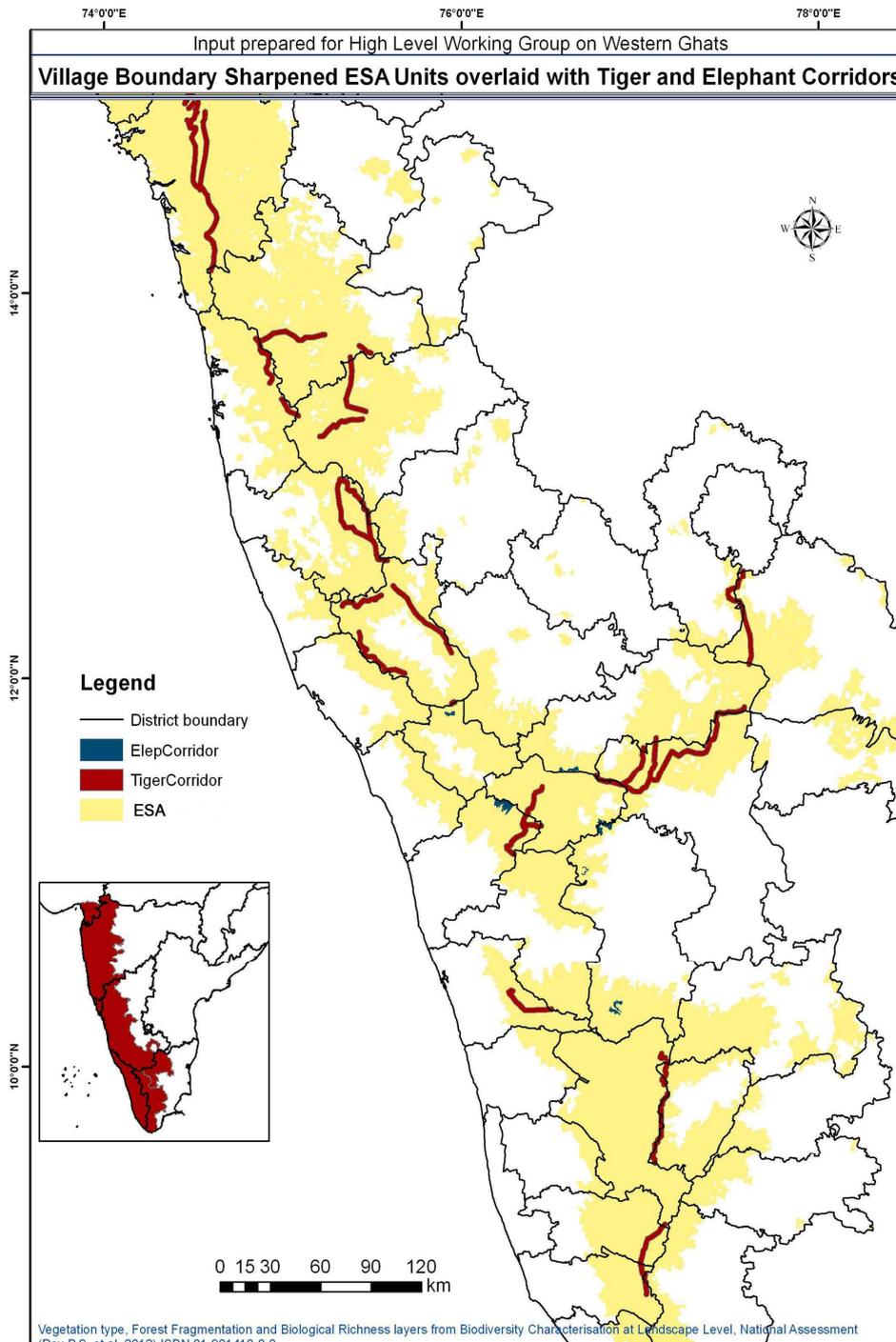


Figure 18: Wildlife corridors (Tiger and Elephant) in ESA of Western Ghats region (Datasets of Tiger Corridor from WII and dataset of Elephant Corridor from WTI were used).

5.4.3.3 Delineation of ESA in each of the Six States of Western Ghats region

For each State of the Western Ghats region, one map depicting natural and cultural landscape and another map showing ESA are provided (Figures 19 to 30). Table 6 gives number of villages falling under ESA and area under ESA in each taluka of Western Ghats region and the districts to which the taluka belongs for each State of Western Ghats region. The list of villages is given in Appendix 3 in Volume 2.

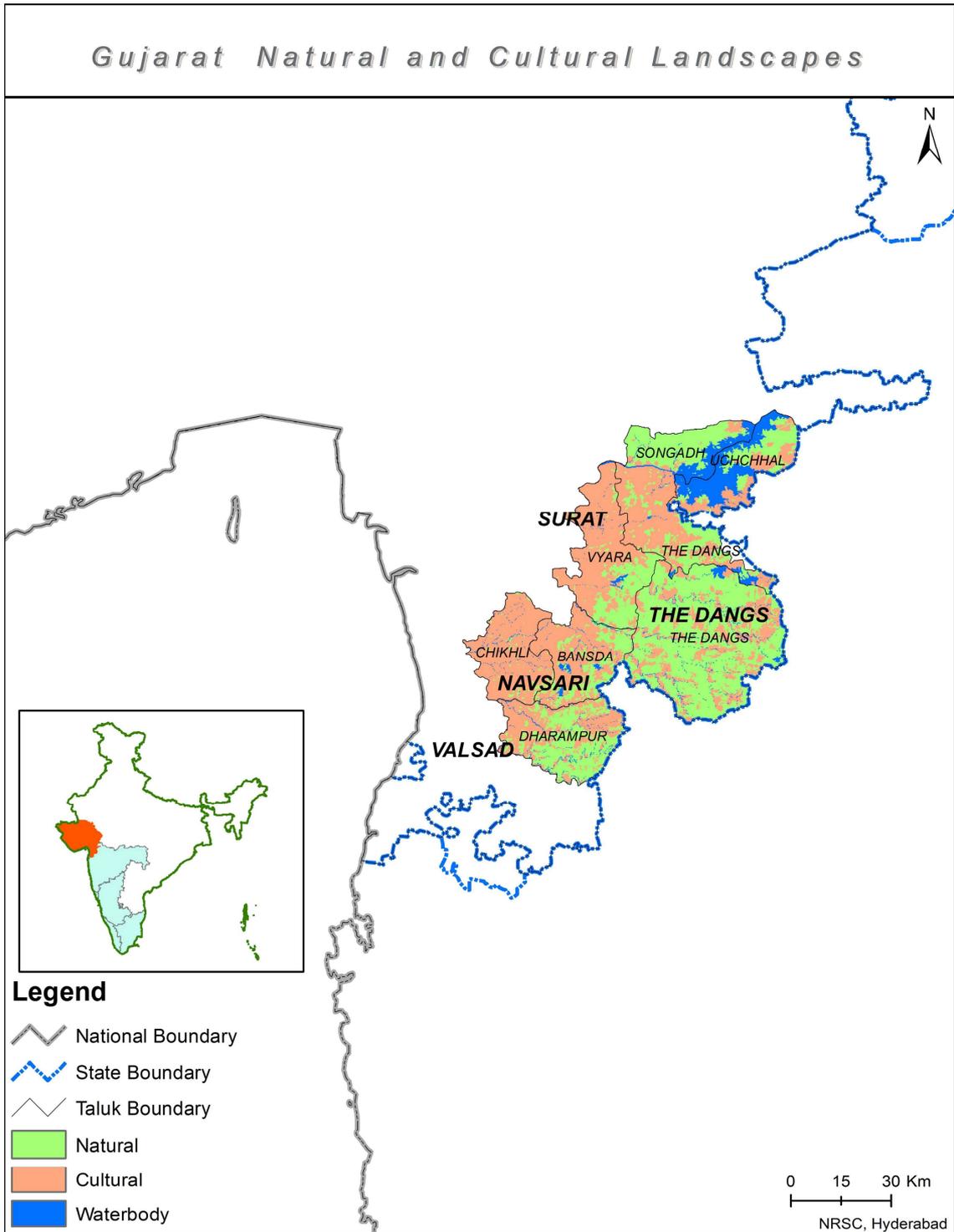


Figure 19: Natural and Cultural landscapes in Western Ghats region of Gujarat.

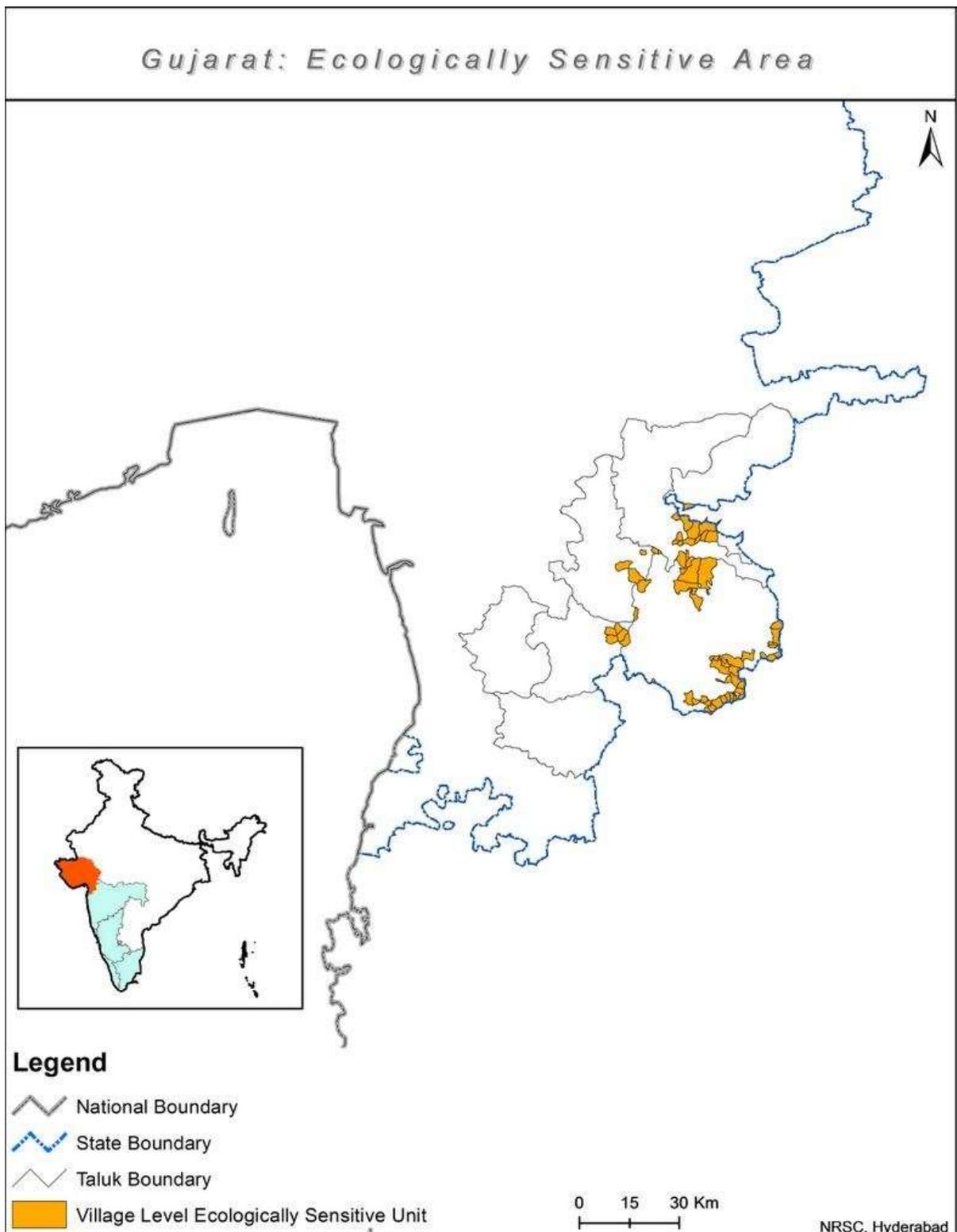


Figure 20: ESA in Western Ghats region of Gujarat.

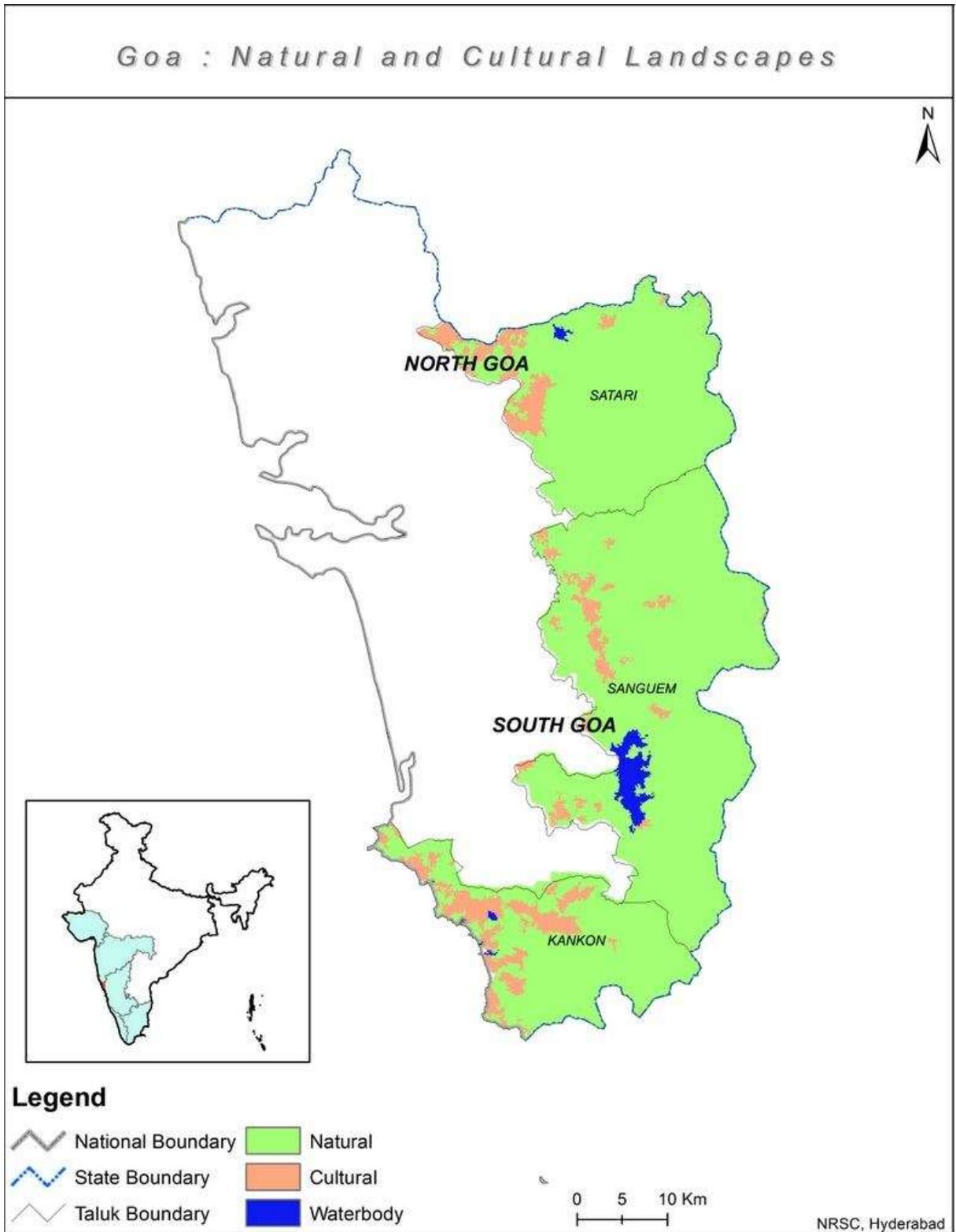


Figure 21: Natural and cultural landscape in Western Ghats region of Goa.

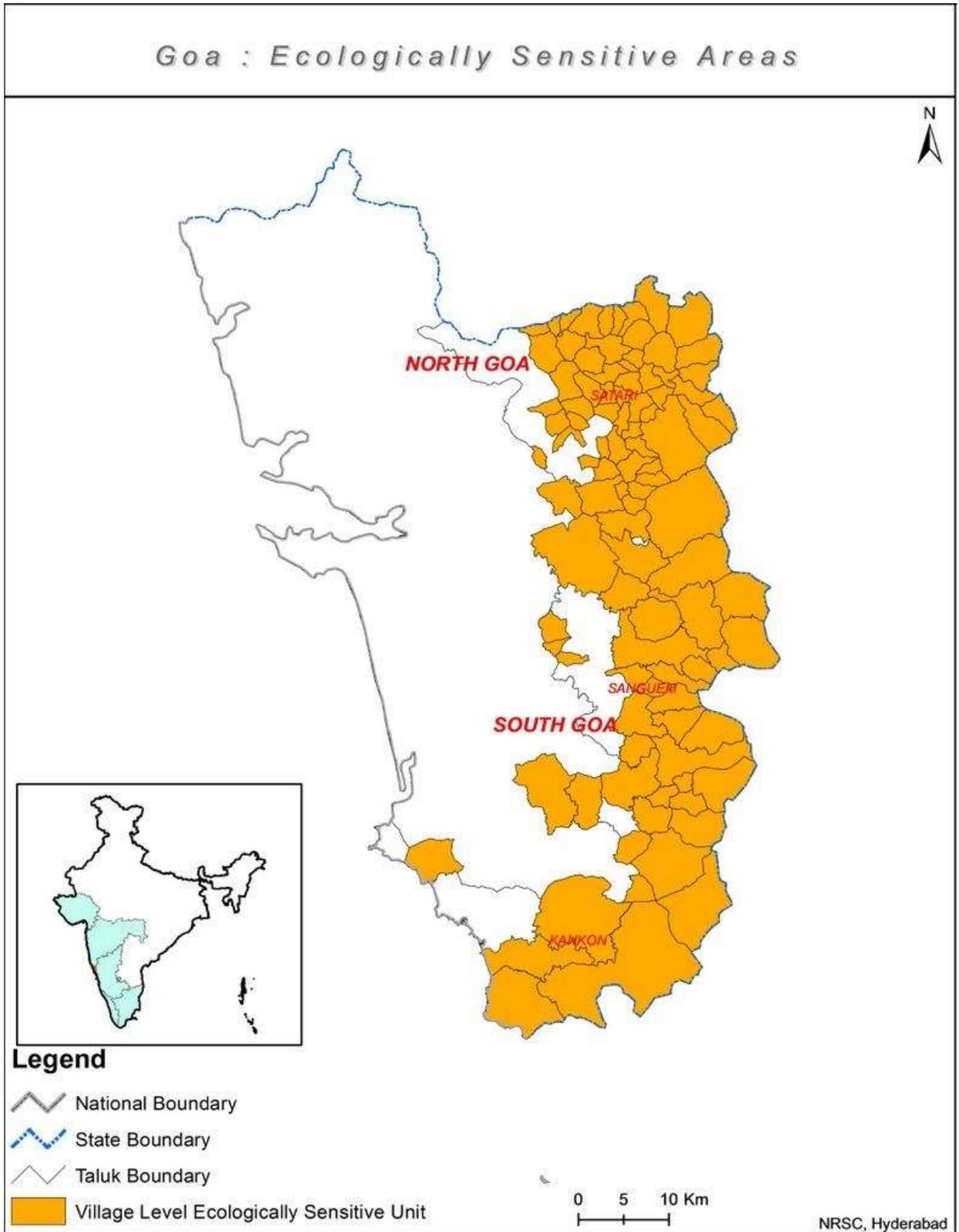


Figure 22: ESA in Western Ghats region of Goa.

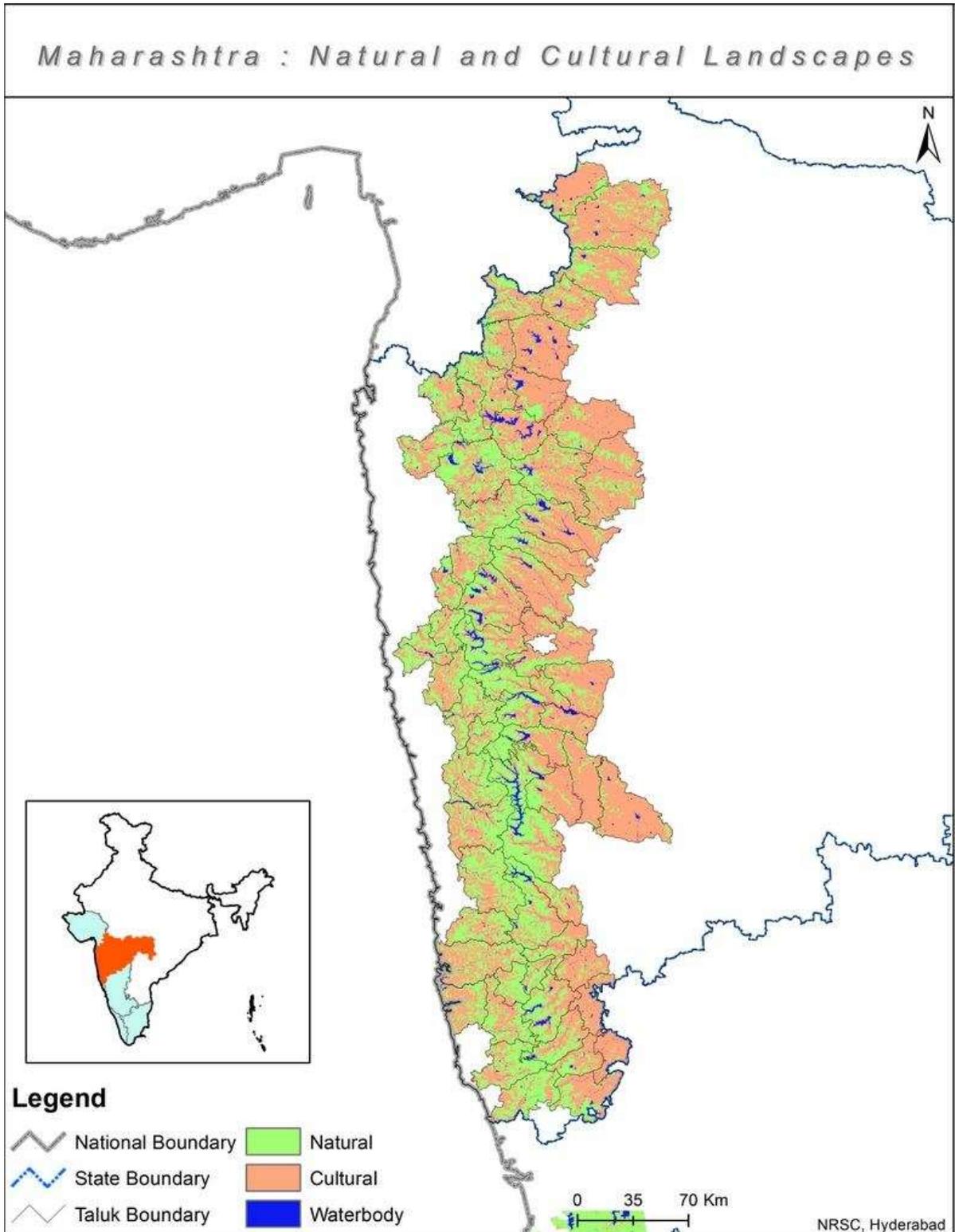


Figure 23: Natural and Cultural landscapes in Western Ghats region of Maharashtra.

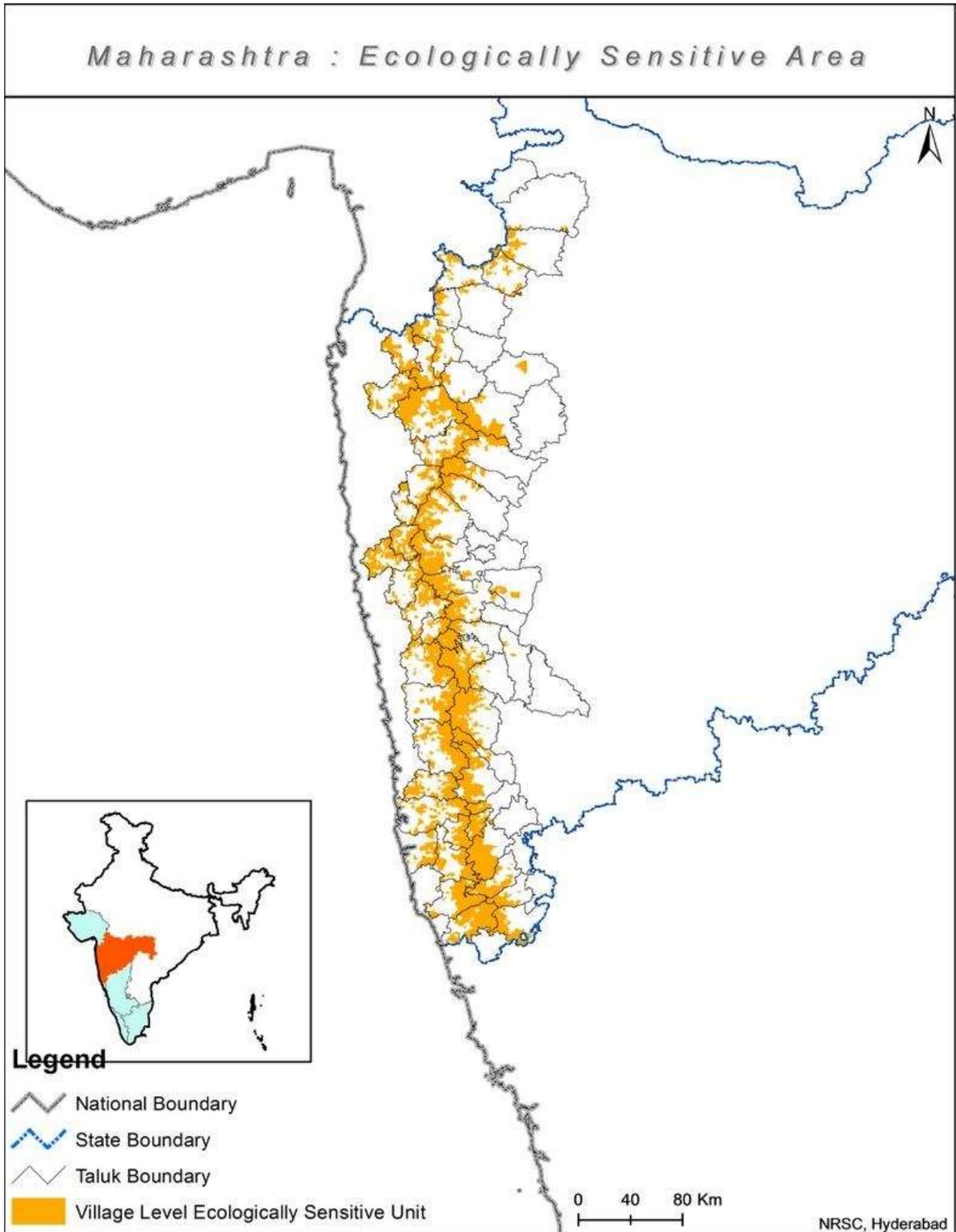


Figure 24: ESA in Western Ghats region of Maharashtra

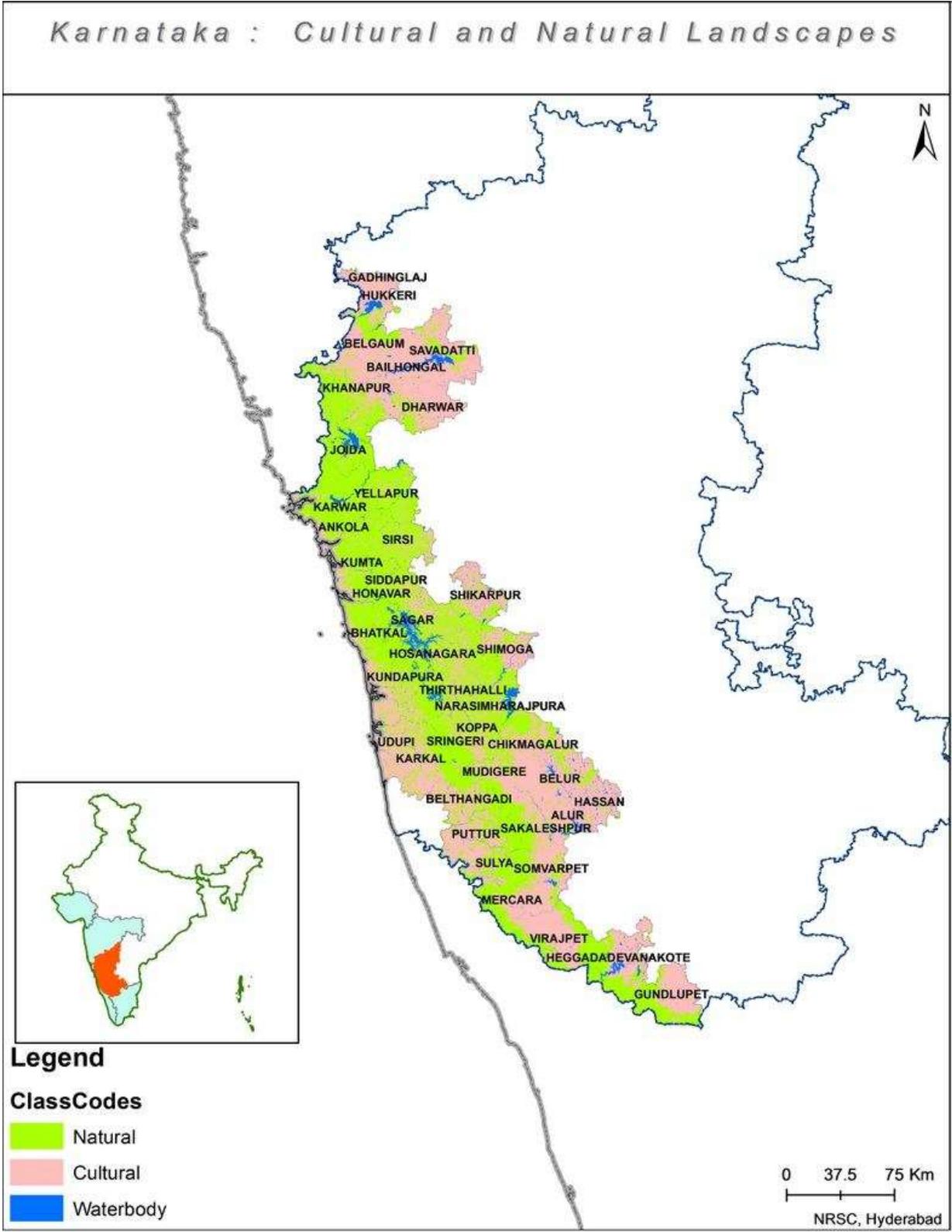


Figure 25: Natural and Cultural landscapes in Western Ghats region of Karnataka.

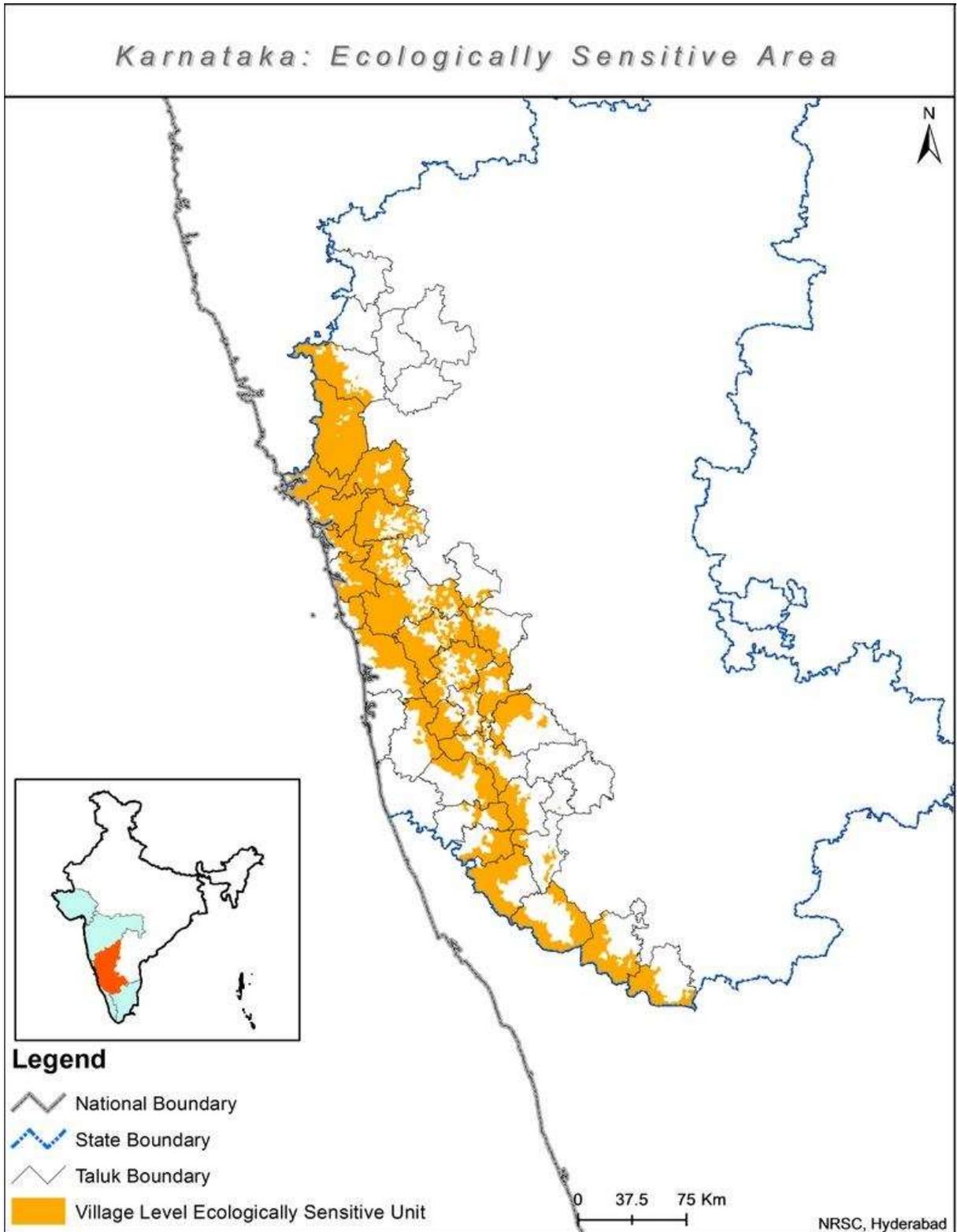


Figure 26: ESA in Western Ghats region of Karnataka.

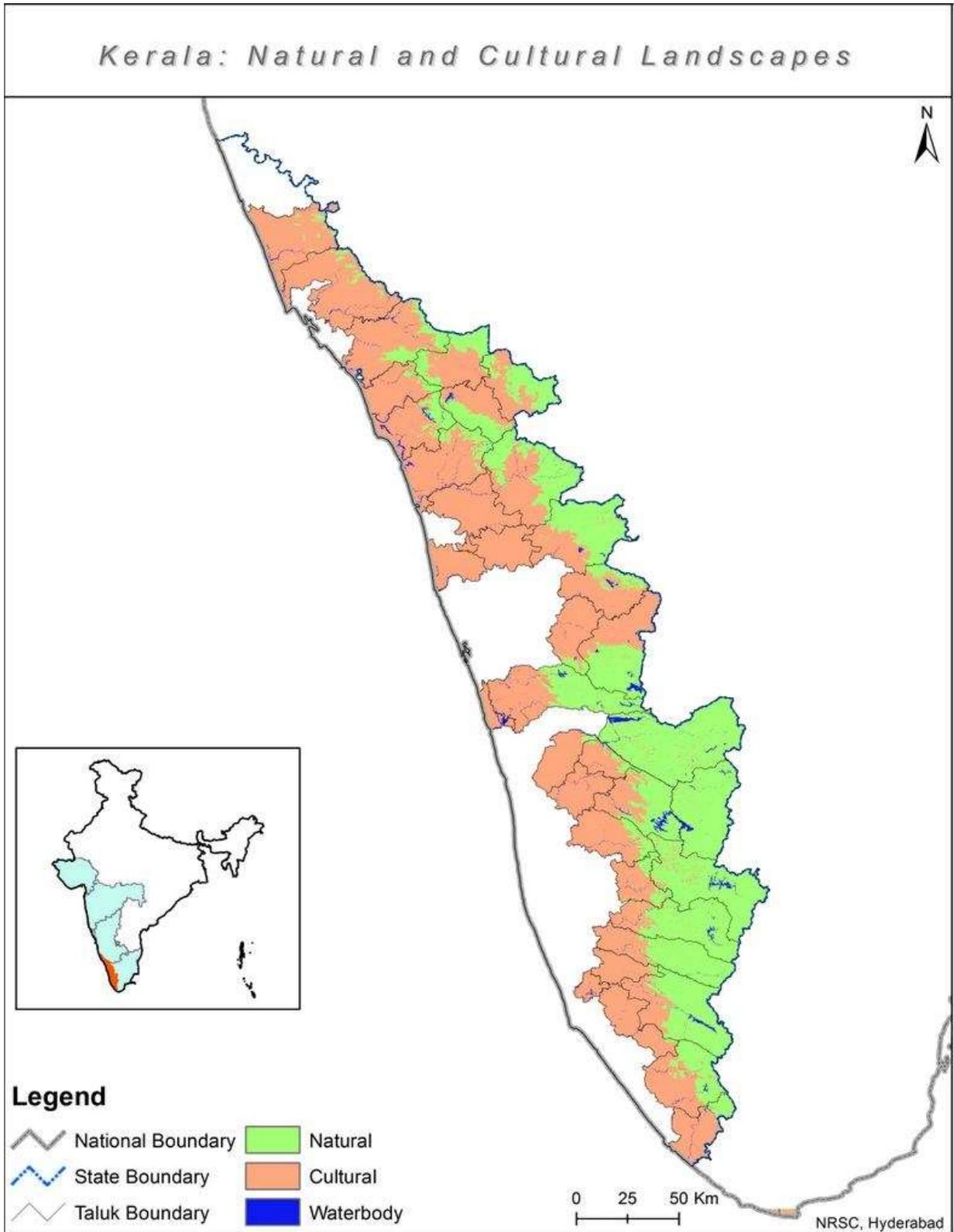


Figure 27: Natural and Cultural landscapes in Western Ghats region of Kerala.

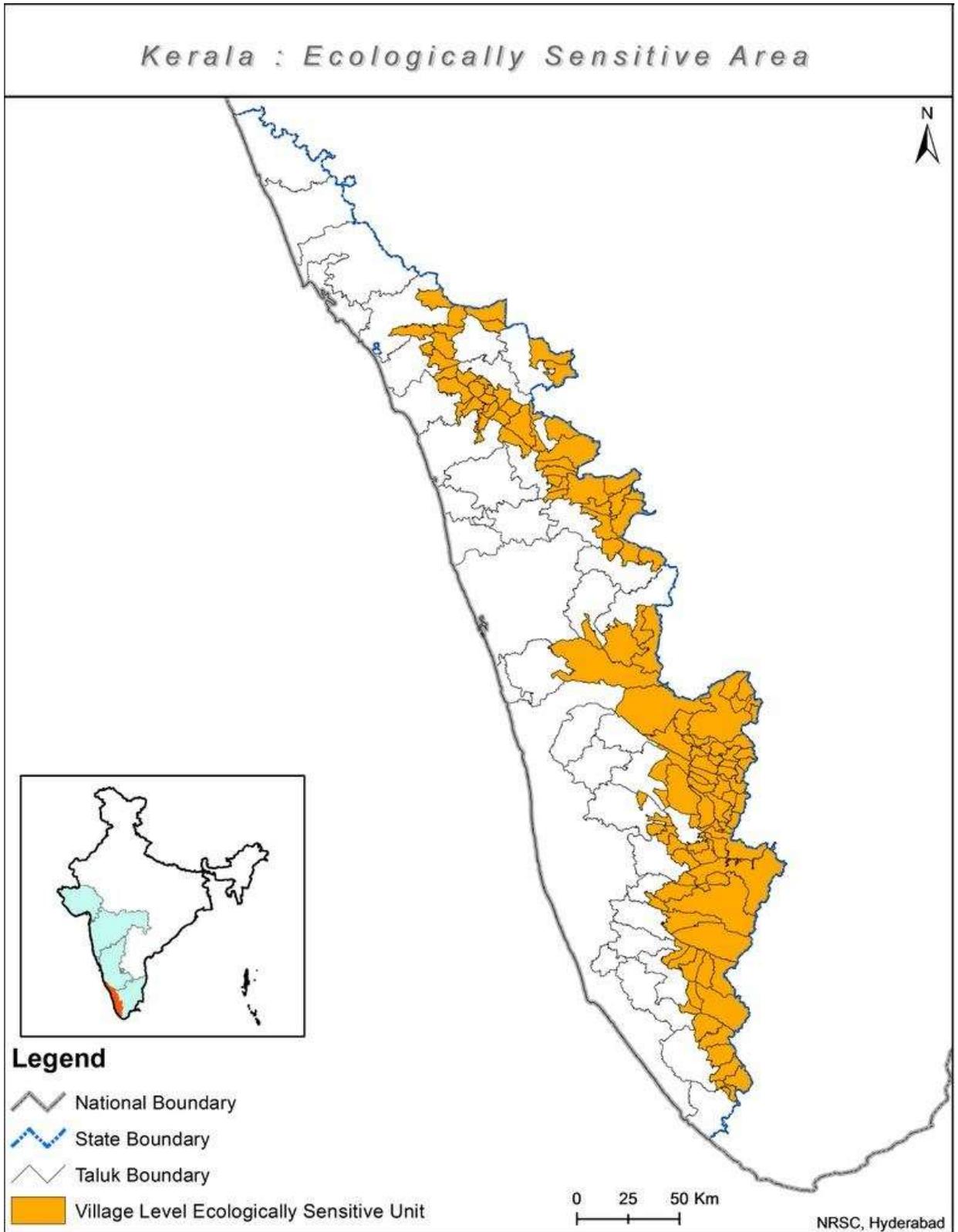


Figure 28: ESA in Western Ghats region of Kerala.

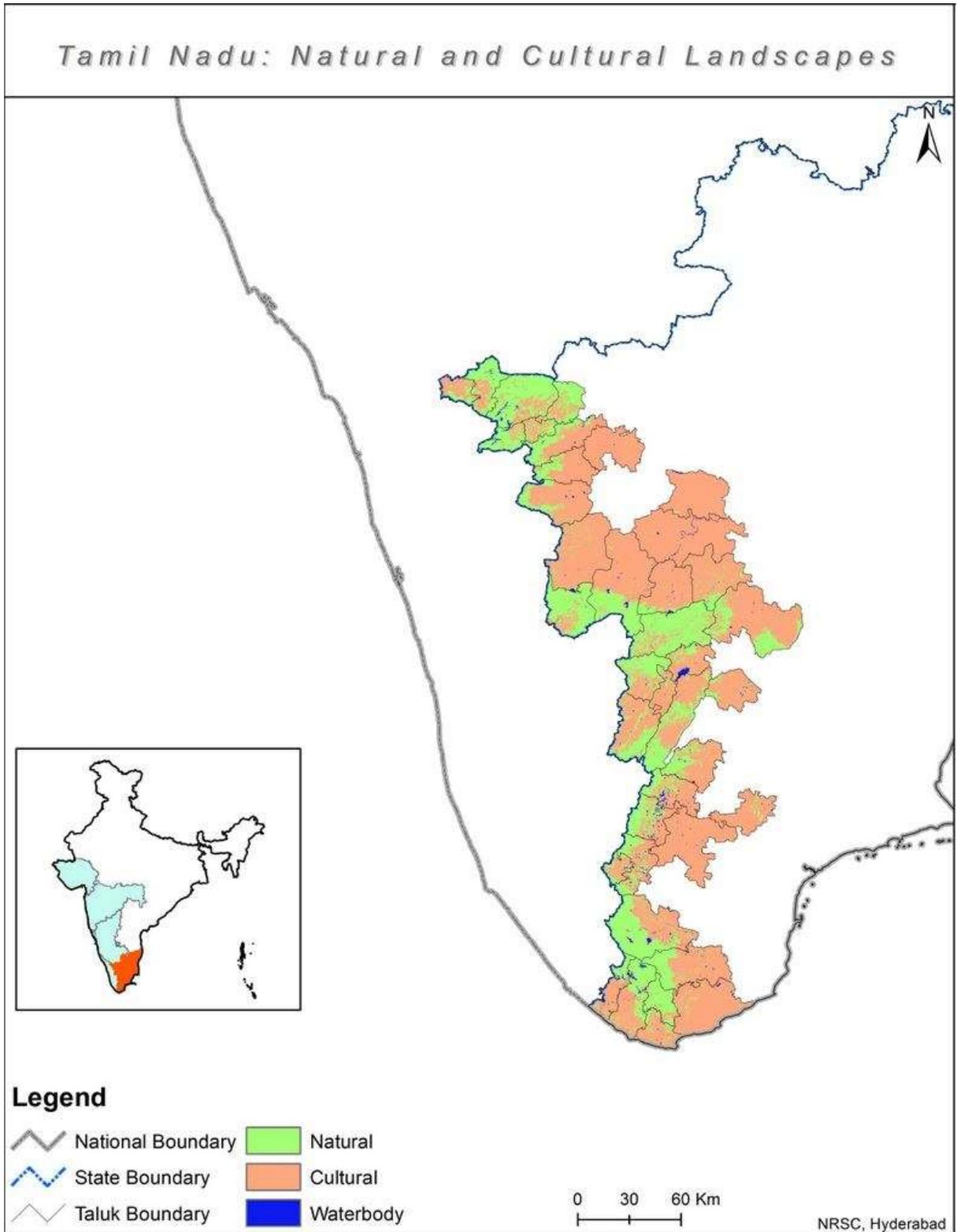


Figure 29: Natural and Cultural landscapes in Western Ghats region of Tamil Nadu.

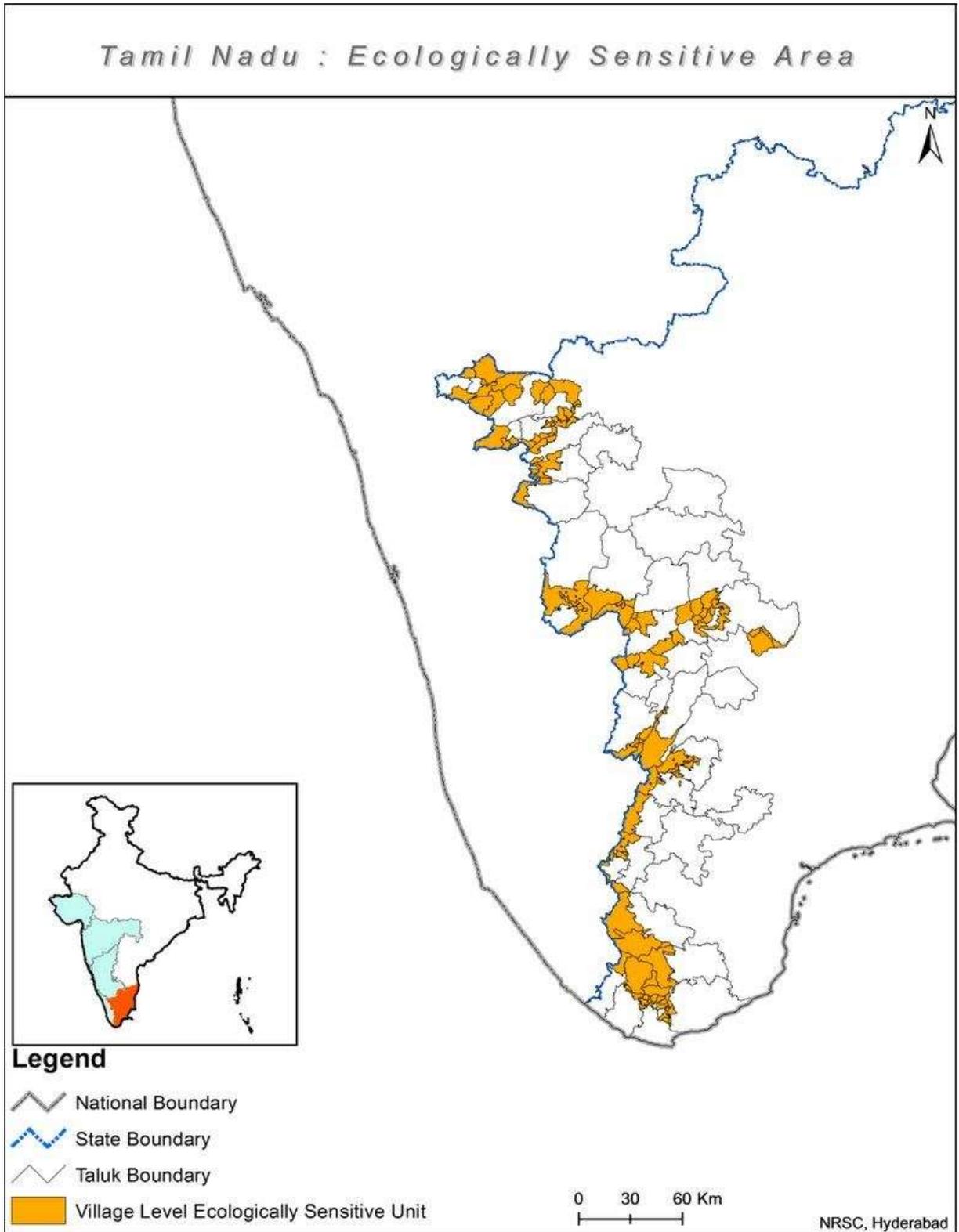


Figure 30: ESA in Western Ghats region of Tamil Nadu.

Table 6 gives statistical data on ESA, PAs+WHSs, natural and cultural landscapes geographical area of talukas falling in Western Ghats region in each of the 6 States of Western Ghats region. The State of Goa has highest percent of ESA (83.57%), of which nearly half of it is under PAs + WHS. The State of Karnataka and Kerala have high percent of area under ESA. Gujarat has least percent of ESA area.

Table 6: Area under Natural and Cultural landscapes, ESA, PAs+WHSs and total area of 'talukas' under Western Ghats region in different States of the Western Ghats region (area in km²)

State	Total Geographic Area of State	Western Ghats Taluka Area	No. of Villages	Natural Landscape	Cultural Landscape	PA + WHS	Village Sharpened ESA	ESA to WG Taluka
Goa	3,702	1,749	99	1,558	191	655	1,461	83.57%
Gujarat	1,96,024	5,977	64	2,553	3,423	64	449	7.52%
Karnataka	1,91,791	44,448	1,576	21,529	22,919	5,660	20,668	46.50%
Kerala	38,863	29,691	123	12,477	17,214	4,913	13,108	44.15%
Maharashtra	3,07,713	55,345	2,159	21,185	34,161	2,242	17,340	31.33%
Tamil Nadu	1,30,058	27,069	135	8,947	18,122	3,369	6,914	25.54%
Grand Total	8,68,151	1,64,280	4,156	68,249	96,031	16,902	59,940	36.49%

Table 7: Number of villages with ESA in each taluka, the total geographical area of taluka and the area occupied by ESA in a taluka across the States of Western Ghats

State	District	Taluka	Taluka Area (km ²)	ESA	No. of Villages with ESA
Gujarat	Navsari	Bansda	571	35	5
		Chikhli	553		
	Surat	Songadh	1,111	95	13
		Uchchhal	559	5	1
		Vyara	782	30	5
	The Dangs	The Dangs	1,700	285	40
	Valsad	Dharampur	699		
Gujarat Total			5,976	449	64

State	District	Taluka	Taluka Area (km ²)	ESA	No. of Villages with ESA
Goa	North Goa	Satari	515	406	56
	South Goa	Kankon	362	284	5
		Sanguem	872	771	38
Goa Total			1,749	1,461	99

State	District	Taluka	Taluka Area (km ²)	ESA	No. of Villages with ESA
Maharashtra	Ahmadnagar	Akola	1,433	453	42
		Sangamner	1,630		
	Dhule	Sakri	2,333	47	5
		Kolhapur	Ajra	498	165
	Bavda		265	208	24
	Bhudragad		651	319	28
	Chandgad		913	340	21
	Gadhinglaj		454		
	Kagal		536		
	Karvir		630		
	Panhala		539	140	14
	Radhanagari		912	558	34
	Shahuwadi		1,008	539	51
	Nandurbar	Nawapur	911	13	2
	Nashik	Baglan	1,400	238	15
		Dindori	1,266	42	5
		Igatpuri	838	92	8
		Kalwan	811	219	28
		Nashik	875		
		Peint	538	145	23
		Sinnar	1,292	53	5
		Surgana	802	262	42
		Trimbakeshwar	889	329	30
		Pune	Ambegaon	987	326
	Bhor		863	318	56
	Haveli		1,203	37	4
	Junnar		1,285	281	32
Khed	1,373		220	22	
Mawal	1,205		511	51	

	Mulshi	957	550	66
	Purandhar	1,049	85	9
	Velhe	556	325	60
Raigarh	Karjat	634	266	45
	Khalapur	395	133	22
	Mahad	796	409	68
	Mangaon	675	238	47
	Poladpur	354	179	36
	Roha	603	383	86
	Sudhagad	444	319	52
Ratnagiri	Chiplun	1,096	428	43
	Khed	1,026	495	74
	Lanja	744	405	47
	Pajapur	1,190	444	48
	Sangameshwar	1,244	626	80
Sangli	Shirala	609	201	24
Satara	Jaoli	831	582	119
	Khandala	488		
	Khatav	1,350		
	Koregaon	877	23	2
	Mahabaleshwar	243	202	40
	Patan	1,312	626	96
	Satara	842	103	25
	Wai	597	108	18
Sindhudurg	Devgad	760	230	21
	Kankavli	792	409	39
	Kudal	834	475	48
	Sawantwadi	842	613	50
	Vaibhavvadi	414	252	34
Thane	Jawhar	663	331	29
	Mokhada	563	291	21
	Murbad	930	475	57
	Shahapur	1,489	911	92
	Vada	801	367	62
Maharashtra Total		55,345	17,340	2159

State	District	Taluka	Taluka Area (km ²)	ESA	No. of Villages with ESA
Karnataka	Belgaum	Bailhongal	1,101		
		Belgaum	1,006	15	1
		Hukkeri	960		
		Khanapur	1,700	857	62
		Savadatti	1,536		
	Chamaraja nagar	Gundlupet	1,377	574	21
		Chikmagalur	1,586	579	27
	Chikmagalur	Koppa	568	251	32
		Mudigere	1,139	571	27
		Narasimharajpura	800	566	35
		Sringeri	445	337	26
		Coorg	Mercara	1,441	963
	Dharwar	Somvarpet	1,013	193	11
		Virajpet	1,661	926	21
		Dharwar	1,095		
	Hassan	Alur	429	2	1
		Belur	842		
		Hassan	927		
		Sakaleshpur	1,021	408	34
	Karwar	Ankola	905	809	43
		Bhatkal	342	185	28
		Honavar	718	561	44
		Joida	1,861	1,835	110
		Karwar	703	628	39
		Kumta	553	374	43
		Siddapur	851	535	107
		Sirsi	1,300	903	125
		Yellapur	1,293	1,168	87
		Mangalore	Belthangadi	1,387	633
	Puttur		1,029	331	11
	Sulya		846	479	18
	Mysore	Heggadadevanakote	1,616	844	62
Shimoga	Hosanagara	1,406	1,069	126	
	Sagar	1,918	1,363	134	
	Shikarpur	901	98	12	
	Shimoga	1,099	477	66	
	Thirthahalli	1,233	853	146	

Udupi	Karkal	1,361	450	13
	Kundapura	1,554	834	24
	Udupi	926		
Karnataka Total		44,448	20,668	1576

State	District	Taluka	Taluka Area (km ²)	ESA	No. of Villages with ESA
Kerala	Ernakulam	Kothamangalam	316		
		Kunnathunad	476		
		Muvattupuzha	449		
	Idukki	Devikulam	1,808	1,808	13
		Peerumade	1,310	1,146	8
		Thodupuzha	888	463	4
		Udumbanchola	1,094	1,094	23
	Kannur	Taliparamba	1,329		
		Thalassery	1,212	304	3
	Kasaragod	Hosdurg	976		
	Kollam	Kottarakkara	571		
		Kunnathur	143		
		Pathanapuram	1,271	942	8
	Kottayam	Kanjirappally	429	51	1
		Meenachil	689	106	3
	Kozhikode	Kozhikode	1,031	234	5
		Quilandy	745	170	2
		Vadakara	580	112	2
	Malappuram	Ernad	816		
		Nilambur	1,383	1,012	10
		Perinthalmanna	511		
		Tirur	418		
	Palakkad	Alathur	578	66	1
		Chittur	1,170	648	3
		Mannarkad	1,226	857	7
		Palakkad	726	272	3
	Pathanamthitta	Adoor	336		
		Kozhenchery	958	616	2
		Ranni	1,097	924	4
	Thiruvananthap*	Nedumangad	957	457	4
		Neyyattinkara	585	165	3
Thrissur	Kodungallur	150			
	Mukundapuram	1,326	708	1	

Wayanad	Mananthavady	749	364	4
	Sulthanbathery	770	301	2
	Vythiri	619	287	7
Kerala Total		29,693	13,108	123

State	District	Taluka	Taluka Area (km ²)	ESA	No. of Villages with ESA	
Tamil Nadu	Coimbatore	Avanashi	656			
		Coimbatore north	525	150	4	
		Coimbatore south	827	140	2	
		Mettupalayam	625	205	10	
		Pollachi	1,168			
		Udumalaipettai	1,460	460	7	
		Valparai	712	528	7	
	Dindigul	Dindigul	1,451	327	5	
		Kodaikanal	1,048	500	9	
		Oddanchatram	782	70	1	
		Palani	711			
	Erode	Dharapuram	1,412			
		Kangeyam	823			
	Kanniyakumari	Agastheeswaram	340	2	1	
		Kalkulam	703	286	4	
		Thovala	325	298	14	
		Vilavancode	378	79	1	
	Madurai	Usilampatti	505			
	The nilgiris	Coonoor	199	18	2	
		Gudalur	472	413	5	
		Kotagiri	400	239	7	
		Kundah	309	233	5	
		Panthalur	268	92	1	
		Udhagamandalam	924	480	5	
	Theni	Andipatti	941	311	1	
		Bodinayakanur	545	263	3	
Periyakulam		392				
Theni		250				
Uthamapalayam		781	167	7		
Tirunelveli	Ambasamudram	1,225	639	5		
	Nanguneri	921	272	2		

	Radhapuram	1,003		
	Sankarankoil	1,058		
	Shenkottai	210	74	5
	Sivagiri	537	187	1
	Tenkasi	519	149	5
Virudhunagar	Rajapalayam	514	126	5
	Sattur	499		
	Srivilliputhur	654	207	11
Tamil Nadu Total		27,069	6,914	135

5.5 Peer Review on delimitation of ESA in Western Ghats region

A 3-member Peer Review Committee consisting of Dr Y.V.N. Krishnamurthy, Director, IIRS (Chairman), Dr V.B. Mathur, Dean, WII and Dr Subhash Ashutos, Professor, IGNTA was constituted by HLWG to review the geospatial analysis carried out by National Remote Sensing Centre (NRSC) for identification of ecologically sensitive areas in the Western Ghats region and also to provide comments on the draft Chapter 4 (Definition and delimitation of Western Ghats Region) and Chapter 5 (Identification of Ecologically Sensitive Areas in the Western Ghats region) of the Report of HLWG.

The Committee met on 4 April 2013 at the Indian Institute of Remote Sensing, Dehradun. The meeting was also attended by other experts of IIRS in areas of geospatial analysis, forestry and ecology – Dr S.K. Srivastav, Dr S.P.S. Kushwaha and Dr Sarnam Singh. Dr C.S. Jha and Shri G. Rajasekhar from NRSC presented the databases utilized and methodology adopted in identifying the Ecologically Sensitive Areas (ESAs) in the Western Ghats region.

Based on the discussions held in the meeting and information presented in Chapter 5, the Committee made the following comments (Appendix 1):

“It is noted that the primary inputs used for identifying ESAs are taken from DOS-DBT project on “Biodiversity Characterization at Landscape Level” (BCLL), in which different spatial layers, example vegetation type and

landcover, biological richness, forest fragmentation, etc. were generated on 1:50,000 scale using IRS LISS-III images and ancillary data. These inputs are appropriate for identifying the ESAs as they are the best possible seamless datasets available at present with acceptable accuracy. The biological richness and forest fragmentation layers along with population density, village boundary, Protected Area (PA) and World Heritage Site (WHS) maps have been used to identify the ESAs using a suitable decision matrix”.

The effort made by the Task team in carefully collating and analyzing the best possible/available datasets for identifying the ESAs is appreciable. The datasets used are adequate and approach followed for geospatial analysis is technically sound in meeting the objective of identifying the ESAs. Further the large area covered for analysis in limited time frame is also commendable.

The Committee also concluded: **“that the datasets used and methodology followed for geospatial analysis within the given timeframe and resources are adequate for identification of ESAs in the Western Ghats region”.**

However, the Committee also suggested to provide logic for using certain criteria in the analysis such as: (i) the use of population density of <100 per km² as a layer in identifying ESA, (ii) the inclusion of forest fragmentation in biological richness, and (iii) sources of primary and secondary data used in the analysis. They also made some minor corrections in the Chapters 4 and 5 of the Report. These are adequately addressed at appropriate places in Chapters 4 and 5.

The Committee also mentioned that the State Governments: (i) must also ensure protection of wildlife corridors while implementing the programmes for conservation and preservation of ESAs, and (ii) may use forest type map published by Forest Survey of India on 1:50,000 scale for final refinements and prescriptions for conservation of ecological sensitive forest type and rare and threatened endemic species (Appendix 1).

5.6 Conclusions

(i) The total area (1,64,280 km²) under Western Ghats region as defined by HLWG is higher than that reported by WGEEP. The area under ESA (59,940 km²) is about 90% of the total area under natural landscape (68,249 km²); the ESA (including PAs and WHS) constitutes 36.49% of Western Ghats area; The demarcation unit of ESA is the village.

(ii) IRS LISS III derived spatial layers on vegetation type and landscape level indices (with a fine spatial resolution of 24m) were used as the basis for identification of ecologically sensitive areas (ESAs). The LISS-III sensor is a sensor of choice for natural resource management studies at a mapping scale of about 1:50,000. The spectral and spatial resolution of this sensor captures the vegetation types even at small patch size (\approx 1 Ha). Typically this sensor is not used for village/micro level studies; however this sensor was employed for delineation of ecosensitive area because of its compatibility with the scales available for other collateral data and also given the large area to be covered with a consistent time base.

(iii) The landscape indices (biological richness and forest fragmentation), derived from the geospatial analysis of IRS LISS-III satellite data include details on species richness of vegetation, endemism, ecosystem uniqueness, disturbance indicators, adjacency and patch characteristics. This enabled delineation of ESAs in an objective and scientific fashion at a much finer scale with village as a unit and thus paved the way for an actionable and implementable approach for the conservation of ecology and equitable and sustainable development of WG, as envisaged by WGEEP. The model developed in this Report and authenticated by a Peer Review Committee consisting of experts can be replicated elsewhere at the national and regional levels.

(iv) The exclusion of large cultural landscapes enable protection of ecologically sensitive natural landscapes outside PAs and WHS effectively and make them conflict free.

(v) The remote sensing derived vegetation maps are not without limitations. For instance under-story plantations (for eg. cardamom) or naturalized forest

plantations cannot be discriminated. The natural landscape identified, however, are still conservative.

(vi) Wildlife habitats are not explicitly included in the demarcation of ecologically sensitive areas; the forested and natural landscapes are the best available fine resolution and spatially consistent proxies in the absence of high resolution data on faunal distributions. We have added all protected areas and world heritage sites, and the combination of the two data sets account for all habitats. Further, tiger and elephant corridors are also overlaid on ESA.

(vii) The village boundary layer taken from Survey of India and the derived aerial extents are indicative.

(viii) The ESA identified, may be notified by MoEF with development restrictions proposed in Chapter 6.

(ix) It may be noted that PAs and WHSs and Reserve Forest Areas (RFAs) are included in ESAs. These are regulated by the extant provisions of the Indian Forest Act, 1927, Indian Wildlife (Protection) Act, 1922 and the Forest Conservation Act, 1980 and their amendments thereof. Inclusion of these areas under ESA provides additional protection to them.

(x) The State Governments should also ensure consultation with local communities while planning for protection of wildlife corridors.

(xi) The State Governments may also use the recently published forest type map by FSI in 1:50,000 scale for finer refinements and prescriptions for conservation of ecologically sensitive forest types. (*and rare and threatened endemic species*).

(xii) The conclusions on the delineation of ESA presented in the Report are based on the best of the contemporary analytical approaches and latest databases. Therefore, there is high confidence in the details used in the demarcation of ESA in WG region.

CHAPTER 6

The Paradigm for Sustainable and Inclusive Development and the Framework for Governance

6.1 Introduction

The Western Ghats is a biological treasure trove that needs to be protected and regenerated, indeed celebrated for its enormous wealth of endemic species and natural beauty. The analysis of current land-use data, using remote sensing technology at 24-meter resolution, reveals that already close to 60 per cent of the area defined as Western Ghats is under cultural landscape. The cultural landscape – as different from natural landscape – is human dominated land use of settlements, agriculture and plantations (other than forest plantations). Therefore, only 41 per cent of the land area can be currently classified as natural landscape – with different classes of vegetation cover and medium to high biological value.

The biologically rich area, with some measure of contiguity is roughly 37 per cent of the Western Ghats boundary – roughly 60,000 sq km. The HLWG has recommended designation of this identified area as, Ecologically-Sensitive Area (ESA).

The message of this report is serious, alarming and urgent. It is imperative that we protect, manage and regenerate the lands now remaining in the Western Ghats as biologically rich, diverse, natural landscapes. We have reached a threshold, from which we cannot slip further. This has to be the objective of future planning and regulation in this recognized center of biodiversity in our country.

What is also clear is that natural landscapes face unprecedented threats because of development projects and urban growth. HLWG emphasizes a non-tolerance policy with respect to highly interventionist and environmentally damaging activities like mining or polluting industries. The HLWG also proposes to bring specific

recommendations about prohibited activities and those that require high level of scrutiny and assessment before clearance.

HLWG recognizes that the proposed non-permissible activities may not be enough to fully manage the environmental fallout of development. However, it is also clear that management through prohibition and fiat is often detrimental to the interests of the very people and environment policy is aiming to protect. Therefore, we need a balanced and nuanced approach to say no to the most damaging and high impact activities and at the same time working of systems to incentivize environmentally sound development that benefits local livelihoods and economies.

It is important to note that the Western Ghats even in the areas, categorized as natural landscapes, is inhabited. It is not wilderness area, but the habitat of its people, who share the landscape with biological diversity. It is not possible to plan for Western Ghats, only as a fenced-in zone, with no human influence. This is the difference between the natural landscapes of a highly populated country like India, against the wilderness zones of many other countries.

Within the area defined as ESA, there are some 4156 villages. The villages included have 20 per cent of more of ecologically sensitive area within their boundary. The people living in these settlements have undoubtedly built a deep relationship and coexistence with the natural environment. However, these practices need to be supported and incentivized. People living within the rich biodiversity have nurtured nature. They must benefit from conservation. This should be the aim of future programmes.

The area defined as 'cultural' has been deliberately identified and segregated from the 'natural' landscape. This does not mean that these settlements, plantations or agricultural fields do not co-exist on the biological diversity of the natural area or that these areas have an open license to pollute or degrade the environment. It is for

this reason that HLWG proposed to recommend a higher level of scrutiny and monitoring for projects within 10 km of the ESA.

HLWG also recognizes that this cultural landscape is biologically rich. For instance, the coffee plantation areas of Kodagu have high biological diversity in the cultural landscape. The sacred groves of many settlements are scattered and so not detectable through remote sensing. But these groves are the most abiding symbols of people's belief in the protection of nature. HLWG has recommended policies to incentivize these practices so that growth across the Western Ghats can be environmentally sound.

This is the opportunity for the future. The Western Ghats, are recognizably, one of the world richest regions of biodiversity. The economic growth in these regions comes from natural endowment – the water that irrigates the commercial plantations or rich manure that fertilizes the agricultural fields, the forest wealth that brings industry or tourism that generates jobs. The future lies in working on green growth strategies that build on the natural endowment to create a vibrant economy. This Chapter provides prescriptions for sustainable and inclusive development framework for governance in Western Ghats region.

6.2 WGEEP recommendations for sector level planning and their implications

The WGEEP has recommended guidelines for sector-wise activities, which would be permitted in categorized ecologically sensitive area of the region. In this way, regions with the highest ecological sensitivity would have restricted developmental activities – from a total ban on mining to large hydroelectric projects or inter-basin transfer of water and even plantations. The listing is comprehensive and provides an important direction to what will constitute environmentally sound development in this ecologically rich region. The question is how such a development plan will be implemented. Furthermore, it is also important that environmentally sound development should be incentivized and not only practiced through fiat.

It is also clear that this recommendation of the WGEEP has evoked the strongest criticism from many quarters. There is apprehension that this 'blanket prescription' could be detrimental to economy and livelihoods. For instance, the Kodagu coffee growers and planters association made a strong representation to the High Level Working Group that the district should be kept out of the Gadgil committee recommendations. Their argument was that they have a strong tradition of cultivation of coffee, cardamom and other crops. They practice techniques, which protect the soil, recharge groundwater through ponds and use organic manure. Their way of life is not harmful to the environment.

While WGEEP does not contain a specific reference to plantations in Kodagu, the sector wise guidelines stoke fears of selective interpretation and misuse. In this case, WGEEP specifies that in ESZ1/ESZ2 change in land use would not be permitted from forest to non-forest uses or agriculture, except where it is needed for extension of village populations. It also specifies that even on private lands, there will be no monoculture plantation of exotics like eucalyptus and existing plantations should be replaced by planting endemic species. Therefore, even though, there is no detailed description of the ecological problems of coffee, the implication of this recommendation is that all plantations would have to be replaced with natural forests in the foreseeable future. This is clearly unacceptable to the plantation owners.

It is important to consider that environmentally sound development cannot preclude livelihood and economic options for this region. The role of plantations in the local ecology and economy is critical. The answer will not lie in removing these economic options but in providing better incentives to move the plantations towards greener and more sustainable practices. The plantation owners of Kodagu (as well as the entire region) have challenges – labour shortage is growing and they do not get the premium for organic and certified products without expensive

certification. There is also no clear incentive to move towards organic plantations in the domestic market. These issues need to be addressed.

It is also a fact that permit-based regulations are often open for misinterpretation and misuse. A similar issue was raised with the High Level Group on its visit to Maharashtra, when officials explained that there was concern that the WGEEP, if implemented could lead to complete halt of all economic activity. "It would condemn people to live in stone-age". According to them, the guidelines would not allow for any infrastructure development, from renewable energy to inter-basin transfer of water. This would be a problem, they explained, as many regions of the Western Ghats lie in the rain shadow area and need water to be diverted for irrigation and drinking. Clearly, their concern was the impact of the sweeping nature of the recommendations on the region's economy.

It is not possible to design an effective framework for sustainable development based on such an approach. For instance, WGEEP has discussed at length the specific problem of a private windmill project, which was allowed in the Bhimashankar Wildlife Sanctuary. This project was unsanctioned and has had a hugely adverse impact on the rich biodiversity of the sanctuary, which is also home to Maharashtra's state animal, the Malabar Giant Squirrel. The project has led to large-scale erosion and landslides in the area. This observation has led the committee to recommend that there "should be no large scale wind power projects in ESZ1 and projects after cumulative environmental impact assessment in ESZ2 and ESZ3." It is clear that while the Committee has not recommended a blanket ban, the application is open to misinterpretation. It is obvious that the wind energy projects should be brought under the purview of environment and forest clearance (EC and FC)- which is currently not the case. It is also obvious that wind energy projects should not be allowed in ecologically fragile areas, where there is possibility of irreversible damage. Similarly, it is clear that large -scale water diversion projects, which have impacts on the environment and forests, should not be allowed. However, this recommendation should not imply that all water

diversion would be stopped even without any study or scrutiny about the individual project or cumulative impact of the projects.

What particularly concerns the HLWG is that these rules could easily work against the very communities – poor tribal and agriculturists – whose interest WGEEP is working to safeguard. For instance, WGEEP refers to the confusion created because of the rules issued for Ecologically Sensitive Zones (ESZ) near protected areas. It finds that the rule, no artificial lighting will be used in ESZ has been interpreted by forest department to imply that no kerosene or oil lanterns are allowed inside homes located within 10 km of the protected area. “The only fallout of such a programme is that the poor suffer harassment and extortion while the wealthy and powerful successfully flout the regulations”, rightly observes WGEEP. This is what needs to be avoided as far as possible in the regime of management that is implemented for the Western Ghats.

6.3 Sector Level Planning

The HLWG is of the view that the vision of what constitutes environmentally sound and inclusive development is not in dispute. What is in dispute is as follows:

- a. How can environmentally sound growth be promoted – what are the policies needed to encourage development that is inclusive and also sustainable and equitable in this ecologically rich region?
- b. How can the adverse impacts of development projects be rigorously assessed and regulated. What are the institutions of governance that are required to ensure compliance? Should we agree to set up another institution, which will regulate and permit development in the Western Ghats, modeled on the Coastal Zone Authority (as recommended by WGEEP)? Or should the effort be to strengthen the existing institutions and regulations for effective functioning?
- c. How can development be based on decentralized planning and decision-making? In other words, how can local communities including tribals play a

greater role in discussing and deciding on the economic future of the region, which is classified as ecologically sensitive?

HLWG has used high resolution mapping to segregate land use classes in the Western Ghats. This has allowed it to separate the natural landscape from cultural landscape – settlements, commercial plantations and agriculture. The ESA is the presently available medium and high biodiversity region in the Western Ghats. This identified area must be conserved and regenerated and further depletion or degradation must not be allowed. In the Eco-Sensitive Area (ESA), there is a need to maintain integrity of the natural systems. In this region, minimal disturbance will be allowed. It is for this reason that the ESA will not be open to polluting industry, mining or thermal power plants. All other infrastructure development, necessary for the region, will be carefully scrutinized and assessed for cumulative impact and development needs, before clearance.

In this way, HLWG has deviated from WGEEP by not recommending a blanket prescriptive on what constitutes good development, which will be implemented through a prohibitory regime. Instead, HLWG has considered and recommended prohibitory and regulatory regime only for those activities with maximum interventionist and destructive impact on the ecosystem. These activities, as listed below, will be prohibited in the area classified as ESA in this report.

It is our understanding that other economic sectors, such as land use, agriculture or forestry, can best be approached through programmes that provide incentives to change practice. It therefore, recommends that state governments should take into account the need for green growth in the entire Western Ghats during the preparation of regional plans. The regional plan will provide the opportunity to plan for other sectors such as land use, agriculture, water and forestry.

6.4 Development restrictions in ESA

6.4.1 In the area classified as ESA, including its settlements, the following development restrictions will apply:

Mining: Complete ban on mining, quarrying and sand mining in ESA. All current mine areas will be phased out within the next 5 years, or expiry of mining lease, whichever is earlier.

Power/Energy, including hydropower and wind: No thermal power projects will be allowed; hydropower projects must be based on conditions of ecological flow and distance (as provided in section 6.3.2) and will be subject to environment and forest clearance. All projects will require cumulative impact assessments before appraisal.

Industry: All 'Red' category industries will be strictly banned.

Settlements: Building and construction projects of 20,000 sq. m and above will not be allowed. Townships and area development projects will be prohibited.

Other infrastructure and development projects/schemes: Will be subject to environment clearance under Category 'A' projects.

Additional safeguard for forest diversion in ESA: In cases of forest clearance required in ESA, all information of the project, from application stage to approval will be put in the public domain – on the website of MoEF and of the respective forest department of the State. This transparency will add to the scrutiny of the projects, particularly in light of the fact that all information on the ESA will also be in the public domain.

6.4.2 Mining

The mining sector is categorized as 'red' industry and therefore, would be prohibited in the Eco-Sensitive Area of the Western Ghats. It is also clear that this sector has grown without consideration for impacts on the ecology and livelihood

security. The unplanned and unregulated boom in the mining sector have led to protests, which in turn, had resulted in bans and prohibitions in different states. Quarrying and sand mining will also be banned in ESA.

HLWG has received many representations regarding the problems created because of the ban on mining on the availability of laterite stone used for local building purposes in Sindhudurg and Ratnagiri districts of the Western Ghats. HLWG has considered this demand and while it understands the concerns regarding cost of material for housing in this region, it finds that it is unable to make an exception for this material to be mined in ESA. It believes that as the area of ESA has been accurately defined, there will be areas outside which can be used for laterite mining. However, it would recommend that the state government must enforce strictly the guidelines for mining in all cases, including laterite mining.

6.4.3 Power/Energy, including hydropower and wind

Hydroelectric projects, proposed and planned in the forested regions of the Western Ghats have often come in for opposition. It is clear that as much as the country needs hydroelectric power, which is renewable and clean, but it also needs to balance this requirement with the loss of biodiversity in forests and the need for ecological flow in rivers. Both are essential components and policy must determine that these elements are safeguarded. It is also clear that rivers in India play more than just basic ecological functions. These are lifelines for local livelihood, nutrition and water security. The desire to use the river for generating electricity cannot be at the cost of the value of the river. It is this balance that needs to be maintained.

In fact, the potential of hydroelectric power has remained the sole driver for management of the river, particularly in its upper reaches. In the lower reaches, the use of the river for large-scale water diversion projects for irrigation and industrial uses becomes the criterion for development. But these single focus objectives must be enlarged so that the competing – and often the primary needs – can be taken into account at the time of planning and management.

It is also clear that rivers do not know boundaries. Therefore, the conditions for hydropower will be stipulated for the entire Western Ghats and not just for ESA.

HLWG recommends that future hydroelectric projects in the ESA and the entire Western Ghats must only be considered on the basis of the following policies:

- a. Hydropower development must be based on the acceptance of uninterrupted ecological flow at 30 per cent level of the rivers flow in lean seasons till a comprehensive study establishes individual baselines. The 30 per cent ecological flow is mandated in Western Ghats keeping in mind the shorter length of rivers in this region. The compliance with this condition will require rigorous and seasonal data collection in upper reaches of rivers to prepare a hydrological mapping of the basin. It is also clear that this hydrological assessment is critical given the changes in rainfall patterns because of climate change.
- b. Hydropower projects must be considered only after a cumulative impact assessment on the flow pattern of the rivers and forest and biodiversity loss. Currently, individual projects are planned and executed without consideration of these impacts. The Environment Assessment Committees will only consider proposals for individual projects after cumulative impacts have been studied.
- c. Current and future hydropower development in the Western Ghats must be based on clear rules that stipulate distance between projects and that do not allow for over-exploitation of the basin. The minimum distance between projects must be maintained at 3 km in most cases (shorter distance requirement because of the short length of the rivers in Western Ghats as compared to other regions) and not more than 50 per cent of the river basin should be affected at any time. This will require reworking the current projects to provide for optimized energy generation but it is necessary given the need to balance development with ecology.

- d. Better and more balanced planning for hydropower will lead correct tariff of energy, taking into account the cost of raw material of water. Energy costs, world over, take into account the cost of raw material. It is imperative that the current subsidies and distortions in raw material supply for energy are minimized. It is in this context that water, as the raw material for generation of hydropower, must be factored in the project design. The ecological, social and cultural health of the river is a price that cannot be discounted at the time of planning for the feasibility of power.
- e. There is a need to redesign and reevaluate small hydropower projects – below 25 mw as these often have limited impact on energy generation and can lead to huge impacts on ecology. The rationale for small projects must be considered within a policy framework, which provides for mini-grids and local energy distribution.

Thermal power projects are categorized as ‘red’ and therefore would not be permitted in the Eco-Sensitive Area.

However, wind energy projects are allowed, conditional to study of environmental impact. HLWG recommends that wind energy should be included in EIA notification and brought under purview of assessment and clearance. It is only when the impacts are understood and efforts made to mitigate damage – both environmental and social – that this sector can grow.

6.4.4 Industry

Under the Water (Prevention and Control of Pollution) Act 1974 and Air (Prevention and Control of Pollution) Act 1981, all industrial and development projects are categorized as red, orange, green. Industries categorized as red or orange have a high pollution load and environmental impact. In the Eco-Sensitive Area of the Western Ghats, red category industry will be completely prohibited.

As the list of industries categorized as 'orange' includes many activities like food and fruit processing there will not be a complete prohibition on this category. But all efforts should be made to promote industries with low environmental impact. The mandatory Consent to Establish (CTE) given by the State Pollution Control Board under the Water, Air Act and Hazardous Waste Rules before a unit can be established must take into account this condition. The proposed Decision Support and Monitoring Centre for Western Ghats will put on its website all industrial units, which have been granted permission to establish and operate in ESA. In case if there is a breach on regulation cases to the CTE condition stipulated for industries with low environmental impact, MoEF may consider imposing ban on orange category industries in the ESA based on the information provided by the proposed Centre.

6.4.5 Settlements

Under EIA notification 2006, there are two levels of regulations for settlements, to ensure that urban growth is managed and is sustainable:

- building and construction projects above 20,000sq. m and below 1,50,000 sq. m, which are categorized as 'B' and require clearance from the State Environment Impact Assessment Authority (SEIAA).
- township and area development projects with built up area of above 50 ha and above 1,50,000sq. m are categorized as B1 and require detailed environmental impact assessment and clearance from State Environment Impact Assessment Authority (SEIAA).

In the ESA, which is well-defined area, emanating from the natural landscape of the Western Ghats, building and construction projects 20,000sq. m and above will not be allowed. Townships and area development projects will be prohibited. Therefore, only projects, which are not currently under the EIA notification and therefore, not considered to have adverse impacts on the environment, will be permitted.

6.4.6 Infrastructure including transport

There is no doubt infrastructure is critical for economic growth and livelihood security in any region. But the question is how impacts can be mitigated and most importantly, how the infrastructure development can be planned so that it is cognizant of the biodiversity value of the ecosystem. The important requirement is to strengthen the public hearing and environmental assessment procedures so that people's concerns are heeded and there is careful scrutiny of impacts.

It is also important that cumulative impacts of the development projects are considered before moving ahead. HLWG recommends that all proposed infrastructure projects, including transport, must be considered only after cumulative impacts are studied and assessed. All these projects will be considered by the Central government under Category A.

Railway projects do not require EIA clearance. It is also clear that railways, while providing an environmentally sound transport option, can have major implications on wildlife, forests and biodiversity. In the recent past, many incidents of accidents involving wild animals because of railways has come to light. It is clear that future planning for railways must be cognizant of environmental safeguards.

6.4.7 Additional safeguard for forest diversion in ESA

Within the ESA, forest landscapes are a key component. It is clear that forest clearance will need careful scrutiny and assessment to ensure that the area under ESA is not decimated or degraded further. The HLWG has already recommended for development restrictions, in which case, no forest clearance can be given. But there will be other cases, such as infrastructure projects, which will need to be considered for approval.

In all these cases of forest clearance required in ESA, all information of the project, from application stage to approval will be put in the public domain – on the website of MoEF and of the respective forest department of the State. This transparency will

add to the scrutiny of the projects, particularly in light of the fact that all information on the ESA will also be in the public domain.

6.5 Incentivizing green growth in Western Ghats

6.5.1 Forest management for inclusive development

The rich ecological diversity of the Western Ghats is intrinsically linked to the forest wealth of the region. Water security of the region is also linked to the forest wealth. Equally importantly, economic and livelihood options are enjoined to forest wealth. Therefore, the imperative to protect, conserve, regenerate and grow forest wealth in this region cannot be underestimated or undermined. The objective has to be to build an effective framework of governance and management, which will allow for this resource to be both protected as well as sustainably utilized for livelihood security. It is clear that regime for forest management will determine the economic future of the region. This is what needs to be reviewed and reworked.

The Decision Support and Monitoring Centre for Western Ghats should study and suggest policies on the following:

Integrate forest accounts, including measurement of the tangible and intangible benefits into state and national economic assessment. It is time to re-position renewable resources like forests in the economic and development discourse of the country. Today the constituency for the protection of forests is shrinking. This is when the forestlands of India are under huge threat. Over time, the infrastructure imperative will take away forests, which are the last remaining common lands in the country. At the very outset it is important to value benefits derived from forests and to incorporate this into state and national accounts. But this valuation must not stop at carbon storage or other important intangible benefits of forests. It must account for the million reasons why forests play critical roles in the current livelihood support of people.

Improve productivity of forests for economic benefits for local communities. It is important to improve the productivity of forests for economic benefits. The region needs to plant, to harvest and then to build economic value-addition from forests, including minor forest produce. But it is also clear that this 'business' of planting trees that survive cannot be successful without people who live in the forest areas. Currently, India's imports of forest produce are increasing – from pulp to timber; revenues from forests are declining in state budgets. State Government's do not value the forest resource as a natural asset, which can be utilized for economic gains in a sustainable and renewable manner. The diversion of forests for uses, considered to be productive and remunerative, becomes the norm. The objective of working plans in forest areas is to improve economic productivity – from timber to non-timber produce – on a sustainable basis. But most importantly, the income from forests must provide benefits to villages living around the forests. It is important the current rules of timber transit, which do not incentivize forest production on private lands and community forestlands, should be reviewed and revised. The Forest Rights Act has brought welcome changes in the categorization of minor forest produce, including bamboo, and these efforts to build forest-based economies should be promoted.

Compute forest ecosystem services to make payment for standing forests in Eco Sensitive Areas/Zones. The ecosystem service fund should go to villages living around the forests. These local communities are taking the burden of conservation – as declaration of ESA/ESZ is reducing their developmental options. This move will build local support for forest protection and local economies. This will also ensure that forests are demarcated in terms of productive and conservation functions.

At the moment the country has a provision to pay the "net present value" once permission has been given for diversion of forestland to non-forest uses. But there is no payment for standing forests. For the past many years, chief ministers have demanded that they be paid to protect forests. Finally, the 12th Finance

Commission, in 2004, agreed that states must be paid for the maintenance of forests—some Rs 1,000 crore between 2005 and 2010. The amount is not substantial, but the principle was established.

In 2010, the 13th Finance Commission reiterated the need to compensate states and enhanced the allocation to Rs 5,000 crore over the next five years. This must be supported. In addition, the 14th Finance Commission should substantially increase the fund and also consider how local communities living in and around forest areas and ESA/EZA should be allocated money directly.

Compute the hydrological service provided by forests and their livelihood benefits on local communities. Unfortunately, there has been little work done to thoroughly assess the role of forests in provisioning and modulating the hydrological cycle that determines the economic wellbeing of the entire region. Yet, we know that without the forests, economic growth will be severely jeopardized. For instance, the city of Mumbai, gets its water supply from the forested watersheds located over 100-110 km away. The city, which is already water stressed, will be in dire straits, if the forests of Western Ghats, are not protected or regenerated. Currently, the city also does not pay for the ecological cost of conservation of the forests. Similarly, irrigation and hydroelectric projects depend on forests to modulate flows and storage. The fact that the hydrological service is not computed ensures that there is little understanding of the role of forests and the necessity for protection.

6.5.2 Promoting sustainable agriculture

The demarcation of Eco-Sensitive Area has taken care to exclude the cultural landscape – agricultural and plantation areas. This is important, as both activities are critical livelihood and economic mainstays of the region. But agriculture cannot be sustained without forests, which provide nutrients and water. It is in the interests of agriculturists and plantation owners to protect and safeguard biodiversity in and around the forests.

HLWG recommends a focused programme to incentivize growers in the Western Ghats to move towards organic cultivation and to build a unique 'brand' for such premium products in the world market. These practices could be built on the 'Kodagu' coffee type plantation, which make best use of local biodiversity protection in economic activity generation could be incentivized. It would also recommend that different agencies – APEDA, Spice Board, Coffee Board etc – should convene a meeting to discuss and resolve the barriers to organic and sustainable production in the region. APEDA's Tracenet programme, which builds an electronic database of all practicing organic farmers and facilitates certification could be used as the basis for further work in this area.

6.5.3 Ecotourism for local benefits

It is clear that tourism, particularly, after the declaration of portions of the Western Ghats as a world heritage site, can be an important source of livelihood and economic growth in the region. But it is equally clear that tourism industry, if not regulated, can be the cause of environmental degradation. The January 2011 report on Tourism in Forest Areas of Western Ghats equations lists the problems created by unplanned and unregulated tourism and urbanization in the ecologically sensitive region. According to this assessment, tourism has been promoted beyond the carrying capacity of the settlements and has led to scarcity of water, increased sewage and solid waste and forest degradation. Clearly, the way ahead is to promote this important economic activity, but in ways, which mitigate damage.

In order to promote sustainable tourism HLWG would recommend:

- a. Existing regulatory provisions to assess environmental impact of tourism projects must be strengthened: The Forest Conservation Act and the environment impact assessment under the Environment Protection Act allow for careful scrutiny of projects, before clearance. However, these processes have often being bypassed and certainly been weakened because of poor institutional abilities to assess environment; inadequate consultation with local communities and poor monitoring

of the stipulated conditions for environment and forest management. In future, all projects that fall under the Eco-Sensitive Area must be identified as those require extra scrutiny and assessment. All these projects, before assessment and clearance, must be identified as situated in the Eco-Sensitive Area of the Western Ghats and this information must be available prominently on the website of the Central and state ministries.

b. The tourism policy for Eco-Sensitive Area of the Western Ghats must provide local community ownership and benefits: Key State Governments – Karnataka, Kerala, Tamil Nadu – have ecotourism policies to govern the growth of this sector with responsibility to the environment. The MoEF has also recently issued guidelines for State Governments to develop tourism policies around national parks and sanctuaries to promote conservation, which benefits local communities. In the Eco-Sensitive Area of the Western Ghats, policies must actively promote homestead tourism and ensure that there is a substantial cess imposed on large tourist establishments to pay for environmental management of the fragile region and for local community benefits.

c. All tourism hotspots in the Eco-Sensitive Area will be monitored for compliance and assessed in terms of impact. The proposed Decision Support and Monitoring Centre of Western Ghats will monitor these policies annually and all hotspots of tourism will be regularly audited for compliance. The Centre will also develop benchmarks for good tourism – sustainable and equitable – to check performance and take corrective steps.

6.6 UNESCO Heritage tag for Green Development

In 2012, the UNESCO World Heritage Committee declared specified areas comprising 39 serial sites of the Western Ghats as World Heritage sites of outstanding universal value. Under its declaration, it cited that the “significant feature of the Western Ghats is their exceptionally high level of biological diversity

and endemism. This mountain chain is recognized as one of the world's eight 'hottest hotspots' of biological diversity along with Sri Lanka."

The key criterion for the declaration of the Western Ghats as heritage site was endemism. In this biodiversity hotspot 54% of tree species; 65% of amphibian species; 62% of reptile species and 53% of fish species are endemic. In addition, a large number of flagship mammals and ecosystems are found in the Ghats.

The nominated sites include 39 hotspots, including 14 important bird areas and 3 Alliance for Zero Extinction sites and a number of forest reserve areas of high conservation value. The IUCN tasked to evaluate the nomination noted that the submitted maps show a number of disturbed areas – including settlements, artificial reservoirs, plantations and agricultural areas, which do not qualify for heritage status. Based on these observations, in May 2012, months ahead of the final committee meeting, IUCN had recommended that Government of India should revise the nominated area by further refining the boundaries to ensure exclusion of disturbed areas and to enhance contiguity (IUCN, 2012). The Government of India satisfied the World Heritage Committee on the observations of the IUCN, and finally succeeded in getting the UNESCO heritage tag for the 39 serial sites.

The UNESCO Heritage Tag provides global recognition of the enormous natural wealth of the Western Ghats. Countries want the heritage tag because it provides for high tourism value – people all over the world want to visit these areas, which have been classified as outstanding.

But the tag also comes with responsibility. Under the Operational Guidelines to the World Heritage Convention, "the state parties are invited to inform the secretariat of their intention to undertake or to authorize major restorations or new constructions, which may affect the outstanding universal value of the property." In addition, there is a provision for 'reactive monitoring', which is done if there is possibility of deletion of any property from the list.

While granting approval World Heritage Committee of UNESCO-WHC stated that the India would:

1. Take into account the outcomes of scientific studies of institutes specialized in the field, and their recommendations,
2. Ensure proactive tourism management in anticipation of increased future visitation, and to ensure that visitation remains within the capacity of the property,
3. Ensure any proposed infrastructure developments are subject to rigorous prior impact assessments, to determine if they are appropriate, including via reporting to the World Heritage Committee in line with paragraph 172 of the Operational Guidelines to the World Heritage Convention,
4. Establish improved coordination and integration between the components, particularly through the preparation and implementation of an overarching management plan or framework for the serial property as a whole.

The HLWG notes that the UNESCO Heritage tag is an opportunity to build global and domestic recognition of the enormous natural wealth that exists in the Western Ghats. The 39 sites are located across the Western Ghats and distributed across the states (Kerala 19), Karnataka (10), Tamil Nadu (6) and Maharashtra (4). The boundary of the sites, are in most cases, boundaries of the legally demarcated national parks, wildlife sanctuaries, tiger reserves and forest divisions and therefore, already accorded with high level of protection. The Eco-Sensitive Area mapping and demarcation done by HLWG also indicates that all sites are within this area. The state government's should view this development and build a plan to protect, conserve and value the resources and opportunities of the region.

6.7 Incentives to individuals, communities and states

Environmentally sound development cannot preclude livelihood and economic options for this region. While some kinds of economic activities have been banned in the ESA, the model for protecting livelihoods of local people includes:

- (a) Collection and value addition for non-timber forest products with facilities or small establishments for value addition. Collection and transport from within ESAs with local community involvement may need infrastructural and financial support. This activity should be implemented through a network of community based organizations throughout the Western Ghats with S&T support from organizations like DBT, DST and CSIR.
- (b) Eco-tourism as per MoEF guidelines involving local communities as stakeholders as well as making use of the World Heritage tag to which some parts of the Western Ghats now have.

Most of the activities mentioned above will generate household incomes and profit in the long run. In the short run, they may need support, which may be provided to *individuals and communities through the mechanism of “viability gap funding”*.

Furthermore, there is a lack of incentives as there is no payment for standing forests. The fact that forests are a part of the natural capital of the country is not built into current financial arrangements. Estimates of the value of forests in all Western Ghats states exist and should be used appropriately to leverage payment mechanisms.

The HLWG recommends that the Western Ghats States should come together to negotiate for a grant-in aid from the Centre. The financial arrangement should be of the nature of a debt for nature swap. This is a mechanism whereby part of the outstanding debt of a state is swapped for new constructive initiatives by it to protect its natural resources. A part of these payments be retained by the state governments and a part be used to finance local conservation trust funds (as in several countries), which disburse grants to community projects for improving forest productivity and ensuring sustainable forest based livelihoods in ESA.

HLWG recommends that there should be arrangements for Payments for Ecosystem Services accruing from ESA and non-ESA regions within the Western Ghats. For example, hydrological services to urban areas. A direct link between urban and rural local governance bodies will need to be created to enable negotiation between them. Further, a part of the budgets of municipalities be set apart for newer initiatives under this head, with provision of disincentives for non-implementation. The HLWG recommends that individual State Governments pursue such initiatives creating possibilities for a dialogue on this issue between municipalities and relevant panchayats within their states.

There is a need for convergence of rural development and conservation. The greening rural development report of the government has enormous relevance for the Western Ghats. The HLWG notes that the convergence of conservation with rural development is now a part of the government's forward-looking agenda. A recent (December 2012) report from the Ministry of Rural Development asks for funding in development programmes funded through MNREGA and other such programmes to promote activities that conserve water and soil and promote organic agriculture. People also demand for such activities.

However, the pervading understanding of 'economic planning' does not extend to an area based ecological planning. The HLWG perceives and recommends that one way forward is to consider extending Entry 20 (Economic Planning) in the Concurrent List, and introduce an appropriate new entry, say 20A, suitably titled, to ensure that developmental projects and activities are undertaken within an overarching environmental and ecological framework.

The Western Ghats Development Programme (WGDP) cell in the Planning Commission co-ordinates the Program. Major activities covered under WGDP are watershed projects, schemes for livelihood, critical gap filling infrastructure projects like foot / hanging bridge, vented Dams, projects for SCs/STs and upliftment of

tribals and forest based programs. During the 11th plan (2007-12) Rs. 533.59 crores were released to the 5 states (175 talukas) covered under the program.

The strategy evolved for the continuation of the WGDP, in the 12th plan include going beyond the Watershed based development, considering the fragility of the habitat, and development needs of the people i.e. a Watershed + approach – an approach which emphasizes conservation, minimal ecological disturbance, involvement of locals along with Sustainable model of economic development and livelihood generation with enhanced allocation.

After a careful consideration of the strategy proposed, the HLWG recommends the following;

- a) Continuation of the WGD program with an enhanced allocation of Rs. 1000 crores.
- b) Continuation of the special category status to the program i.e. cost sharing of 90:10 Centre and State.
- c) Special dispensation by the 14th Finance Commission for the WG based on Ecologically Sensitive area (ESA) in the states.
- d) Revival and reconstitution of the High level Committee consisting of CM's of the six States, for monitoring the implementation of the recommendations /suggestions of the HLWG and existing legislations and periodically reviewing the status report of the Decision Support and Monitoring Centre for Western Ghats.
- e) Setting up / strengthening of the State WG cell currently functional in the Planning /RD Departments in the states with a mandate to liaise with SPCB, State Department of Forests, SEAC and SBA, and Regional office of the MoEF and service the information and decision support needs of the State Government.

6.8 The Framework for Governance and regulation of ESA

6.8.1 The Eco-Sensitive Area, once identified and demarcated, will need an effective governance framework to ensure that can be protected, regenerated and managed sustainably to meet livelihood needs. We need institutions, which are capable of responding to local concerns and can take timely decisions, to balance people's developmental needs with environmental protection. This, when it is clear that resource management issues are complex, with competing interests and require careful scrutiny and assessment. Furthermore, any system, which is based on a permit and prohibitory regime, needs careful and nuanced decisions, particularly when they impact the poor.

The WGEEP had a specific Terms of Reference to "recommend the modalities for the establishment of Western Ghats Ecology Authority under the EP Act, which will be a professional body to manage the ecology of the region and to ensure its sustainable development with the support of all concerned states." Based on this, the WGEEP recommended a structure, which included a national and state level authorities as well as district ecology committees.

All State governments, who have formally responded to the WGEEP report, have rejected the creation of yet another centralized authority. They have pointed out that the federal system of the country allows states to take decisions and have expressed concern at the attempt to centralize decisions through the creation of this Authority.

HLWG recommends that there is clearly a need to strengthen as well as reform the current system of environmental governance to enhance effectiveness. The HLWG recommends that this be done first before new institutions and authorities are created. Otherwise, the problems of current institutions will continue to weaken decisions in the future as well. Given this situation, HLWG has taken the view that it will recommend a framework for governance and regulation of ESA, which draws on

current regulatory institutions for decision-making, but simultaneously, will strengthen the data monitoring systems and the participation and involvement of local communities in decision-making.

The current environmental management system is either based on a single project-based approach or an area-based approach. Given the scale of interventions and given the urgency for protection and regeneration, HLWG would recommend the need to shift to regional based approaches and cumulative assessments, which determine combined impacts of projects across the region or the river-basin.

6.8.2 Strengthening existing regulatory institutions

It is clear that we need to fix the current institutional system and make it more effective. It is for this reason that HLWG is of the strong opinion that the country must reform and strengthen the current institutions of environmental regulation and management in the country in general and in Western Ghats region in particular.

State Pollution Control Boards:

The State pollution control boards are the foundation of the environmental governance infrastructure. But these institutions lack regular in-service training of personnel, funds, and systems of management that are accountable and transparent. Without attention to these issues of institutional strengthening we cannot move ahead in dealing with the enormous challenges of sustainable resource management and development.

State Forest Departments:

The State Forest Departments of the Western Ghats need to be sensitized towards the importance of biodiversity, ecosystem services and local bioresources. The State frontline staff of Forest Departments needs to be equipped with modern systems of communication and surveillance. Regular in-service training of Forest officials needs to be undertaken in the area of wildlife management.

State Biodiversity Authority:

Establishment of Biodiversity Management Committees (BMC) at the Panchayat level especially in the rich biodiversity areas is a priority. The BMCs so established should take up preparation of Peoples Biodiversity Register in mission mode so as to document local biodiversity, bioresources and traditional knowledge. The BMCs should become a focal point for peoples participation with reference to local ecology and biodiversity. The concerned State Government should provide adequate funds to the State Biodiversity Boards and BMCs.

Environment and Forest Clearance Systems:

Similarly, environment and forest clearance systems both at the Centre and State must be strengthened to deepen the process of public assessment and scrutiny of all projects. In addition, there is an urgent need to build capacity to monitor compliance with conditions set for clearance. The strengthening of monitoring procedures is needed for credible deterrence for non-compliance and for environmental integrity. This agenda is urgent and must get the highest attention.

HLWG recommends that it is important that MoEF should review the functioning of the institutions so that they have necessary powers to ensure compliance. Most importantly, MoEF must direct state governments to complete the process of preparation of zonal plans, with maximum consultation with local people. The ESA mapping should be put in the public domain so that plans are based on current developments, which exist on the ground. It is critical that eco-sensitive area mapping must be sensitive to the livelihood and developmental needs of the poorest. There should be an annual assessment based on the changes in the ESA, which is prepared and presented to the public.

6.8.3 Decision Support and Monitoring Centre for Western Ghats

The HLWG recommends for setting up a “Decision Support and Monitoring Centre” for Western Ghats as a part of Governance of the region. The details on the proposed Centre are given in Chapter 7.

6.8.4 Conclusions

To sum up, the HLWG recommends the following:

1. The Central government should immediately notify the ESA area, as demarcated by HLWG in public interest. It must be noted that there is an urgency to protect and safeguard the remaining biodiversity rich areas of Western Ghats. In 2011, recognizing this imperative, the Central government had set up the Western Ghats Ecology Expert Panel under Professor Madhav Gadgil to recommend how this can be done. The Panel in its deliberations spread over 18 months had large number of public consultations across the different states of the Western Ghats. It recommended the need for effective action to protect the region.
2. The HLWG has also had a number of consultations, particularly with state governments and their agencies. After extensive deliberations and efforts to determine the ESA, it has been found that the natural area of the Western Ghats is 41 per cent and ESA only 37 per cent. The need for action is evident. For this reason, HLWG is recommending for immediate notification, the identified area as ESA. In this notified area, development restrictions as recommended in this report will apply.
3. State Governments will immediately put into place structures for effective enforcement of development restrictions and ensuring sustainable development in ESA. The MoEF will ensure that all projects located in the districts comprising the Western Ghats are required to submit information about distance and proximity to the ESA.
4. The Planning Commission should create a special Western Ghats Sustainable Development Fund, which will be used to promote programmes specifically designed to implement an effective ESA regime and incentivize green growth in the region.

5. The 14th Finance Commission should consider options for ecosystem and other service payments in the Western Ghats as well as allocation of funds to ESA areas. It should also consider how these funds for environmental management would be made available directly to local communities who live in and around Western Ghats ESA.
6. MoEF should set up the Decision Support and Monitoring Centre for Western Ghats, with the mandate to assess and report on the state of ecology of the entire region. The Centre will be hosted by one state and will have joint management of all six states of the Western Ghats. The Centre will have a decision support function in the implementation of ESA. Its reports will be in the public domain.
7. MoEF should put the ESA map in the public domain, which will enable scrutiny and transparency in decisions.
8. All development projects located within 10 kms of the Western Ghats ESA and requiring environment clearance (EC) shall be regulated as per the provisions of the EIA Notification 2006. .
9. The villages falling under ESA will be involved in taking decisions on future projects. All projects will require prior-informed consent and no-objection from the *gram sabha* of the village. The provision for prior informed consent under the Forest Rights Act will also be strictly enforced.

CHAPTER 7

Decision Support and Monitoring Centre for Western Ghats Region

7.1 Introduction

In this chapter, we discuss the rationale for establishing a Decision Support and Monitoring Centre in Western Ghats, to address the multiple dimensions of managing the ecological complexity of Western Ghats landscape. For the sake of completeness we elucidate the broad features of this complex landscape, at the expense of some repetition from earlier chapters.

Western Ghats (WG) are the majestic mountains range that fringes the west coast of India and is one among the seven great mountain ranges in India. It is a unique landscape geologically, biologically and ecologically. The lithology coupled with high rainfall make WG as one of the highly ecologically diversified landscape on earth. WG supports wide range of vegetation types ranging from tropical wet evergreen to grasslands on plateau. It is designated as world's hottest hotspots. The Western Ghats represent unique taxonomic hierarchies, remnant ecosystems and strong endemic associations. The Sholas, Mangroves, Kans, Dry evergreen forests, swamps, reeds and riverine belts etc. represent the unique repositories of diverse genomes. The resource value of this mega diversity center spans from timber-non timber category through wilderness-ecotourism to medicinal-aromatic-food-industrial gene pools. Such luxuriant vegetation compositions have evolved over geological time scale, witnessed various land use practices depending upon the resource demand and ingress of human dimension. This has induced considerable alteration in the Western Ghats biogeography bringing in commercial agriculture, commercial forestry, hydropower, mining and biotic pressures within the forest ecosystems. Mention of human presence and land use practices in WG is found in records >2000 yrs. Trade and cultivation of spices in Malabar and Canara region of WG is due to the unique climatic and ecological setting. This pressure on the WG has been on rise in

modern era. Conservation Planning and Development have often got into conflict due to absence of scientific reliable data base and proper monitoring mechanisms.

7.2 Importance of GeoSpatial Modeling and Analysis

The complexity of a Decision Support and Monitoring Centre arises as the goal calls for an inter-disciplinary understanding of ecological processes in relation to taxonomy, physiology, reproductive biology, conservation biology, forest hydrology, soils as well as socio-economic and climate change dynamics to cite only a few dimensions necessary for a holistic understanding of the natural system. Bringing all the subject experts and the administrators to a common page to have a synoptic understanding of biodiversity and the other ecological settings in the Western Ghats, and the tools through which such processes could be understood is the essence in managing the fragile Western Ghats ecosystem while ensuring economic development to the community at large. The data requirements for such understanding are both of spatial and non-spatial nature and also of various time scales covering multi-thematic domains and terrain characteristics.

This is where the geospatial modeling comes into forefront. This approach integrates the existing geo-databases at relevant scales and in locally meaningful ways to provide informed decision support for adaptive management efforts, linking the ecology, environment and development. Today, it is well recognized globally and in our own country that geospatial technologies provide a viable means to carry out the above monitoring, periodic assessment, and impact analysis which is objective, and replaces the subjectivity from the decision-making process.

7.3 Technology Convergence on Geo-Informatics

Geo-informatics, as it is called, combines the geospatial analysis and modeling, and effectively makes use of the convergence of information and communication technologies, complimenting the efforts on the space and ground segments to provide updated, near-real time information to the decision-makers. Significant

advances made over the past few decades in the geospatial enabling techniques such as satellite-based remote sensing and aerial photography, image processing, Geographical Information System (GIS), Space-based Positioning System like GPS, and photo-grammetry and other cartography services. Further, the advances made due to the advent of disruptive technologies such as internet, location-aware mobile phones, social networking and broadband connectivity as well as development of web portals have made this mechanism widely accessible and affordable as well. Today, with the advances in Cloud Computing with the increasing emphasis on providing 'Geography as a Service', and 'Crowd Sourcing' which ensures active participation from the community through social networks and smart mobile devices, along with the wide availability of Open Source GIS software, geospatial technologies have penetrated all aspects of natural resources, environment management, climate change adaptation studies as well as aspects related to disaster risk reduction. With satellite remote sensing advances reaching to sub-meters with corresponding developments in computational analytical capability to understand relationships among the various processes involved in the interactions of the fragile resources spatially coupled across the landscape, one is in a position to identify scientifically such disturbances, narrowing down the areas to watershed level and even at parcel level appropriately overlaid with administrative units where adaptive management might be most beneficial. For example, due to high relief and terrain complexity, mountainous areas require 3-dimensional information for spatial modeling for management inputs, and it is immensely possible with the type of imaging sensors available from space technology.

7.4 Spatial Decision Support System (SDSS) for Informed Decision-making

Today's technologies in a convergent environment allow spatial information in 2D and 3D, periodically updated, in a seamlessly integrated manner. Such a Spatial Decision Support System (SDSS) with appropriate broadband communication linkages to various stake-holders making available the geo-data bases on the fly, allows the decision-makers to access timely inputs to prioritize efforts and take up

the developmental activities more scientifically without fear of affecting the ecological setting in fragile ecosystems like Western Ghats. It also enables the decision-makers effectively address in a participative manner, the sustainable livelihood concerns, mitigate vulnerability, and helps towards building necessary resilience to the community. In short, it is expected to develop a dynamic, unified scientifically validated knowledge-base which can be accessed by planners, policy makers, conservationists, economists and the social scientists as well as the community itself in their effort to bring in holistic development to Western Ghats. The system also brings the much needed transparency in the decision-making process and thus, helps enhance the confidence of the community in the overall process. The challenge for the scientists and the technologists in developing such an adaptive SDSS is essentially in domesticating the technological advances in such a way that the ultimate delivery system is absolutely user-friendly and less jargonized. The challenge for the administrators is to appreciate the difficulties involved in precise information gathering and effective information sharing in an operational setting involving multiple agencies and stake-holders; and to support such endeavors in all possible manners.

Establishing such a Centre (Fig. 31) would entail among other things:

- Creating a knowledge network comprising of scientific institutions and academia for creating and sharing the scientific knowledge base for conservation and developmental perspective of Western Ghats. The institutions could comprise of NRSC/ISRO, NIO/INCOIS/MoES, SOI/IMD/NCMRWF/IITM/DST, MoEF, CAOS/IISc., State Remote Sensing Centres to name only a few.
- Developing a geospatial data repository and data analytics system with periodic updates. Distributed data centres with broadband connectivity to access the databases on the Cloud with provisions for Crowd Sourcing inputs from community

- Establishing a Spatial Decision Support System (SDSS) using existing and real databases with Open Source Software and validated models. SDSS should provide decision alternatives to enable informed decision-making in consultaion with State Governments, regulatory bodies and implementing agencies.

The different components of the proposed Centre are given in Figure 31.

7.5 Role of the Centre

The Centre will be located within one Western Ghats state, but its mandate will be to assess and monitor changes across the geographical spread of the Ghats. It will provide authoritative, relevant and timely information to governments and to the public about state of environment and ecology of the Western Ghats. The Centre will update and improve upon the current data repository and analysis system to track changes in the ecosystem. The reports of the Centre will be publicly available. The objective of the Centre will be to understand the nature of the challenges that are emerging in this ecologically fragile region, using the best of our scientific and research capabilities. This research must also build upon the traditional knowledge of the region and the unique understanding of its people on how to survive and cope with adverse conditions and build economic futures, which are sustainable.

It will publish an annual report on the state of the ecology of Western Ghats in collaboration with other research institutions and scientists, and it will be placed in the state legislature for discussion and review.

The role of the Centre will be to use the existing and new knowledge to build a vibrant political dialogue in the region as a whole on the need to make shifts in development paradigm, given its particular vulnerabilities. It will do this by facilitating a high-level political dialogue on the Western Ghats, which could be chaired in rotation by different chief ministers of the states and include key

ecologists and researchers. The dialogue will be an important forum to discuss common concerns and ways ahead.

It will also build a repository of all projects in the Western Ghats, including industrial projects and will link with state pollution control boards to build a real time database on monitoring and performance data. Currently, this information is scattered and does not provide for effective decision support systems. The aim will be to network with existing institutions so that changes can be monitored and appropriate decisions taken for mitigating damage.

The Decision Support and Monitoring Centre for Western Ghats will be the decision-support for ensuring the enforcement and regulation of ESA. It will facilitate the process of regional planning; conduct research studies to incentivize green economic growth and set up a monitoring system to track project clearance and monitoring in the ESA.

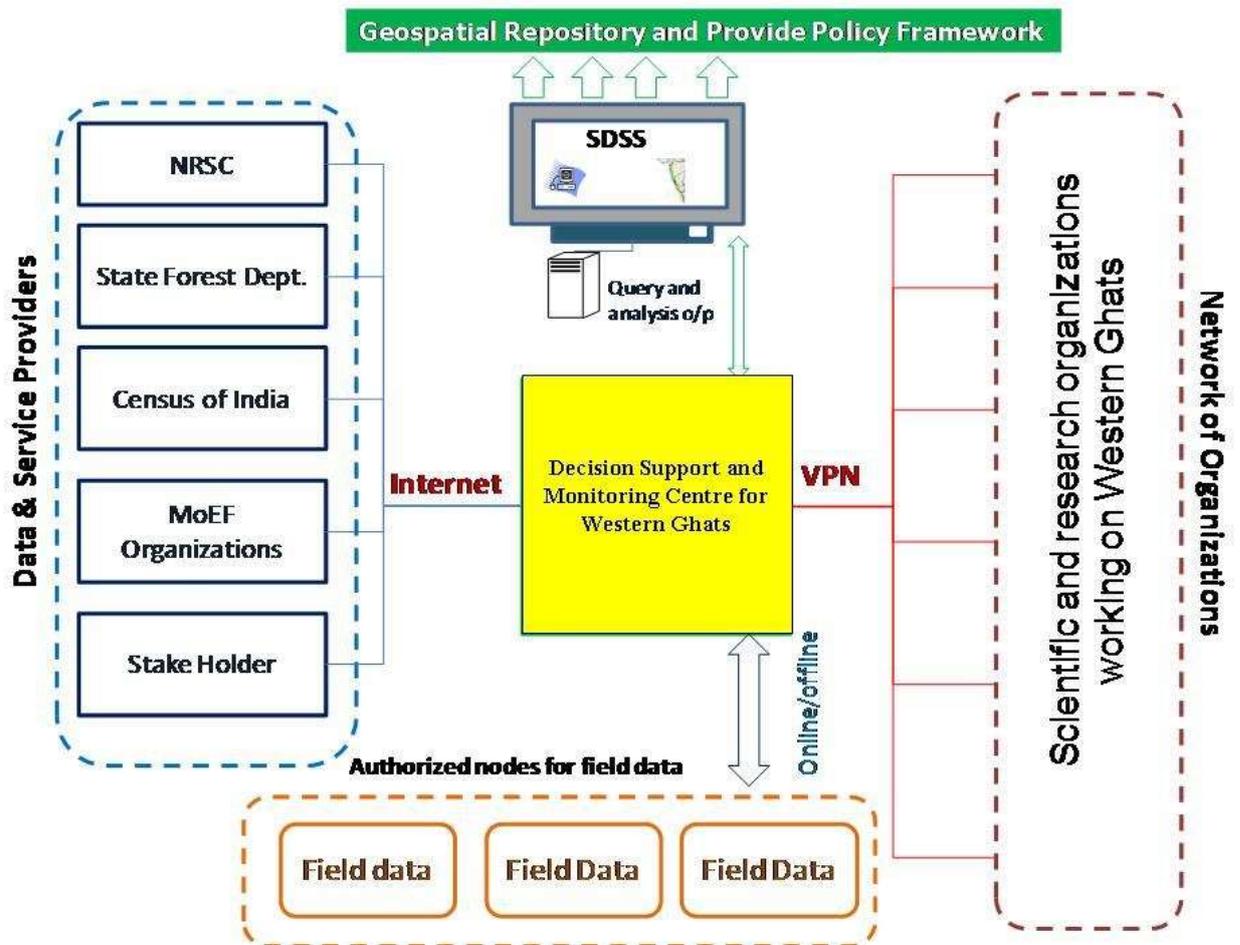


Fig. 31: Components of the Proposed Centre.

CHAPTER 8

Review of Specific Cases

During 2011, MoEF referred four specific cases to the Western Ghats Panel for its observations. These are:

- Athirappilly hydropower project in Western Ghats of Kerala;
- Gundya hydropower project in Western Ghats of Karnataka;
- Moratorium on development projects in Ratnagiri and Sindhudurg District; and
- Mining in Goa

HLWG has reviewed all the four cases, and had extensive discussions and field visits to ascertain the facts. The following are its observations and recommendations.

8.1 Athirappilly Hydropower Project

Kerala State Electricity Board (KSEB) proposed a hydroelectric dam across Chalakudy River in Trichur District to generate 163 MW of power to augment energy requirement of the State and also to provide water for drinking and irrigation. The details of concrete gravity dam are as follows:

- Dam is 23 m in height and 311 m in length.
- Submergible area (water spread area) would be 104 ha.
- Forest area diverted would be 130 ha.
- Water passes through 4.69 km tunnel of 6.4 m diameter from the dam to the power line located northwest of the dam site and above Kannankuzhithodu river into which tailrace water will be emptied and it will join Chalakudy river at a distance of 1.5 km.

The project has been under review for some years now:

- MoEF gave Environmental Clearance (EC) to the project on 20.1.1998 and the project received forest clearance (stage II) on 16.12.1999.
- The High Court suspended the EC, due to procedural irregularities and asked KSEB to conduct public hearing in response to PIL. At the public hearing conducted by KSPCB at Trichur, reliability of EIA prepared by WAPCOS was questioned and was also challenged by Kerala State Biodiversity Board.
- KSEB secured EC again from MoEF with the EIA prepared by WAPCOS. Another PIL was filed in the High Court on the ground that public hearing was not conducted for second modified EIA. The court again questioned the EC issued by MoEF and the court directed KSPCB to conduct public hearing again. At the second public hearing conducted at Chalakudy there was no unanimous decision among the public hearing panel.
- Meanwhile a five member committee of EAC (River valley and Hydroelectric projects) of MoEF visited the site and interacted with local communities and based on the Report submitted by it the MoEF again gave the EC for the project on 18 July 2007.
- Again two PILs were filed against the clearance for the project on the ground that the hydrological data presented in the WAPCOS's EIA are not correct and the impacts of project on ecology and biodiversity are not adequately covered. The court heard the case twice, in 2008 and in 2009 by two Division Benches and the judgment is awaited.

The HLWG along with the officials of Kerala State Electricity Board and Kerala Forest Department visited the Athirappilly Hydropower Project, after hearing the presentations made by Kerala State Electricity Board (KSEB) and also a local NGO (River Research Centre, Trissur). The team visited the dam site, the settlement of Kadar tribes impacted by the dam, rapids and waterfalls and irrigation dam site.

During presentation, the KSEB explained the upstream run of the river hydropower projects - the Sholayar project on the Sholayar river which is tributary of Chalakudy

river, the tail water of which is discharged into downstream that flows into Poringalkuthu project which is on the main river itself, the tail water of which is discharged into downstream of Chalakudy river and is used for the proposed Athirappilly project which is about 40 km away from the backwaters of Cochin. All these projects are run of the river projects and there are no dry stretches of the rivers. If these streams/rivers are not dammed, the excess monsoon run off cannot be stored and enters into sea within 48 hours. The average annual inflow, based on 32 years data at Athirappilly, is 1169.Mm³. This is confirmed from the flow data of Chalakudy river at Arangals collected by Central Water Commission. The tail water from Athirappilly will be released into Chalakudy via its tributary at Kannankuzhithodu.

The fluctuations in the water flow in different months and the plant load factor were also explained. The issues relating to Kadar tribal families living close to the submergible portion of the dam were explained to HLWG and it was informed that a package has been worked out for their welfare without rehabilitation as the areas inhabited by them does not come under submergible zone.

The NGOs, who met with HLWG, brought to its attention that project would have irreversible impact on the rich biodiversity value of the forest; particularly, along stretch of 7.89 km between dam site and the point where the tail race water joins Chalakudy river. They said that the habitat of the Kadar tribal population would be adversely hit and that people had not yet given their consent. In addition, they said that this project, being built in an area of biodiversity value, would have minimal benefits. The technical feasibility of the project was doubtful with meager amount of power obtained at high cost. In addition, plantation owners and farmer representatives located below the proposed project said it would have adverse impacts on downstream irrigation and drinking water.

The HLWG examined the status of forests, including the riparian forests and submergible slope forest, a small swampy area and the plantations. It is clear that as in all hydropower projects, there is a need to balance the need for energy,

particularly peaking power, water supply and irrigation with the loss of biodiversity, forest habitat, displacement of tribal communities and the need for ecological flow in the river.

HLGW, after detailed deliberations on each of the critical issues, is of the view that while the project's importance for meeting the peaking power requirements of the State cannot be disputed, there is still uncertainty about ecological flow available in the riverine stretch, which has a dam at a short distance upstream of the proposed project. Given the increased variability, in flow from catchments due to unpredictable monsoon rains, the project may be reevaluated in terms of the generation of energy and if the plant load factor expected in the project makes it viable against the loss of local populations of some species. Based on this reevaluation and collection of data on ecological flow, the Government of Kerala, could take forward the proposal if it so desires with the Ministry of Environment and Forests.

8.2 Gundy Hydropower Project

The Karnataka Power Corporation Limited (KPCL) has proposed a hydroelectric project in the Gundy River basin in the Hassan and Dakshina Kannada district in two phases: Phase I of 1x 200 MW and Phase II of 1x 200 MW. The project is on Gundy river – a tributary of west flowing river of Netravathi; phase I involves pooling of waters by linking Yettinahole, Kerihole, Hongadhalla and Bettakumari and water from these streams will be intercepted by small weirs and will be drawn through a tunnel running from Yettinahole leading to Bettakumari reservoir. From the foreshore of this reservoir, 7.8 km long head trace tunnel takes water to a surge tank and from there to a underground powerhouse. The Phase II will have two tunnels – one tunnel will take water from Kadumanehalla and surrounding areas by 13 km long unlined tunnel and discharge into tunnel that takes water from Yettinahole weir, and another tunnel of 15 km long will take water from Lingath hole and Kumaradhara to Bettakumari reservoir.

The submergible area will be 184.64 ha. An additional 560 ha will be needed for infrastructure. KPCL is not going ahead with the Hongadhalla dam because of the extensive submergible area of 523.80 ha. The project has got necessary clearances from different regulatory agencies; EAC of MoEF has asked KPCL to conduct also public hearing in Dakshina Kannada District, as project area falls in both the districts. The public hearing was conducted at Siribagiln village of Puttur taluka on 25.03.2009. Meanwhile the Malenadu Janapara Horata Samithi made a representation before the subcommittee of EAC during its visit to the site on 5.12.2009. The EAC has recommended clearance but the MoEF has not issued the environmental clearance.

The land required for the project includes forest area of 113 ha, revenue land of 263.63 ha, which also includes forests (though mostly degraded); and 71.5 ha of private land making it a total of 448.13 ha. The site has unique forest types with high biodiversity values (endemic, rare, threatened and new species) and also the cardamom and coffee plantations with scattered forest patches, which will be impacted adversely by land use changes and changes in hydrological regimes in the river basin due to project.

The major impacts of the project would be: (i) submergence of patches of riparian forest, (ii) land degradation/fragmentation of forest patches for tunneling and road construction; (iii) the drying up of down streams of three Yellinahole (with 60.50 km² catchment area), Kerihole (27.00 km² catchment area), Hongadahalla (8.50 km² catchment area) and Bettakumari (35.00 km² catchment area) before they join Gundya river, although each of them has small catchments, and a stretch of 34 km of Gundya river; and (iv) the apprehension of shortage of water at Subramanya Swami temple.

HWLG notes that the Gundya hydel project is run of the river project, which must ensure ecological flow in the affected stretch of the river. Furthermore, while the area of the submergible portion of forest is small, the construction of the project and

tunneling in the region will have adverse impacts on both government forests and green areas on private land.

As the Gundya hydropower projects is located in the ESA, HLWG recommends that it must be proceeded upon with extreme caution. It would recommend that the Government of Karnataka should reassess the ecological flow in the downstream areas, based on a thorough evaluation of hydrological regimes in the area. The project should not be given the go-ahead, till such a review and reassessment is made. The Government's review must also assess damage to all forests, which will emanate from the construction work and if at all, this can be mitigated. The HWLG has not proposed a complete ban on the construction of hydropower in the ESA, but it's recommended conditions that balance the needs of energy with environment must be followed.

8.3 Moratorium on Development Projects in Ratnagiri and Sindhudurg Districts

MoEF referred the matter regarding developmental trends in Ratnagiri and Sindhudurg Districts of Maharashtra to WGEEP. MoEF also imposed a moratorium on consideration of projects under the EIA Notification 2006 for ToR and/or EC from these two districts vide O.M. dated 12.08.2010. The moratorium, which was initially made applicable till December 2010, has been extended till 30.04.2013.

As per the WGEEP, only portions (eastern parts) of Ratnagiri and Sindhudurg districts of Maharashtra fall within Western Ghats, as both the districts have plains and coasts on the west which do not constitute a part of Western Ghats.

The WGEEP highlighted a number of environmental issues facing both the districts. Some of them are: (i) local isolated incidents of effluent discharge into rivers, (ii) air and water pollution as reported by local individuals, (iii) failure to comply with EC conditions by industries, and (iv) the lapses on the part of State Pollution Control Board, and the State Government of Maharashtra on the implementation of: (a) Acts

relating to rights of tribal people, (b) Zoning Atlases for Siting of Industries, (c) failure to establish Biodiversity Management Committees (BMC), and (d) not involving Gram Panchayats and Panchayat Samitis in decision making, etc.

HLWG noted that the areas under these two districts fall in three categories; area falling under ESA, area falling outside ESA, but within Western Ghats region and the area outside the Western Ghat region.

HLWG recommends that the moratorium imposed should be lifted with the following conditions. As per the recommendations of this report, in the area of these two districts, which has been categorized as ESA, the sectoral restrictions and regulations will apply. In addition, within 10 km of the ESA, , all development projects that require environment clearance will be regulated as per the provisions under EIA Notification, 2006.

In the remaining area, including the area outside ESA but within Western Ghats, environment and forest processes and regulations will continue to apply. However, in order to ensure that such development projects do not adversely impact the environmental balance of the two districts, MoEF should monitor on regular basis the cumulative impact of projects, which may come up in these districts on regular basis and take policy decisions at appropriate time based on these findings.

8.4 Mining in Goa

A number of public interest litigations have been filed against mining in Goa due to its adverse impacts on agriculture, natural drainage, air pollution and damage to protected areas. It was brought to the notice of the HLWG that the Ministry of Mines, Government of India, vide Notification No.S.O.2817(E) dated 22.11.2010, had appointed a Commission of Inquiry consisting of Shri Justice M.B. Shah, retired Judge of the Supreme Court, for the purpose of making an inquiry into mining of iron ore and manganese ore in contravention of the provisions of various statutes and rules and regulations issued thereunder, in various States including the State of Goa. The

Commission has since submitted its inquiry report relating to illegal mining of iron ore and manganese ore in Goa. Ministry of Mines has laid Action Taken Report (ATR) on the recommendations contained in the Shah Commission report in the Parliament on 7 September 2012.

Following this, the State Government of Goa, vide their order dated 10.09.2012, ordered the suspension of mining operations of all mining leases existing in the State until further orders, apparently with a view to scrutinizing the clearances obtained by the mining lease holders.

Subsequently, MoEF decided to scrutinize and examine the details of each of the mining case and take appropriate decision thereon following due procedure. The Shah Commission, in its report, has mentioned various illegalities and irregularities in respect of 139 mining cases in Goa. Pending detailed scrutinize and action on each of these 139 cases, MoEF on 14.9.2012 issued directions under section 5 of the Environment (Protection) Act, 1986 to keep environment clearance in abeyance for all these cases. The project proponents were directed to submit the documents to the Ministry to show the legality of the ECs issued to them.

In the meanwhile on a writ petition filed by the Goa Foundation in the Supreme Court on Shah Commission's report, the Court, vide order dated 5.10.2012 asked CEC to look into the matter and ordered that till further orders, all mining operations in the leases identified in the Shah Commission's report and transportation of iron ore and manganese ore from those lease areas, whether lying at the mine head or stock yards, shall remain suspended. The CEC has submitted an interim report to the Supreme Court on 7.12.2012. The stay on mining operations in Goa continues.

MoEF has constituted a separate Expert Appraisal Committee to examine the documents in respect of each of the aforesaid 139 mine lease cases and make appropriate recommendations to MoEF for consideration. MoEF intends taking

appropriate view in each of these cases subject to the approval of the Supreme Court in view of the pending litigation.

It was also brought to the notice of HLWG that the State Government of Goa is yet to send their proposal to MoEF for notifying Ecologically Sensitive Areas around notified Wildlife Sanctuaries and National Parks in the State. MoEF has also requested the State Government to use high-resolution imagery and maps, to be followed by ground-survey, to establish the distances, to the best accuracy possible, of each of aforesaid 139 mines from the various notified Wildlife Sanctuaries and National Parks and share the information with MoEF. This information is still to be received from the State Government.

HLWG has recommended that there should be a complete ban on mining activity in ESA and that current lease mining areas in ESA would be phased out within 5 years, or at the time of expiry of the mining lease, whichever is earlier. In view of the fact that the matter is pending before the Hon'ble Supreme Court, the HLWG does not find it appropriate to make any recommendation in the matter.

References

- Conservation International. 2013. <http://www.biodiversityhotspots.org/Pages/default.aspx>. Accessed on 07 January 2013.
- Dikshit, K.R. 1981. The Western Ghats: A geomorphic overview. In L.R. Singh's (ed) *New perspectives in Geography 1981*, and in *Memoir Geological Society of India* 47 (1): 159-183. 2001.
- Franklin, J., Davis, F.W., Ikegami, M., Syphard, A.D., Flint, L.E., Flint, A.L. and Hannah, L. 2012. Modeling plant species distributions under future climates: How fine scale do climate projections need to be? *Global Change Biology*, doi: 10.1111/gcb.12051.
- Gunnell, Y. and Radhakrishnan, B.P. 1967. The Western Ghats of the Indian Peninsula: In *Proceedings of the Seminar on Geomorphological Studies in India*, Sagar, and in *Memoir Geological Society of India* 47 (1):133-144. 2001.
- Hamlet, A.F., Mote, P.W., Clark, M.P., Letermaier, D.P. 2007. Twentieth-Century Trends in Runoff, Evapotranspiration, and Soil Moisture in the Western United States. *Journal of Climate* 20: 1468-1486.
- IPCC: 2007. *Climate Change 2007: Synthesis Report*. Contribution of Working Groups I, II and III to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. [Pachauri, R.K. and Reisinger, A. (Eds).] IPCC, Geneva, Switzerland, 104 pp.
- NATCOM. 2012. *India: Second National Communication to the United Nations Framework Convention on Climate Change*. Ministry of Environment and Forests, Government of India, 2012.
- Roy, P.S., Kushwaha, S.P.S., Murthy, M.S.R., Roy, A., Kushwaha, D., Reddy, C.S., Behera, M.D., Mathur, V.B., Padalia, H., Saran, S., Singh, S., Jha, C.S. and Porwal, M.C. 2012. *Biodiversity Characterisation at Landscape Level: National Assessment*, Indian Institute of Remote Sensing, Dehradun, India, pp. 140. ISBN 81-901418-8-0.

Rodgers, W.A. and Panwar, H.S., 1988. *Planning a Wildlife Protected Area Network in India*. Ministry of Environment and Forests and Wildlife, Government of India.

Tewari, D.N. 1995. *Western Ghats Ecosystem*. International Book Distributor, Dehra Dun.

Valdiya, K.S. 2010. Geological Framework and Tectonics of Western Ghats 1-32.

Wadia, D.N. 1975. The Western Ghats in *Geology of India* (ed. IV) and in *Memoir Geological Society of India* 47 (1): 87-88. 2001.

**Peer Review Report on Geospatial Analysis for Identification of
Ecological Sensitive Areas in the Western Ghats Region**

- Based on the D.O. letter no. 1-4/2012-RE dated 26th March 2013 from the Joint Secretary, Ministry of Environment and Forests, Government of India, the following three member committee met on 4th April 2013 at Indian Institute of Remote Sensing (IIRS), Dehradun, to review the geospatial analysis carried out by National Remote Sensing Centre (NRSC) for identification of ecological sensitive areas in the Western Ghats region.

Dr. Y. V. N. Krishna Murthy, Director, IIRS, Dehradun;
Dr. V. B. Mathur, Dean, Wildlife Institute of India (WII), Dehradun;
Dr. Subhash Ashutosh, Professor, Indira Gandhi National Forest Academy (IGNFA), Dehradun.

- The draft report consisting of two chapters (Chapters 4 and 5) were provided to the members prior to the meeting. The committee has gone through the draft report and heard the PowerPoint presentations made by Dr. C. S. Jha and Shri G. Rajasekhar from NRSC on 4th April 2013 at IIRS, Dehradun, about the databases utilized and methodology adopted in identifying the Ecological Sensitive Areas (ESAs) in the Western Ghats. The experts available at IIRS in geospatial analysis and forestry and ecology studies, Dr. S.K. Srivastav, Dr. S.P.S. Kushwaha, and Dr. Sarnam Singh, also participated during the presentation and deliberations.
- The members mainly focused on the chapter dealing with geospatial analysis for 'Identification of ecological sensitive areas in Western Ghats region' (Chapter 5).

It is noted that the primary inputs used for identifying ESAs are taken from DOS-DBT project on 'Biodiversity Characterisation at Landscape Level' (BCLL), in which different spatial layers, e.g. vegetation type and land cover, biological richness, forest fragmentation, etc. were generated on 1:50,000 scale using IRS LISS-III images and ancillary data. These inputs are appropriate for identifying the ESAs as they are the best possible seamless datasets available at present with acceptable accuracy. The *biological richness* and *forest fragmentation* layers along with population density, village boundary, *protected area (PA)* and *world heritage site (WHS)* maps have been used to identify the ESAs using a suitable *decision matrix*.

The effort made by the task team in carefully collating and analysing the best possible/available datasets for identifying the ESAs is appreciable. The datasets used are adequate and approach followed for geospatial analysis is technically

sound in meeting the objective of identifying the ESAs. Further, the large area covered for analysis in the limited time frame is also commendable.

- The following observations are made by the members which may be included/taken care while finalising the report.
 - (i) While the inputs used in the geospatial analysis are adequate and the references of such data sources are provided, it is felt that a clear description of the primary and secondary data sources including the mechanism, accuracies and constraints is needed as they form the basis for the entire analysis. This may be explicitly mentioned in the report as text and table.
 - (ii) For identifying the ESAs, biological richness map and forest fragmentation layer along with population density have been used. While the forest fragmentation layer has been used as one of the several inputs in the geospatial modeling of biological richness, it has also been used again as an independent layer because of its key impact on eco-sensitivity. This point could be highlighted in the report.
 - (iii) The population density of <math><100\text{ persons/km}^2</math> (as per Census, 2001) used as the cut-off for identifying the ESAs in the 'high' biological richness class with 'medium' forest fragmentation, need to be discussed appropriately in the report.
 - (iv) The village boundary layer taken from Survey of India and the derived areal extents are indicative. This needs to be mentioned.
 - (v) While *protected areas* (PAs), *world heritage sites* (WHs) have been considered for identifying the ESAs, a remark may be included in the report that PAs, WHs and *recorded forest areas* (RFAs) are regulated by the extant provisions of the Indian Forest Act, 1927, Indian Wildlife (Protection) Act, 1972, and the Forest Conservation Act, 1980 and their amendments thereof.
 - (vi) The process of identifying the ESAs based on ESZs obtained from geospatial analysis needs to be explained in more detail (chapter 5, page 14, para 5 and 6).
 - (vii) It is observed that the figures, tables and text on rainfall and elevation (based on ASTER DEM) given in Chapter-4 are not used for defining the boundary of the Western Ghats region and hence may be excluded from this chapter.

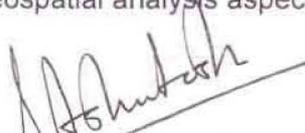
(viii) The inputs used and their sources may also be included in the figures (maps). Other minor suggestions are made in the draft report (two chapters) and have also been discussed with NRSC team during the presentation for appropriate modifications.

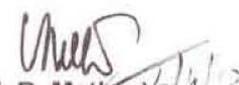
The committee concludes that the datasets used and methodology followed for geospatial analysis within the given timeframe and resources are adequate for identification of ESAs in the Western Ghats region.

The following points may be considered while implementing the programmes for conservation and preservation of ESAs by the respective State Governments.

- (i) As mentioned earlier, ESAs have been identified based on a 'decision matrix' created using biological richness, forest fragmentation, village layer, PAs and WHSs. The members feel that while PAs and WHSs do help in conserving wildlife, conservation of landscape dependent species, such as tiger, needs the corridors and connectivity areas outside the PA and WHS boundaries to be adequately safeguarded. Recently, the Wildlife Institute of India (WII) has published a report providing detailed information and spatial data on corridors and connectivity areas in the context of tiger. These spatial data could be used by the respective state governments to ensure that permeability required for persistence of wild animal populations for perpetuity is taken care.
- (ii) The forest type map recently published by the Forest Survey of India on 1:50,000 scale may also be used by the state governments for finer refinements and prescriptions for conservation of ecologically sensitive forest types and rare and threatened endemic species.
- (iii) A sample of ESAs in the fringe villages identified using geospatial analysis may also be validated.

The members thank the Chairman and Members of the High Level Working Group (HLWG) on Western Ghats for giving us the opportunity to peer review the geospatial analysis aspect in identifying the ESAs in the Western Ghats region.


(Subhash Ashutosh)


(V. B. Mathur) 6/4/13


(Y. V. N. Krishna Murthy) 6/4/2013

Approach for Biodiversity Characterization at Landscape Level

1. Data Inputs

Cloud free IRS 1C, 1D and P6 LISS-III Satellite data (23.5 m spatial resolution) for two season (moist- Oct-Dec; and dry Feb-April) have been used for vegetation type mapping. Topographic maps, Climatic maps, Biogeography maps, Socio-economic data, Management Maps/Stock Maps, and Protected Area Network were also used as additional inputs for the study.

2. Vegetation Type Mapping

The vegetation type mapping was carried out using two season (dry and wet period) satellite images of IRS LISS-III data, based on the phenology of the vegetation cover. On screen digitization was adopted for the vegetation type mapping as the delineation of the finer phenological and type variation was possible. The vegetation types were classified according to their separability on the satellite imagery. Climatic and physiognomy based classification principles were used to develop vegetation classification scheme and broadly fits into the existing Champion and Seth's forest classification scheme followed in the Indian sub continent. Tone and texture of the satellite image were correlated with ground based observation and corresponding image chips were made for reference for on-screen digitization. The biogeography and altitude zone maps are also used to define classes. Wherever necessary, field knowledge was used to delineate the locale specific types of ecological significance.

2.1. Landscape Analysis

2.1.1. Fragmentation

Fragmentation was computed as the number of patches of forest and non-forest types per unit area. The forest type map was reclassified into two classes, i.e., forest and non-forest, resulting in a new spatial data layer. A user grid cell of n (e.g., $n = 500$ m) is convolved with the spatial data layer with a criterion of deriving the number of forest patches within the grid cell. The iteration is repeated by moving the grid cell through the entire spatial layer. An output layer with patch numbers is derived and a look-up table (LUT) associated with this is generated, which keeps the normalized data of the patches per cell in the range from 0 to 10 (IIRS, 2003).

$$Frag = \frac{F + NF}{n} \quad (\text{Eq. 1})$$

where $Frag$ = fragmentation; n = number of patches; F = forest patches; NF = non-forest patches.

4.4. Disturbance Index

Disturbance is a manifestation of the impact of anthropogenic activities and natural disturbance on the landscape change. The disturbance is manifested in

the spatial extent and distribution of the vegetation cover as well as species composition. In this model for generation of disturbance surface, as a first step, Cumulative landscape metric surface is prepared as a combination of different landscape metrics viz., fragmentation, Juxtaposition, Interspersion, Fractal Dimension, contagion etc. In the next step biodiversity driver surface, which reflect the spatial distribution of the anthropogenic/natural forces on the landscape is prepared using disturbance generating factors viz, proximity to roads, villages, fire intensity, shifting cultivation, mines and disturbance indicator parameters (diversity, invasive species, regeneration potential etc.) using ground based sampling data. Using these two surfaces, we run the model to generate the disturbance surface. A user grid cell of nxn (e.g. n=500 m) is convolved with the spatial data layer with a criterion of deriving a specific landscape metric value within the grid cell. The iteration is repeated by moving the grid cell through the entire spatial layer. An output layer with the specific landscape metric value of a parameter is derived and associated to this a look-up table (LUT) is generated which keeps the normalized data of the landscape metric values per cell in the range of 0 to 10.

$$DI = \frac{1}{n} \sum_{i=1}^n (Wt_i \cdot (Frag_i + Por_i + Patc_i + Int_i + Jux_i)) \quad (Eq. 2.2)$$

where DI = Disturbance Index; *Frag* = fragmentation, *Por* = porosity; *Patc* = Patchiness; *Int* = interspersion; *Jux* = juxtaposition; *Wt* = weights.

4.5. Biological richness surface

Biological richness computed as a function of ecosystem uniqueness, species richness, biodiversity value, terrain complexity, and disturbance and depicts the potential for harboring the maximum number of ecologically unique and important species. This helps in assigning conservation priorities to threatened, rare, endemic, and taxonomically distinct species and to different types of habitats or landscape elements on the basis of the richness and significance of threatened species. As a part of this project, the biologically rich areas were spatially identified for the purpose of conservation and saving the existing gene pool from extinction. Since the disturbance index, which is a part of the ecosystem process, is also a function of the biological richness, so the level of stress on the biologically rich areas is also ascertained and adequate remedial measures can be taken while implementing conservation strategies. The biological richness at the landscape level was computed as a function of ecosystem uniqueness, species diversity, biodiversity value, terrain complexity, and Disturbance Index (Roy et al., 2012):

$$BR = \frac{1}{n} \sum_{i=1}^n (Wt_i \cdot (U_i + S_i + B_i + T_i + DI_i)) \quad (Eq. 2.3)$$

where BR = biological richness, DI = Disturbance Index, SR = species richness, BV = biodiversity value, EU = ecosystem uniqueness, and Wt = weights.

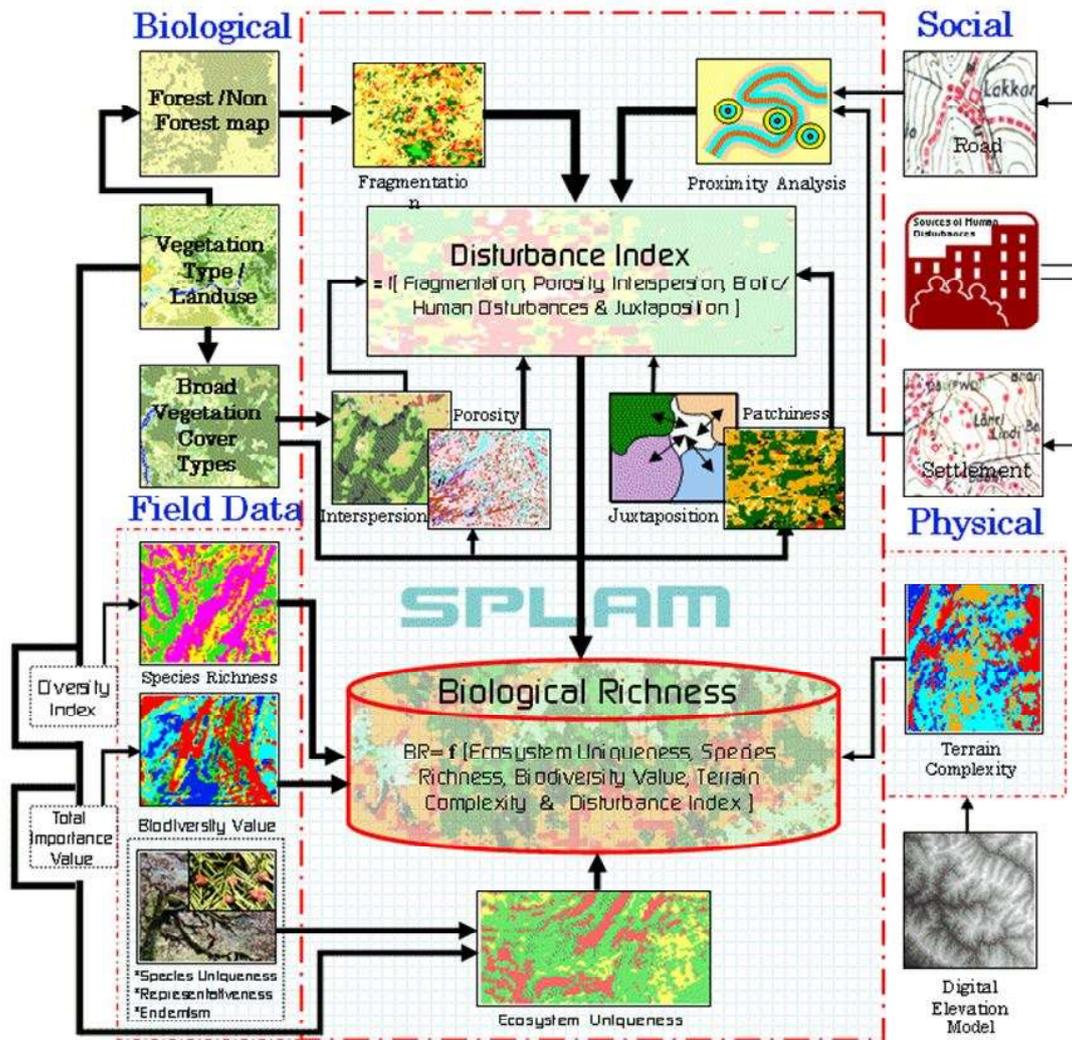


Fig 2: Schematic representation of Spatial Landscape Analysis Modeling (SPLAM) (Roy *et al.*, 2005)

**REPORT OF THE HIGH LEVEL WORKING GROUP
ON
WESTERN GHATS**

Volume II



**Ministry of Environment and Forests
Government of India
15 April 2013**



Cover: Portion of peninsular India showing Western Ghats region depicted using multi spectral image of advanced wide field sensor (AWifs) on board RESOURCESAT-1 as natural color composite

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Volume II of the Report of High Level Working Group contains Appendix 3 dealing with the list of villages in ESA demarcated in Western Ghats Region across Six States. In this Volume, there are also 1 to 8 Annexures cited in the text of Volume 1 of the Report.

Appendix 3: List of Villages in ESA of the Western Ghats

(307 polygons did not have an entry in the name field in the Survey of India layer. These polygons have been named as “—NoName—XXXX” and counted as a village. These names may be finalized in consultation with the State Governments and Survey of India)

SI No	STATE	DIST	TALUK	Village Name
1	GOA	NORTH GOA	SATARI	Anjune
2	GOA	NORTH GOA	SATARI	Shiroli
3	GOA	NORTH GOA	SATARI	Gulle
4	GOA	NORTH GOA	SATARI	Bayalvada
5	GOA	NORTH GOA	SATARI	Pali
6	GOA	NORTH GOA	SATARI	Singna
7	GOA	NORTH GOA	SATARI	Salpi Budruk
8	GOA	NORTH GOA	SATARI	Jarma
9	GOA	NORTH GOA	SATARI	Naneli
10	GOA	NORTH GOA	SATARI	Maloli
11	GOA	NORTH GOA	SATARI	Koparde
12	GOA	NORTH GOA	SATARI	Karambali Bramha
13	GOA	NORTH GOA	SATARI	Hedode
14	GOA	NORTH GOA	SATARI	Uste
15	GOA	NORTH GOA	SATARI	Ambede
16	GOA	NORTH GOA	SATARI	Dongarvada
17	GOA	NORTH GOA	SATARI	Mausi
18	GOA	NORTH GOA	SATARI	Bhuipal
19	GOA	NORTH GOA	SATARI	Bombede
20	GOA	NORTH GOA	SATARI	Veluz
21	GOA	NORTH GOA	SATARI	Sonal
22	GOA	NORTH GOA	SATARI	Kumar Khand
23	GOA	NORTH GOA	SATARI	Valpoy
24	GOA	NORTH GOA	SATARI	Sanvarde
25	GOA	NORTH GOA	SATARI	VELGUE
26	GOA	NORTH GOA	SATARI	HASOLE
27	GOA	NORTH GOA	SATARI	Karambali Buzruk
28	GOA	NORTH GOA	SATARI	BARAJAN
29	GOA	NORTH GOA	SATARI	Panse
30	GOA	NORTH GOA	SATARI	SHELPI KHURD
31	GOA	NORTH GOA	SATARI	BHIRONDE
32	GOA	NORTH GOA	SATARI	KHOTODE
33	GOA	NORTH GOA	SATARI	SIRSODE
34	GOA	NORTH GOA	SATARI	KARANZOL
35	GOA	NORTH GOA	SATARI	AASSODE
36	GOA	NORTH GOA	SATARI	MELAVALI
37	GOA	NORTH GOA	SATARI	Gotiakhadilwada
38	GOA	NORTH GOA	SATARI	AMBELI
39	GOA	NORTH GOA	SATARI	Gavane
40	GOA	NORTH GOA	SATARI	MALPON
41	GOA	NORTH GOA	SATARI	SURLA
42	GOA	NORTH GOA	SATARI	Satre
43	GOA	NORTH GOA	SATARI	GOALI
44	GOA	NORTH GOA	SATARI	Charavade
45	GOA	NORTH GOA	SATARI	IVRE KHURD
46	GOA	NORTH GOA	SATARI	IVRE BUDRUK
47	GOA	NORTH GOA	SATARI	Kelavade
48	GOA	NORTH GOA	SATARI	Rive
49	GOA	NORTH GOA	SATARI	Kodal
50	GOA	NORTH GOA	SATARI	Dongurvada
51	GOA	NORTH GOA	SATARI	Derode
52	GOA	NORTH GOA	SATARI	Vayangani
53	GOA	NORTH GOA	SATARI	Nanode
54	GOA	NORTH GOA	SATARI	GoaNoname1
55	GOA	NORTH GOA	SATARI	Kodal
56	GOA	NORTH GOA	SATARI	Penral
57	GOA	SOUTH GOA	KANKON	Kola
58	GOA	SOUTH GOA	KANKON	Gaundongren
59	GOA	SOUTH GOA	KANKON	Cotigao
60	GOA	SOUTH GOA	KANKON	Poingunin
61	GOA	SOUTH GOA	KANKON	Lolen
62	GOA	SOUTH GOA	SANGUEM	SURLA
63	GOA	SOUTH GOA	SANGUEM	AALOT

SI No	STATE	DIST	TALUK	Village Name
64	GOA	SOUTH GOA	SANGUEM	DARBANDORA
65	GOA	SOUTH GOA	SANGUEM	SANGOD
66	GOA	SOUTH GOA	SANGUEM	SHIGAON
67	GOA	SOUTH GOA	SANGUEM	Kamarkhand
68	GOA	SOUTH GOA	SANGUEM	Kamarkhand
69	GOA	SOUTH GOA	SANGUEM	RUMBREM
70	GOA	SOUTH GOA	SANGUEM	DUDAL
71	GOA	SOUTH GOA	SANGUEM	Salavli
72	GOA	SOUTH GOA	SANGUEM	Kurdi
73	GOA	SOUTH GOA	SANGUEM	Revona
74	GOA	SOUTH GOA	SANGUEM	Kolamba
75	GOA	SOUTH GOA	SANGUEM	Naiquinim
76	GOA	SOUTH GOA	SANGUEM	Digali
77	GOA	SOUTH GOA	SANGUEM	Nune
78	GOA	SOUTH GOA	SANGUEM	SAKVORDE
79	GOA	SOUTH GOA	SANGUEM	MOLEN
80	GOA	SOUTH GOA	SANGUEM	Karanjhol
81	GOA	SOUTH GOA	SANGUEM	KOLEM
82	GOA	SOUTH GOA	SANGUEM	Colem
83	GOA	SOUTH GOA	SANGUEM	Sonauli
84	GOA	SOUTH GOA	SANGUEM	BOMA
85	GOA	SOUTH GOA	SANGUEM	OXEL
86	GOA	SOUTH GOA	SANGUEM	DONGURLI
87	GOA	SOUTH GOA	SANGUEM	MALINGEM
88	GOA	SOUTH GOA	SANGUEM	PATIEM
89	GOA	SOUTH GOA	SANGUEM	Ugem
90	GOA	SOUTH GOA	SANGUEM	Todov
91	GOA	SOUTH GOA	SANGUEM	Potrem
92	GOA	SOUTH GOA	SANGUEM	Vilyan
93	GOA	SOUTH GOA	SANGUEM	Dongar
94	GOA	SOUTH GOA	SANGUEM	Portem
95	GOA	SOUTH GOA	SANGUEM	Netravli
96	GOA	SOUTH GOA	SANGUEM	Verlen
97	GOA	SOUTH GOA	SANGUEM	Bati
98	GOA	SOUTH GOA	SANGUEM	Kumbari
99	GOA	SOUTH GOA	SANGUEM	Sigonem
100	Gujarat	NAVSARI	BANSDA	KALA AMBA
101	Gujarat	NAVSARI	BANSDA	KEVDI
102	Gujarat	NAVSARI	BANSDA	SADAD DEVI
103	Gujarat	NAVSARI	BANSDA	VAGHAI
104	Gujarat	NAVSARI	BANSDA	AMBABARI
105	Gujarat	SURAT	SONGADH	KHOKHSA
106	Gujarat	SURAT	SONGADH	KANJI
107	Gujarat	SURAT	SONGADH	EKVA GOLAN
108	Gujarat	SURAT	SONGADH	MEDHA
109	Gujarat	SURAT	SONGADH	NANA TARPADA
110	Gujarat	SURAT	SONGADH	OJHAR
111	Gujarat	SURAT	SONGADH	BHARADADA
112	Gujarat	SURAT	SONGADH	HINDLA
113	Gujarat	SURAT	SONGADH	KHADI
114	Gujarat	SURAT	SONGADH	TEMKA
115	Gujarat	SURAT	SONGADH	DARDI
116	Gujarat	SURAT	SONGADH	SELJHAR
117	Gujarat	SURAT	SONGADH	KAPAD BANDH
118	Gujarat	SURAT	UCHCHHAL	JHARANPADA
119	Gujarat	SURAT	VYARA	DHOLIA UMAR
120	Gujarat	SURAT	VYARA	CHHEVDI
121	Gujarat	SURAT	VYARA	BHURIVEL
122	Gujarat	SURAT	VYARA	DHAMANDEVI
123	Gujarat	SURAT	VYARA	AMONIA
124	Gujarat	THE DANGS	THE DANGS	BANDHPADA
125	Gujarat	THE DANGS	THE DANGS	GIRMAL
126	Gujarat	THE DANGS	THE DANGS	DHULDA
127	Gujarat	THE DANGS	THE DANGS	KAKARDA
128	Gujarat	THE DANGS	THE DANGS	CHIKHALA(KALIBELSAJA)
129	Gujarat	THE DANGS	THE DANGS	SAWARDAKASAD
130	Gujarat	THE DANGS	THE DANGS	MAHAL
131	Gujarat	THE DANGS	THE DANGS	CHIKAR (JHAVDASAJA)
132	Gujarat	THE DANGS	THE DANGS	JHARI
133	Gujarat	THE DANGS	THE DANGS	WADIWAN

SI No	STATE	DIST	TALUK	Village Name
134	Gujarat	THE DANGS	THE DANGS	CHINCHDHARA
135	Gujarat	THE DANGS	THE DANGS	KARADIAMBA
136	Gujarat	THE DANGS	THE DANGS	MAHARDAR
137	Gujarat	THE DANGS	THE DANGS	MORZIRA
138	Gujarat	THE DANGS	THE DANGS	MADALBARI
139	Gujarat	THE DANGS	THE DANGS	JAVTALA
140	Gujarat	THE DANGS	THE DANGS	CHINCHLI
141	Gujarat	THE DANGS	THE DANGS	RAVCHOND
142	Gujarat	THE DANGS	THE DANGS	ISDAR(BORKHALSAJA)
143	Gujarat	THE DANGS	THE DANGS	KOSAMBIA
144	Gujarat	THE DANGS	THE DANGS	LINGA
145	Gujarat	THE DANGS	THE DANGS	ANJANKUND
146	Gujarat	THE DANGS	THE DANGS	UKHATIYA
147	Gujarat	THE DANGS	THE DANGS	KAMAD
148	Gujarat	THE DANGS	THE DANGS	CHINCHOD
149	Gujarat	THE DANGS	THE DANGS	SINBANDH
150	Gujarat	THE DANGS	THE DANGS	PIPALPADA(GALKUNDSAJA)
151	Gujarat	THE DANGS	THE DANGS	MURAMBI
152	Gujarat	THE DANGS	THE DANGS	PAYARPADA
153	Gujarat	THE DANGS	THE DANGS	WANKI
154	Gujarat	THE DANGS	THE DANGS	AMBALIA
155	Gujarat	THE DANGS	THE DANGS	VANAR
156	Gujarat	THE DANGS	THE DANGS	UMARYA
157	Gujarat	THE DANGS	THE DANGS	JAMDAR
158	Gujarat	THE DANGS	THE DANGS	SAMGAHAN
159	Gujarat	THE DANGS	THE DANGS	KOTAMDAR
160	Gujarat	THE DANGS	THE DANGS	RANPADA
161	Gujarat	THE DANGS	THE DANGS	JOGBARI
162	Gujarat	THE DANGS	THE DANGS	MALEGAON
163	Gujarat	THE DANGS	THE DANGS	BARADPANI
164	Karnataka	BELGAUM	BELGAUM	DHAMNE S.BAILUR
165	Karnataka	BELGAUM	KHANAPUR	CHIGULE
166	Karnataka	BELGAUM	KHANAPUR	BETAGERI
167	Karnataka	BELGAUM	KHANAPUR	MORAB
168	Karnataka	BELGAUM	KHANAPUR	HULAND
169	Karnataka	BELGAUM	KHANAPUR	KANAKUMBI
170	Karnataka	BELGAUM	KHANAPUR	BAILUR
171	Karnataka	BELGAUM	KHANAPUR	GOLYALI
172	Karnataka	BELGAUM	KHANAPUR	UCHAWADE
173	Karnataka	BELGAUM	KHANAPUR	CHORLA
174	Karnataka	BELGAUM	KHANAPUR	BETNE
175	Karnataka	BELGAUM	KHANAPUR	--NoName--283
176	Karnataka	BELGAUM	KHANAPUR	JAMBOTI
177	Karnataka	BELGAUM	KHANAPUR	KALMANI
178	Karnataka	BELGAUM	KHANAPUR	PARWAD
179	Karnataka	BELGAUM	KHANAPUR	GAWASE
180	Karnataka	BELGAUM	KHANAPUR	CHAPOLI
181	Karnataka	BELGAUM	KHANAPUR	Chikhale
182	Karnataka	BELGAUM	KHANAPUR	DAROLI
183	Karnataka	BELGAUM	KHANAPUR	KAPOLI K.CHAPOLI
184	Karnataka	BELGAUM	KHANAPUR	MUGAWADE
185	Karnataka	BELGAUM	KHANAPUR	AMAGAON
186	Karnataka	BELGAUM	KHANAPUR	KABANALI
187	Karnataka	BELGAUM	KHANAPUR	--NoName--301
188	Karnataka	BELGAUM	KHANAPUR	--NoName--302
189	Karnataka	BELGAUM	KHANAPUR	GAVALI
190	Karnataka	BELGAUM	KHANAPUR	NERASE
191	Karnataka	BELGAUM	KHANAPUR	PASTOLI
192	Karnataka	BELGAUM	KHANAPUR	KONGALE
193	Karnataka	BELGAUM	KHANAPUR	MANTURGA
194	Karnataka	BELGAUM	KHANAPUR	KHANAPUR (RURAL)
195	Karnataka	BELGAUM	KHANAPUR	HOLDA
196	Karnataka	BELGAUM	KHANAPUR	TEREGALI
197	Karnataka	BELGAUM	KHANAPUR	JAMAGAON
198	Karnataka	BELGAUM	KHANAPUR	ABANALI
199	Karnataka	BELGAUM	KHANAPUR	Shiroli
200	Karnataka	BELGAUM	KHANAPUR	KELIL
201	Karnataka	BELGAUM	KHANAPUR	Dongargaon
202	Karnataka	BELGAUM	KHANAPUR	MENDIL
203	Karnataka	BELGAUM	KHANAPUR	Degaon

SI No	STATE	DIST	TALUK	Village Name
204	Karnataka	BELGAUM	KHANAPUR	PADALWADI
205	Karnataka	BELGAUM	KHANAPUR	--NoName--317
206	Karnataka	BELGAUM	KHANAPUR	Ambewadi
207	Karnataka	BELGAUM	KHANAPUR	KAMATAGE
208	Karnataka	BELGAUM	KHANAPUR	KIRAWALE (K.G.)
209	Karnataka	BELGAUM	KHANAPUR	--NoName--321
210	Karnataka	BELGAUM	KHANAPUR	GHOSE (B.K.)
211	Karnataka	BELGAUM	KHANAPUR	MOHISET
212	Karnataka	BELGAUM	KHANAPUR	GHOTAGALI
213	Karnataka	BELGAUM	KHANAPUR	SHINDHOLLI (B.K.)
214	Karnataka	BELGAUM	KHANAPUR	SATANALI
215	Karnataka	BELGAUM	KHANAPUR	AKRALI
216	Karnataka	BELGAUM	KHANAPUR	BASTAWAD
217	Karnataka	BELGAUM	KHANAPUR	KODAGAI
218	Karnataka	BELGAUM	KHANAPUR	SULEGALI
219	Karnataka	BELGAUM	KHANAPUR	MUDEWADI
220	Karnataka	BELGAUM	KHANAPUR	--NoName--346
221	Karnataka	BELGAUM	KHANAPUR	TARAWAD
222	Karnataka	BELGAUM	KHANAPUR	--NoName--350
223	Karnataka	BELGAUM	KHANAPUR	SUWATAWADI
224	Karnataka	BELGAUM	KHANAPUR	KUMBARDA
225	Karnataka	BELGAUM	KHANAPUR	GHARLI
226	Karnataka	BELGAUM	KHANAPUR	--NoName--370
227	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	--NoName--1110
228	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	--NoName--1111
229	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	BARAGI
230	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	--NoName--1123
231	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	HONGAHALLI
232	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	CHANNAMALLIPURA
233	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	MADDUR
234	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	BERAMBADI
235	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	BACHAHALLI
236	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	LAKKIPURA
237	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	KALLIPURA
238	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	KUNAGAHALLI
239	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	BERAMBADI STATE FOREST
240	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	HEGGAVADI
241	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	CHIRAKANAHALLI
242	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	KADABUR
243	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	BANDIPURA STATE FOREST
244	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	--NoName--1137
245	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	--NoName--1138
246	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	BANDIPURA
247	Karnataka	CHAMARAJA NAGAR	GUNDLUPET	KANIYANAPURA
248	Karnataka	CHIKMAGALUR	CHIKMAGALUR	MELAGIRI
249	Karnataka	CHIKMAGALUR	CHIKMAGALUR	KESAVINAMANE
250	Karnataka	CHIKMAGALUR	CHIKMAGALUR	HIPLA
251	Karnataka	CHIKMAGALUR	CHIKMAGALUR	HEGGARMATHAVANI
252	Karnataka	CHIKMAGALUR	CHIKMAGALUR	MADLA
253	Karnataka	CHIKMAGALUR	CHIKMAGALUR	ATHIGIRI
254	Karnataka	CHIKMAGALUR	CHIKMAGALUR	MELINAHULUVATHI
255	Karnataka	CHIKMAGALUR	CHIKMAGALUR	KESAVE
256	Karnataka	CHIKMAGALUR	CHIKMAGALUR	SUGUDUVANI
257	Karnataka	CHIKMAGALUR	CHIKMAGALUR	SIRAGOLA
258	Karnataka	CHIKMAGALUR	CHIKMAGALUR	KOLAGAVE
259	Karnataka	CHIKMAGALUR	CHIKMAGALUR	JAGARA
260	Karnataka	CHIKMAGALUR	CHIKMAGALUR	SHIRAVASE
261	Karnataka	CHIKMAGALUR	CHIKMAGALUR	BIDARE
262	Karnataka	CHIKMAGALUR	CHIKMAGALUR	MALAGARU
263	Karnataka	CHIKMAGALUR	CHIKMAGALUR	DATTATHREYAPEETA
264	Karnataka	CHIKMAGALUR	CHIKMAGALUR	CHURCHUGUDDE KAVAL
265	Karnataka	CHIKMAGALUR	CHIKMAGALUR	BOGGASE
266	Karnataka	CHIKMAGALUR	CHIKMAGALUR	BASAPURA
267	Karnataka	CHIKMAGALUR	CHIKMAGALUR	KADAVANTHI
268	Karnataka	CHIKMAGALUR	CHIKMAGALUR	BERANAGODU
269	Karnataka	CHIKMAGALUR	CHIKMAGALUR	HUIGERE
270	Karnataka	CHIKMAGALUR	CHIKMAGALUR	BASARAVALLI
271	Karnataka	CHIKMAGALUR	CHIKMAGALUR	SARAGODU
272	Karnataka	CHIKMAGALUR	CHIKMAGALUR	MANABOOR
273	Karnataka	CHIKMAGALUR	CHIKMAGALUR	--NoName--759

SI No	STATE	DIST	TALUK	Village Name
274	Karnataka	CHIKMAGALUR	CHIKMAGALUR	BIKKARANE
275	Karnataka	CHIKMAGALUR	KOPPA	KELAKULI
276	Karnataka	CHIKMAGALUR	KOPPA	GUNAVANTHE
277	Karnataka	CHIKMAGALUR	KOPPA	HIREKODIGE
278	Karnataka	CHIKMAGALUR	KOPPA	BOLAPURA
279	Karnataka	CHIKMAGALUR	KOPPA	BHANDIGADI
280	Karnataka	CHIKMAGALUR	KOPPA	KESAVE
281	Karnataka	CHIKMAGALUR	KOPPA	KUMBARKOPPA
282	Karnataka	CHIKMAGALUR	KOPPA	DEVARAHALLI
283	Karnataka	CHIKMAGALUR	KOPPA	KAGGA
284	Karnataka	CHIKMAGALUR	KOPPA	HONAGARU
285	Karnataka	CHIKMAGALUR	KOPPA	TALAMAKKI ESTATE
286	Karnataka	CHIKMAGALUR	KOPPA	ADDADA
287	Karnataka	CHIKMAGALUR	KOPPA	NUGGI
288	Karnataka	CHIKMAGALUR	KOPPA	SHANKARAPURA
289	Karnataka	CHIKMAGALUR	KOPPA	HEGGARU
290	Karnataka	CHIKMAGALUR	KOPPA	KUNCHUR
291	Karnataka	CHIKMAGALUR	KOPPA	MARITHOTLU
292	Karnataka	CHIKMAGALUR	KOPPA	BILAGADDE
293	Karnataka	CHIKMAGALUR	KOPPA	--NoName--725
294	Karnataka	CHIKMAGALUR	KOPPA	UDANA
295	Karnataka	CHIKMAGALUR	KOPPA	MACHIKOPPA
296	Karnataka	CHIKMAGALUR	KOPPA	KARIMANE
297	Karnataka	CHIKMAGALUR	KOPPA	BELAWADI
298	Karnataka	CHIKMAGALUR	KOPPA	LOKANATHAPURA
299	Karnataka	CHIKMAGALUR	KOPPA	DAYAMBALLI
300	Karnataka	CHIKMAGALUR	KOPPA	ADIGEBYLU
301	Karnataka	CHIKMAGALUR	KOPPA	HEGGARU
302	Karnataka	CHIKMAGALUR	KOPPA	HULIGARADI
303	Karnataka	CHIKMAGALUR	KOPPA	DEVAGODU
304	Karnataka	CHIKMAGALUR	KOPPA	HARALANE
305	Karnataka	CHIKMAGALUR	KOPPA	MEGUR
306	Karnataka	CHIKMAGALUR	KOPPA	KALLUGUDDE
307	Karnataka	CHIKMAGALUR	MUDIGERE	THANUDI
308	Karnataka	CHIKMAGALUR	MUDIGERE	HORNADU
309	Karnataka	CHIKMAGALUR	MUDIGERE	KALAKODU
310	Karnataka	CHIKMAGALUR	MUDIGERE	SAMSE
311	Karnataka	CHIKMAGALUR	MUDIGERE	IDKANI
312	Karnataka	CHIKMAGALUR	MUDIGERE	KELAGUR
313	Karnataka	CHIKMAGALUR	MUDIGERE	KUNDUR
314	Karnataka	CHIKMAGALUR	MUDIGERE	--NoName--772
315	Karnataka	CHIKMAGALUR	MUDIGERE	DARSHANA
316	Karnataka	CHIKMAGALUR	MUDIGERE	ARAMANE THALAGUR
317	Karnataka	CHIKMAGALUR	MUDIGERE	HEGGODLU
318	Karnataka	CHIKMAGALUR	MUDIGERE	THATKOLA
319	Karnataka	CHIKMAGALUR	MUDIGERE	KENJIGE ESTATE
320	Karnataka	CHIKMAGALUR	MUDIGERE	DURGADAHALLI
321	Karnataka	CHIKMAGALUR	MUDIGERE	MADUGUNDI
322	Karnataka	CHIKMAGALUR	MUDIGERE	--NoName--810
323	Karnataka	CHIKMAGALUR	MUDIGERE	ATTIGERE
324	Karnataka	CHIKMAGALUR	MUDIGERE	TARUVE
325	Karnataka	CHIKMAGALUR	MUDIGERE	BARIMALE ESTATE
326	Karnataka	CHIKMAGALUR	MUDIGERE	KOGILE
327	Karnataka	CHIKMAGALUR	MUDIGERE	GUTTI
328	Karnataka	CHIKMAGALUR	MUDIGERE	MULARAHALLI
329	Karnataka	CHIKMAGALUR	MUDIGERE	URUBAGE
330	Karnataka	CHIKMAGALUR	MUDIGERE	HOSAKERE
331	Karnataka	CHIKMAGALUR	MUDIGERE	BYRAPURA
332	Karnataka	CHIKMAGALUR	MUDIGERE	MEKANAGADDE
333	Karnataka	CHIKMAGALUR	MUDIGERE	BYRAPURA ESTATE
334	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--660
335	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--663
336	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--664
337	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	KONAKERE
338	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--667
339	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	ARAMBALLI
340	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--670
341	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--671
342	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--672
343	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	VITTALA

SI No	STATE	DIST	TALUK	Village Name
344	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--679
345	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--680
346	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--683
347	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	BELLUR
348	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--694
349	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	KONODI
350	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	NANDIGAVE
351	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--704
352	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	ARALIKOPPA
353	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--709
354	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	SANKSE
355	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	BALE
356	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	SALUR
357	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	HEBBE
358	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	SARYA
359	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--713
360	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--715
361	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	HARAVARI
362	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	ALEHALLI
363	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	DAVANA
364	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--724
365	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--726
366	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	MEGARAMAKKI
367	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	--NoName--733
368	Karnataka	CHIKMAGALUR	NARASIMHARAJPURA	HALSUR
369	Karnataka	CHIKMAGALUR	SRINGERI	NEELANDUR
370	Karnataka	CHIKMAGALUR	SRINGERI	--NoName--720
371	Karnataka	CHIKMAGALUR	SRINGERI	KUMBARAGODU
372	Karnataka	CHIKMAGALUR	SRINGERI	MASIGE
373	Karnataka	CHIKMAGALUR	SRINGERI	MEEGA
374	Karnataka	CHIKMAGALUR	SRINGERI	RUSHYASHRINGAPURA (MARKAL)
375	Karnataka	CHIKMAGALUR	SRINGERI	MASIGE
376	Karnataka	CHIKMAGALUR	SRINGERI	YEDADALLI
377	Karnataka	CHIKMAGALUR	SRINGERI	YADADALU
378	Karnataka	CHIKMAGALUR	SRINGERI	BALEKADI
379	Karnataka	CHIKMAGALUR	SRINGERI	NEMMARU
380	Karnataka	CHIKMAGALUR	SRINGERI	GINIKAL
381	Karnataka	CHIKMAGALUR	SRINGERI	KUTHAGODU
382	Karnataka	CHIKMAGALUR	SRINGERI	Kere
383	Karnataka	CHIKMAGALUR	SRINGERI	SUNKADAMAKKI
384	Karnataka	CHIKMAGALUR	SRINGERI	--NoName--741
385	Karnataka	CHIKMAGALUR	SRINGERI	MUDUBA
386	Karnataka	CHIKMAGALUR	SRINGERI	MALANADU
387	Karnataka	CHIKMAGALUR	SRINGERI	Kere
388	Karnataka	CHIKMAGALUR	SRINGERI	NEMMAR ESTATE
389	Karnataka	CHIKMAGALUR	SRINGERI	GULAGANJIMANE
390	Karnataka	CHIKMAGALUR	SRINGERI	HADI
391	Karnataka	CHIKMAGALUR	SRINGERI	MATHUVALLI ESTATE
392	Karnataka	CHIKMAGALUR	SRINGERI	BALAGERE
393	Karnataka	CHIKMAGALUR	SRINGERI	--NoName--751
394	Karnataka	CHIKMAGALUR	SRINGERI	SHEERLU
395	Karnataka	COORG	MERCARA	HAMMIYALA
396	Karnataka	COORG	MERCARA	--NoName--997
397	Karnataka	COORG	MERCARA	MONNANGERI
398	Karnataka	COORG	MERCARA	MUKKODLU
399	Karnataka	COORG	MERCARA	GALIBEDU
400	Karnataka	COORG	MERCARA	SAMPAJE
401	Karnataka	COORG	MERCARA	MELCHEMBU
402	Karnataka	COORG	MERCARA	KARIKE
403	Karnataka	COORG	MERCARA	BHAGAMANDALA
404	Karnataka	COORG	MERCARA	BETTATHUR
405	Karnataka	COORG	MERCARA	MADE
406	Karnataka	COORG	MERCARA	KUNDACHERI
407	Karnataka	COORG	MERCARA	KOPATTI
408	Karnataka	COORG	MERCARA	THANNIMANI
409	Karnataka	COORG	MERCARA	CHERANGALA
410	Karnataka	COORG	MERCARA	KOLAGADALU
411	Karnataka	COORG	MERCARA	SANNAPULIKOTU (NO.2)
412	Karnataka	COORG	MERCARA	AIYANGERI
413	Karnataka	COORG	MERCARA	PEROOR

SI No	STATE	DIST	TALUK	Village Name
414	Karnataka	COORG	MERCARA	NALADI
415	Karnataka	COORG	MERCARA	YEVAKAPADI
416	Karnataka	COORG	MERCARA	CHELAVARA
417	Karnataka	COORG	MERCARA	KARADA
418	Karnataka	COORG	SOMVARPET	KUMARALLI
419	Karnataka	COORG	SOMVARPET	SURLABI
420	Karnataka	COORG	SOMVARPET	MALAMBI FOREST
421	Karnataka	COORG	SOMVARPET	--NoName-996
422	Karnataka	COORG	SOMVARPET	NIDTHA
423	Karnataka	COORG	SOMVARPET	YEDAVANADU FOREST II
424	Karnataka	COORG	SOMVARPET	JAINKALBETTA FOREST
425	Karnataka	COORG	SOMVARPET	YEDAVANADU FOREST II
426	Karnataka	COORG	SOMVARPET	--NoName-999
427	Karnataka	COORG	SOMVARPET	ANEKAD FOREST
428	Karnataka	COORG	SOMVARPET	ATTUR FOREST
429	Karnataka	COORG	VIRAJPET	KARADIGODU
430	Karnataka	COORG	VIRAJPET	MALDARE
431	Karnataka	COORG	VIRAJPET	CHANNAYAN KOTE
432	Karnataka	COORG	VIRAJPET	DEVAMACHI FOREST
433	Karnataka	COORG	VIRAJPET	AREKERI FOREST - I
434	Karnataka	COORG	VIRAJPET	AREKERI FOREST - III
435	Karnataka	COORG	VIRAJPET	KEDAMULLUR
436	Karnataka	COORG	VIRAJPET	PALANGALA
437	Karnataka	COORG	VIRAJPET	AREKERI FOREST - II
438	Karnataka	COORG	VIRAJPET	DEVANUR
439	Karnataka	COORG	VIRAJPET	HEGGALA
440	Karnataka	COORG	VIRAJPET	--NoName-1019
441	Karnataka	COORG	VIRAJPET	KUTTANDI
442	Karnataka	COORG	VIRAJPET	BADAGA
443	Karnataka	COORG	VIRAJPET	BADAGARAKERI
444	Karnataka	COORG	VIRAJPET	PARAKATAGERI
445	Karnataka	COORG	VIRAJPET	NALKERI FOREST
446	Karnataka	COORG	VIRAJPET	THERALU
447	Karnataka	COORG	VIRAJPET	KURCHI
448	Karnataka	COORG	VIRAJPET	KUTTA
449	Karnataka	COORG	VIRAJPET	MANCHALLI & FOREST
450	Karnataka	HASSAN	ALUR	ADIBYLU
451	Karnataka	HASSAN	SAKALESHPUR	ACHANAHALLI
452	Karnataka	HASSAN	SAKALESHPUR	MARAGUNDA
453	Karnataka	HASSAN	SAKALESHPUR	AGANI
454	Karnataka	HASSAN	SAKALESHPUR	--NoName-884
455	Karnataka	HASSAN	SAKALESHPUR	HODACHAHALLI
456	Karnataka	HASSAN	SAKALESHPUR	KADUMANE
457	Karnataka	HASSAN	SAKALESHPUR	DEVIHALLI
458	Karnataka	HASSAN	SAKALESHPUR	KESAGANAHALLI
459	Karnataka	HASSAN	SAKALESHPUR	--NoName-917
460	Karnataka	HASSAN	SAKALESHPUR	--NoName-918
461	Karnataka	HASSAN	SAKALESHPUR	HEGGADDE
462	Karnataka	HASSAN	SAKALESHPUR	ALUVALLI
463	Karnataka	HASSAN	SAKALESHPUR	--NoName-943
464	Karnataka	HASSAN	SAKALESHPUR	KADAGARAVALLI
465	Karnataka	HASSAN	SAKALESHPUR	--NoName-946
466	Karnataka	HASSAN	SAKALESHPUR	YADEKUMARI
467	Karnataka	HASSAN	SAKALESHPUR	HONGADAHALLA
468	Karnataka	HASSAN	SAKALESHPUR	BALEHALLA
469	Karnataka	HASSAN	SAKALESHPUR	HOSAHALLI
470	Karnataka	HASSAN	SAKALESHPUR	--NoName-963
471	Karnataka	HASSAN	SAKALESHPUR	JEDIGADDE
472	Karnataka	HASSAN	SAKALESHPUR	BATTEKUMARI
473	Karnataka	HASSAN	SAKALESHPUR	YATHAHALLA
474	Karnataka	HASSAN	SAKALESHPUR	ATHIHALLI
475	Karnataka	HASSAN	SAKALESHPUR	--NoName-968
476	Karnataka	HASSAN	SAKALESHPUR	YARAGALLI
477	Karnataka	HASSAN	SAKALESHPUR	--NoName-970
478	Karnataka	HASSAN	SAKALESHPUR	MARAGATHUR
479	Karnataka	HASSAN	SAKALESHPUR	ARINI
480	Karnataka	HASSAN	SAKALESHPUR	VANAGOOR
481	Karnataka	HASSAN	SAKALESHPUR	MANKANAHALLI
482	Karnataka	HASSAN	SAKALESHPUR	--NoName-976
483	Karnataka	HASSAN	SAKALESHPUR	--NoName-981

SI No	STATE	DIST	TALUK	Village Name
484	Karnataka	HASSAN	SAKALESHPUR	BANAGERE
485	Karnataka	KARWAR	ANKOLA	KODLAGADDE
486	Karnataka	KARWAR	ANKOLA	--NoName--435
487	Karnataka	KARWAR	ANKOLA	SHEVAKAR
488	Karnataka	KARWAR	ANKOLA	KAMGE
489	Karnataka	KARWAR	ANKOLA	LAKKEGULI
490	Karnataka	KARWAR	ANKOLA	MALLANI
491	Karnataka	KARWAR	ANKOLA	--NoName--442
492	Karnataka	KARWAR	ANKOLA	--NoName--444
493	Karnataka	KARWAR	ANKOLA	SUNKSAL
494	Karnataka	KARWAR	ANKOLA	KATTINHAKKAL
495	Karnataka	KARWAR	ANKOLA	--NoName--445
496	Karnataka	KARWAR	ANKOLA	VARILBENA
497	Karnataka	KARWAR	ANKOLA	HALVALLI
498	Karnataka	KARWAR	ANKOLA	SAKALBENA
499	Karnataka	KARWAR	ANKOLA	DONGRI
500	Karnataka	KARWAR	ANKOLA	MARUGADDE
501	Karnataka	KARWAR	ANKOLA	--NoName--450
502	Karnataka	KARWAR	ANKOLA	BERDE
503	Karnataka	KARWAR	ANKOLA	KAMMANI
504	Karnataka	KARWAR	ANKOLA	HEBBUL
505	Karnataka	KARWAR	ANKOLA	HEGGAR
506	Karnataka	KARWAR	ANKOLA	NAVAGADDE
507	Karnataka	KARWAR	ANKOLA	ADLUR
508	Karnataka	KARWAR	ANKOLA	BOGRIBAIL
509	Karnataka	KARWAR	ANKOLA	AGSUR
510	Karnataka	KARWAR	ANKOLA	KUNTGANI
511	Karnataka	KARWAR	ANKOLA	HILLUR
512	Karnataka	KARWAR	ANKOLA	TALGADDE
513	Karnataka	KARWAR	ANKOLA	GULE
514	Karnataka	KARWAR	ANKOLA	MANIGADDE
515	Karnataka	KARWAR	ANKOLA	VASAR KUDRIGE
516	Karnataka	KARWAR	ANKOLA	VARILBENA
517	Karnataka	KARWAR	ANKOLA	SURVE
518	Karnataka	KARWAR	ANKOLA	VASAR KUDRIGE
519	Karnataka	KARWAR	ANKOLA	ACHAVE
520	Karnataka	KARWAR	ANKOLA	MORALLI
521	Karnataka	KARWAR	ANKOLA	KODSANI
522	Karnataka	KARWAR	ANKOLA	SHIRUR
523	Karnataka	KARWAR	ANKOLA	KAREBAIL
524	Karnataka	KARWAR	ANKOLA	KENKANISHIVAPUR
525	Karnataka	KARWAR	ANKOLA	KAREBAIL
526	Karnataka	KARWAR	ANKOLA	BRAHMUR
527	Karnataka	KARWAR	ANKOLA	TAKATGERI
528	Karnataka	KARWAR	BHATKAL	KOPPA
529	Karnataka	KARWAR	BHATKAL	HENJALE
530	Karnataka	KARWAR	BHATKAL	HASARVALLI
531	Karnataka	KARWAR	BHATKAL	BADABAG
532	Karnataka	KARWAR	BHATKAL	AGGA
533	Karnataka	KARWAR	BHATKAL	HUDIL
534	Karnataka	KARWAR	BHATKAL	--NoName--579
535	Karnataka	KARWAR	BHATKAL	--NoName--581
536	Karnataka	KARWAR	BHATKAL	ANTRAVALLI
537	Karnataka	KARWAR	BHATKAL	HALLYANI
538	Karnataka	KARWAR	BHATKAL	KITRE
539	Karnataka	KARWAR	BHATKAL	HADAVALLI
540	Karnataka	KARWAR	BHATKAL	VONI BAGIL
541	Karnataka	KARWAR	BHATKAL	--NoName--587
542	Karnataka	KARWAR	BHATKAL	MARUKERI
543	Karnataka	KARWAR	BHATKAL	KURANDUR
544	Karnataka	KARWAR	BHATKAL	KUNTAVANI
545	Karnataka	KARWAR	BHATKAL	ARAVAKKI
546	Karnataka	KARWAR	BHATKAL	BILURMANE
547	Karnataka	KARWAR	BHATKAL	BESE
548	Karnataka	KARWAR	BHATKAL	--NoName--601
549	Karnataka	KARWAR	BHATKAL	HEJJIL
550	Karnataka	KARWAR	BHATKAL	HALLARI
551	Karnataka	KARWAR	BHATKAL	KEKKOD
552	Karnataka	KARWAR	BHATKAL	BENANDOOD
553	Karnataka	KARWAR	BHATKAL	KAGGUNDI

SI No	STATE	DIST	TALUK	Village Name
554	Karnataka	KARWAR	BHATKAL	Mugali
555	Karnataka	KARWAR	BHATKAL	NUZ
556	Karnataka	KARWAR	HONAVAR	CHANDAVAR
557	Karnataka	KARWAR	HONAVAR	KADNIR
558	Karnataka	KARWAR	HONAVAR	HODKE SHIROOR
559	Karnataka	KARWAR	HONAVAR	HIREBAIL
560	Karnataka	KARWAR	HONAVAR	HOSGOD
561	Karnataka	KARWAR	HONAVAR	SALKOD
562	Karnataka	KARWAR	HONAVAR	NILKOD
563	Karnataka	KARWAR	HONAVAR	--NoName--530
564	Karnataka	KARWAR	HONAVAR	GUNDABALA
565	Karnataka	KARWAR	HONAVAR	MAHIME
566	Karnataka	KARWAR	HONAVAR	TUMBOLLI
567	Karnataka	KARWAR	HONAVAR	HERAVALI
568	Karnataka	KARWAR	HONAVAR	JALWALLI
569	Karnataka	KARWAR	HONAVAR	SARLAGI
570	Karnataka	KARWAR	HONAVAR	HULEGAR
571	Karnataka	KARWAR	HONAVAR	--NoName--539
572	Karnataka	KARWAR	HONAVAR	--NoName--541
573	Karnataka	KARWAR	HONAVAR	--NoName--542
574	Karnataka	KARWAR	HONAVAR	KELGIN-IDGUNJI
575	Karnataka	KARWAR	HONAVAR	UPPONI
576	Karnataka	KARWAR	HONAVAR	GUNAVANTE
577	Karnataka	KARWAR	HONAVAR	NAGARABASTIKERI
578	Karnataka	KARWAR	HONAVAR	HINNUR
579	Karnataka	KARWAR	HONAVAR	BIRANGOD
580	Karnataka	KARWAR	HONAVAR	BEGODI
581	Karnataka	KARWAR	HONAVAR	MAGOD
582	Karnataka	KARWAR	HONAVAR	MELIN-MANNIGE
583	Karnataka	KARWAR	HONAVAR	HADGERI
584	Karnataka	KARWAR	HONAVAR	SHIRKUR
585	Karnataka	KARWAR	HONAVAR	--NoName--551
586	Karnataka	KARWAR	HONAVAR	GUDEMAKKI
587	Karnataka	KARWAR	HONAVAR	ADUKAL
588	Karnataka	KARWAR	HONAVAR	MANKI
589	Karnataka	KARWAR	HONAVAR	KHANDODI
590	Karnataka	KARWAR	HONAVAR	DABBOD
591	Karnataka	KARWAR	HONAVAR	HADIKAL
592	Karnataka	KARWAR	HONAVAR	ADEKEKULI
593	Karnataka	KARWAR	HONAVAR	ASHIKERI
594	Karnataka	KARWAR	HONAVAR	KOTA
595	Karnataka	KARWAR	HONAVAR	TUMBEBEELA
596	Karnataka	KARWAR	HONAVAR	SAMPOLLI
597	Karnataka	KARWAR	HONAVAR	SULEBIL
598	Karnataka	KARWAR	HONAVAR	HERALI
599	Karnataka	KARWAR	HONAVAR	KUCHODI
600	Karnataka	KARWAR	JOIDA	PALADA
601	Karnataka	KARWAR	JOIDA	--NoName--320
602	Karnataka	KARWAR	JOIDA	VIRANJOL
603	Karnataka	KARWAR	JOIDA	AKHETI
604	Karnataka	KARWAR	JOIDA	VATALA
605	Karnataka	KARWAR	JOIDA	--NoName--331
606	Karnataka	KARWAR	JOIDA	--NoName--337
607	Karnataka	KARWAR	JOIDA	PAYASWADI
608	Karnataka	KARWAR	JOIDA	ANAMOD
609	Karnataka	KARWAR	JOIDA	KALAMBULI
610	Karnataka	KARWAR	JOIDA	--NoName--358
611	Karnataka	KARWAR	JOIDA	DURG
612	Karnataka	KARWAR	JOIDA	KONSHET
613	Karnataka	KARWAR	JOIDA	--NoName--360
614	Karnataka	KARWAR	JOIDA	Amshet
615	Karnataka	KARWAR	JOIDA	CHAPOLI (A)
616	Karnataka	KARWAR	JOIDA	KAMRA
617	Karnataka	KARWAR	JOIDA	MIRAS KUMBELI
618	Karnataka	KARWAR	JOIDA	SHINGARGAON
619	Karnataka	KARWAR	JOIDA	--NoName--367
620	Karnataka	KARWAR	JOIDA	ASU
621	Karnataka	KARWAR	JOIDA	Bori
622	Karnataka	KARWAR	JOIDA	IVOLI
623	Karnataka	KARWAR	JOIDA	--NoName--372

SI No	STATE	DIST	TALUK	Village Name
624	Karnataka	KARWAR	JOIDA	BOREGALI
625	Karnataka	KARWAR	JOIDA	TIMBHOLI
626	Karnataka	KARWAR	JOIDA	VAIJAGAON
627	Karnataka	KARWAR	JOIDA	AVEDA
628	Karnataka	KARWAR	JOIDA	KASARLE
629	Karnataka	KARWAR	JOIDA	--NoName--379
630	Karnataka	KARWAR	JOIDA	BAMANAWADI
631	Karnataka	KARWAR	JOIDA	Kuveshi
632	Karnataka	KARWAR	JOIDA	KUMBRAL
633	Karnataka	KARWAR	JOIDA	DONSHET
634	Karnataka	KARWAR	JOIDA	VARANDE
635	Karnataka	KARWAR	JOIDA	PUSHELI
636	Karnataka	KARWAR	JOIDA	BANDODA
637	Karnataka	KARWAR	JOIDA	--NoName--383
638	Karnataka	KARWAR	JOIDA	--NoName--384
639	Karnataka	KARWAR	JOIDA	--NoName--385
640	Karnataka	KARWAR	JOIDA	VAINI
641	Karnataka	KARWAR	JOIDA	JAGALBET
642	Karnataka	KARWAR	JOIDA	USODA
643	Karnataka	KARWAR	JOIDA	--NoName--388
644	Karnataka	KARWAR	JOIDA	ASULLI
645	Karnataka	KARWAR	JOIDA	PISOSE
646	Karnataka	KARWAR	JOIDA	--NoName--389
647	Karnataka	KARWAR	JOIDA	--NoName--390
648	Karnataka	KARWAR	JOIDA	KONDA (HALIYAL)
649	Karnataka	KARWAR	JOIDA	VIRAL
650	Karnataka	KARWAR	JOIDA	--NoName--393
651	Karnataka	KARWAR	JOIDA	--NoName--394
652	Karnataka	KARWAR	JOIDA	MAVALINGE
653	Karnataka	KARWAR	JOIDA	BADGUND
654	Karnataka	KARWAR	JOIDA	--NoName--396
655	Karnataka	KARWAR	JOIDA	--NoName--397
656	Karnataka	KARWAR	JOIDA	--NoName--398
657	Karnataka	KARWAR	JOIDA	DIGGI
658	Karnataka	KARWAR	JOIDA	--NoName--399
659	Karnataka	KARWAR	JOIDA	VIRNOLI
660	Karnataka	KARWAR	JOIDA	BAPELI
661	Karnataka	KARWAR	JOIDA	--NoName--401
662	Karnataka	KARWAR	JOIDA	PANJELI
663	Karnataka	KARWAR	JOIDA	--NoName--402
664	Karnataka	KARWAR	JOIDA	TERALI
665	Karnataka	KARWAR	JOIDA	--NoName--403
666	Karnataka	KARWAR	JOIDA	--NoName--404
667	Karnataka	KARWAR	JOIDA	--NoName--405
668	Karnataka	KARWAR	JOIDA	--NoName--406
669	Karnataka	KARWAR	JOIDA	NAGODA
670	Karnataka	KARWAR	JOIDA	--NoName--407
671	Karnataka	KARWAR	JOIDA	--NoName--408
672	Karnataka	KARWAR	JOIDA	CHAPOLI (KALSAI)
673	Karnataka	KARWAR	JOIDA	JOIDA
674	Karnataka	KARWAR	JOIDA	--NoName--409
675	Karnataka	KARWAR	JOIDA	--NoName--411
676	Karnataka	KARWAR	JOIDA	NAGARI
677	Karnataka	KARWAR	JOIDA	CHAPOLI (A)
678	Karnataka	KARWAR	JOIDA	HUDASA
679	Karnataka	KARWAR	JOIDA	--NoName--412
680	Karnataka	KARWAR	JOIDA	KUNDAL
681	Karnataka	KARWAR	JOIDA	--NoName--413
682	Karnataka	KARWAR	JOIDA	--NoName--414
683	Karnataka	KARWAR	JOIDA	--NoName--415
684	Karnataka	KARWAR	JOIDA	--NoName--416
685	Karnataka	KARWAR	JOIDA	KUMBELI
686	Karnataka	KARWAR	JOIDA	TINAI KHAND
687	Karnataka	KARWAR	JOIDA	GODASHET
688	Karnataka	KARWAR	JOIDA	GUND
689	Karnataka	KARWAR	JOIDA	--NoName--418
690	Karnataka	KARWAR	JOIDA	KALASAI
691	Karnataka	KARWAR	JOIDA	NUJJI
692	Karnataka	KARWAR	JOIDA	--NoName--419
693	Karnataka	KARWAR	JOIDA	AMBOLLI

SI No	STATE	DIST	TALUK	Village Name
694	Karnataka	KARWAR	JOIDA	YERAMUKH
695	Karnataka	KARWAR	JOIDA	NIGUNDI
696	Karnataka	KARWAR	JOIDA	Chafer
697	Karnataka	KARWAR	JOIDA	--NoName--420
698	Karnataka	KARWAR	JOIDA	BADPOLI
699	Karnataka	KARWAR	JOIDA	BIDOLI
700	Karnataka	KARWAR	JOIDA	HEBBAL
701	Karnataka	KARWAR	JOIDA	--NoName--422
702	Karnataka	KARWAR	JOIDA	ANASHI
703	Karnataka	KARWAR	JOIDA	TULASGERI
704	Karnataka	KARWAR	JOIDA	Shivapur
705	Karnataka	KARWAR	JOIDA	ULAVI
706	Karnataka	KARWAR	JOIDA	--NoName--425
707	Karnataka	KARWAR	JOIDA	--NoName--426
708	Karnataka	KARWAR	JOIDA	BIRKHOL
709	Karnataka	KARWAR	JOIDA	--NoName--428
710	Karnataka	KARWAR	KARWAR	LANDE
711	Karnataka	KARWAR	KARWAR	--NoName--421
712	Karnataka	KARWAR	KARWAR	GOYAR
713	Karnataka	KARWAR	KARWAR	GOTEGALI
714	Karnataka	KARWAR	KARWAR	MAIGINI
715	Karnataka	KARWAR	KARWAR	BALEMANE
716	Karnataka	KARWAR	KARWAR	BHAIRE
717	Karnataka	KARWAR	KARWAR	KADRA
718	Karnataka	KARWAR	KARWAR	GOPASHITTA
719	Karnataka	KARWAR	KARWAR	HANKON
720	Karnataka	KARWAR	KARWAR	MUDGERI
721	Karnataka	KARWAR	KARWAR	HOTEGALI
722	Karnataka	KARWAR	KARWAR	DEVAKAR
723	Karnataka	KARWAR	KARWAR	ARAV
724	Karnataka	KARWAR	KARWAR	SAWANTWADA
725	Karnataka	KARWAR	KARWAR	MALLAPUR
726	Karnataka	KARWAR	KARWAR	VIRJE
727	Karnataka	KARWAR	KARWAR	KERWADI \\\
728	Karnataka	KARWAR	KARWAR	KUCHEGAR
729	Karnataka	KARWAR	KARWAR	KADIYE
730	Karnataka	KARWAR	KARWAR	KAIGA
731	Karnataka	KARWAR	KARWAR	DEVALMAKKI
732	Karnataka	KARWAR	KARWAR	SHIRVE
733	Karnataka	KARWAR	KARWAR	NIVLI
734	Karnataka	KARWAR	KARWAR	HARTUGA
735	Karnataka	KARWAR	KARWAR	SIDDAR
736	Karnataka	KARWAR	KARWAR	Kadwad
737	Karnataka	KARWAR	KARWAR	BARGAL
738	Karnataka	KARWAR	KARWAR	NIVLI
739	Karnataka	KARWAR	KARWAR	BELUR
740	Karnataka	KARWAR	KARWAR	NAGEKOVE
741	Karnataka	KARWAR	KARWAR	SHIRWAD
742	Karnataka	KARWAR	KARWAR	TODUR
743	Karnataka	KARWAR	KARWAR	--NoName--440
744	Karnataka	KARWAR	KARWAR	--NoName--441
745	Karnataka	KARWAR	KARWAR	CHENDIYE
746	Karnataka	KARWAR	KARWAR	ARGA
747	Karnataka	KARWAR	KARWAR	AMADALLI
748	Karnataka	KARWAR	KARWAR	--NoName--446
749	Karnataka	KARWAR	KUMTA	HEGLE
750	Karnataka	KARWAR	KUMTA	YANA
751	Karnataka	KARWAR	KUMTA	KADKOD
752	Karnataka	KARWAR	KUMTA	KOLIMANJAGUNI
753	Karnataka	KARWAR	KUMTA	SANDOLLI-MUTTOLLI
754	Karnataka	KARWAR	KUMTA	--NoName--483
755	Karnataka	KARWAR	KUMTA	KURIGADDE
756	Karnataka	KARWAR	KUMTA	MUGVEKANVADI
757	Karnataka	KARWAR	KUMTA	YELAVALLI
758	Karnataka	KARWAR	KUMTA	--NoName--487
759	Karnataka	KARWAR	KUMTA	ANEGUNDI
760	Karnataka	KARWAR	KUMTA	YEDATARE
761	Karnataka	KARWAR	KUMTA	YATTINABAIL
762	Karnataka	KARWAR	KUMTA	HEBBAIL
763	Karnataka	KARWAR	KUMTA	ALKOD

SI No	STATE	DIST	TALUK	Village Name
764	Karnataka	KARWAR	KUMTA	NILKOD
765	Karnataka	KARWAR	KUMTA	ANEGUNDI
766	Karnataka	KARWAR	KUMTA	ANTRAVALLI
767	Karnataka	KARWAR	KUMTA	SANTUR
768	Karnataka	KARWAR	KUMTA	--NoName--496
769	Karnataka	KARWAR	KUMTA	KANAKALE
770	Karnataka	KARWAR	KUMTA	MALWALLI
771	Karnataka	KARWAR	KUMTA	KAVALODI
772	Karnataka	KARWAR	KUMTA	KALVE
773	Karnataka	KARWAR	KUMTA	SHIRGUNJI
774	Karnataka	KARWAR	KUMTA	MORSE
775	Karnataka	KARWAR	KUMTA	--NoName--500
776	Karnataka	KARWAR	KUMTA	--NoName--502
777	Karnataka	KARWAR	KUMTA	BANGANE
778	Karnataka	KARWAR	KUMTA	--NoName--508
779	Karnataka	KARWAR	KUMTA	MUDGI
780	Karnataka	KARWAR	KUMTA	HOSAD
781	Karnataka	KARWAR	KUMTA	SOPPINAHOSALLI
782	Karnataka	KARWAR	KUMTA	DIVALLI
783	Karnataka	KARWAR	KUMTA	MUDNALLI
784	Karnataka	KARWAR	KUMTA	BASOLLI
785	Karnataka	KARWAR	KUMTA	MEDINI
786	Karnataka	KARWAR	KUMTA	SANTAGAL
787	Karnataka	KARWAR	KUMTA	HOLANAGADDE
788	Karnataka	KARWAR	KUMTA	ABBOLLI
789	Karnataka	KARWAR	KUMTA	HINDBAIL
790	Karnataka	KARWAR	KUMTA	HARAVALLI
791	Karnataka	KARWAR	KUMTA	ULLURMATH
792	Karnataka	KARWAR	SIDDAPUR	GIRGADDE
793	Karnataka	KARWAR	SIDDAPUR	AREHALLA
794	Karnataka	KARWAR	SIDDAPUR	DEVISAR
795	Karnataka	KARWAR	SIDDAPUR	SHIGEHALLI
796	Karnataka	KARWAR	SIDDAPUR	GHATTIKAI
797	Karnataka	KARWAR	SIDDAPUR	TAGGINBALGAR
798	Karnataka	KARWAR	SIDDAPUR	KELGIN SARKULI
799	Karnataka	KARWAR	SIDDAPUR	--NoName--489
800	Karnataka	KARWAR	SIDDAPUR	--NoName--490
801	Karnataka	KARWAR	SIDDAPUR	MANIGAR
802	Karnataka	KARWAR	SIDDAPUR	UMBALMANE
803	Karnataka	KARWAR	SIDDAPUR	HALLIBAIL
804	Karnataka	KARWAR	SIDDAPUR	KANCHIKAI
805	Karnataka	KARWAR	SIDDAPUR	YELUGAR
806	Karnataka	KARWAR	SIDDAPUR	HALDOT
807	Karnataka	KARWAR	SIDDAPUR	BALEKAI
808	Karnataka	KARWAR	SIDDAPUR	GOLGOD
809	Karnataka	KARWAR	SIDDAPUR	--NoName--499
810	Karnataka	KARWAR	SIDDAPUR	GAVINGUDDE
811	Karnataka	KARWAR	SIDDAPUR	BIDARMANE
812	Karnataka	KARWAR	SIDDAPUR	MULGUNDA
813	Karnataka	KARWAR	SIDDAPUR	KARJAGI
814	Karnataka	KARWAR	SIDDAPUR	--NoName--501
815	Karnataka	KARWAR	SIDDAPUR	HULLUNDE
816	Karnataka	KARWAR	SIDDAPUR	MATTI HALLI
817	Karnataka	KARWAR	SIDDAPUR	HIREKAI (KODSAR HALKANI)
818	Karnataka	KARWAR	SIDDAPUR	SURGIKOPPA
819	Karnataka	KARWAR	SIDDAPUR	MUDHALLI
820	Karnataka	KARWAR	SIDDAPUR	KALEN HALLI
821	Karnataka	KARWAR	SIDDAPUR	TAREGAR
822	Karnataka	KARWAR	SIDDAPUR	NILKUND
823	Karnataka	KARWAR	SIDDAPUR	--NoName--505
824	Karnataka	KARWAR	SIDDAPUR	NANDYANE
825	Karnataka	KARWAR	SIDDAPUR	HEGGE
826	Karnataka	KARWAR	SIDDAPUR	GODLABIL
827	Karnataka	KARWAR	SIDDAPUR	HASARGOD
828	Karnataka	KARWAR	SIDDAPUR	HEGGARANI
829	Karnataka	KARWAR	SIDDAPUR	HUTAGAR (MUTHALLI)
830	Karnataka	KARWAR	SIDDAPUR	--NoName--510
831	Karnataka	KARWAR	SIDDAPUR	HUKALI (WAJGOD)
832	Karnataka	KARWAR	SIDDAPUR	HARIGAR
833	Karnataka	KARWAR	SIDDAPUR	HANDIYANE MATH

SI No	STATE	DIST	TALUK	Village Name
834	Karnataka	KARWAR	SIDDAPUR	--NoName--513
835	Karnataka	KARWAR	SIDDAPUR	HAVINBIL
836	Karnataka	KARWAR	SIDDAPUR	--NoName--515
837	Karnataka	KARWAR	SIDDAPUR	UNCHALLI
838	Karnataka	KARWAR	SIDDAPUR	NIDGOD
839	Karnataka	KARWAR	SIDDAPUR	ALGOD
840	Karnataka	KARWAR	SIDDAPUR	MUTTIGE (GUNJAGOD)
841	Karnataka	KARWAR	SIDDAPUR	HEGGODMANE
842	Karnataka	KARWAR	SIDDAPUR	--NoName--516
843	Karnataka	KARWAR	SIDDAPUR	HONNEKOMB
844	Karnataka	KARWAR	SIDDAPUR	HALDOT
845	Karnataka	KARWAR	SIDDAPUR	NALIGAR
846	Karnataka	KARWAR	SIDDAPUR	BANDISARA
847	Karnataka	KARWAR	SIDDAPUR	--NoName--517
848	Karnataka	KARWAR	SIDDAPUR	GIJAGINI
849	Karnataka	KARWAR	SIDDAPUR	HADRIMANE
850	Karnataka	KARWAR	SIDDAPUR	HALAGADIKOPPA
851	Karnataka	KARWAR	SIDDAPUR	NAIGAR
852	Karnataka	KARWAR	SIDDAPUR	ILLIMANE
853	Karnataka	KARWAR	SIDDAPUR	KASTUR
854	Karnataka	KARWAR	SIDDAPUR	BILEGOD
855	Karnataka	KARWAR	SIDDAPUR	KADAVADI
856	Karnataka	KARWAR	SIDDAPUR	MAVINKOD
857	Karnataka	KARWAR	SIDDAPUR	DODMANE
858	Karnataka	KARWAR	SIDDAPUR	--NoName--520
859	Karnataka	KARWAR	SIDDAPUR	BALLATTE
860	Karnataka	KARWAR	SIDDAPUR	HEGGADDE
861	Karnataka	KARWAR	SIDDAPUR	BAESAR
862	Karnataka	KARWAR	SIDDAPUR	NIRGOD
863	Karnataka	KARWAR	SIDDAPUR	KAUNSALE
864	Karnataka	KARWAR	SIDDAPUR	--NoName--525
865	Karnataka	KARWAR	SIDDAPUR	BILGI
866	Karnataka	KARWAR	SIDDAPUR	BALEKOPPA (SHIRALGI)
867	Karnataka	KARWAR	SIDDAPUR	BALGOD
868	Karnataka	KARWAR	SIDDAPUR	MAGHEGAR
869	Karnataka	KARWAR	SIDDAPUR	KOLGI
870	Karnataka	KARWAR	SIDDAPUR	BEGAR
871	Karnataka	KARWAR	SIDDAPUR	KUDEGOD
872	Karnataka	KARWAR	SIDDAPUR	KODIGADDE
873	Karnataka	KARWAR	SIDDAPUR	MUTTIGE (KAVAL KOPPA)
874	Karnataka	KARWAR	SIDDAPUR	ITAGI
875	Karnataka	KARWAR	SIDDAPUR	SANGOLIMANE
876	Karnataka	KARWAR	SIDDAPUR	DANMAV
877	Karnataka	KARWAR	SIDDAPUR	TARAGOD
878	Karnataka	KARWAR	SIDDAPUR	TALEKERI
879	Karnataka	KARWAR	SIDDAPUR	--NoName--536
880	Karnataka	KARWAR	SIDDAPUR	ALAVALLI
881	Karnataka	KARWAR	SIDDAPUR	ALGOD
882	Karnataka	KARWAR	SIDDAPUR	SUTTALMANE
883	Karnataka	KARWAR	SIDDAPUR	MATTIGAR
884	Karnataka	KARWAR	SIDDAPUR	CHANDRAGHATGI
885	Karnataka	KARWAR	SIDDAPUR	HUKALI (WAJGOD)
886	Karnataka	KARWAR	SIDDAPUR	HARALIKOPPA
887	Karnataka	KARWAR	SIDDAPUR	KODGADDE
888	Karnataka	KARWAR	SIDDAPUR	MALEMANE
889	Karnataka	KARWAR	SIDDAPUR	HEMAGAR
890	Karnataka	KARWAR	SIDDAPUR	HEJANI
891	Karnataka	KARWAR	SIDDAPUR	KILAR
892	Karnataka	KARWAR	SIDDAPUR	KULIBID
893	Karnataka	KARWAR	SIDDAPUR	--NoName--543
894	Karnataka	KARWAR	SIDDAPUR	MALVAJADDI
895	Karnataka	KARWAR	SIDDAPUR	HEGGEKOPPA
896	Karnataka	KARWAR	SIDDAPUR	KORALKAI
897	Karnataka	KARWAR	SIDDAPUR	MUSAVALLI
898	Karnataka	KARWAR	SIDDAPUR	MALAVALLI
899	Karnataka	KARWAR	SIRSI	GADIHALLI
900	Karnataka	KARWAR	SIRSI	GADIHALLI
901	Karnataka	KARWAR	SIRSI	--NoName--443
902	Karnataka	KARWAR	SIRSI	DHORANAGIRI
903	Karnataka	KARWAR	SIRSI	KODNAGADDE

SI No	STATE	DIST	TALUK	Village Name
904	Karnataka	KARWAR	SIRSI	YADALLI
905	Karnataka	KARWAR	SIRSI	MUSKI
906	Karnataka	KARWAR	SIRSI	GOUDALLI
907	Karnataka	KARWAR	SIRSI	MOGADDE
908	Karnataka	KARWAR	SIRSI	--NoName--447
909	Karnataka	KARWAR	SIRSI	DASANGADDE
910	Karnataka	KARWAR	SIRSI	VANALLI
911	Karnataka	KARWAR	SIRSI	AUDALA
912	Karnataka	KARWAR	SIRSI	--NoName--449
913	Karnataka	KARWAR	SIRSI	HULGOL
914	Karnataka	KARWAR	SIRSI	KOPPA
915	Karnataka	KARWAR	SIRSI	GURUVALLI
916	Karnataka	KARWAR	SIRSI	SHIRGANI
917	Karnataka	KARWAR	SIRSI	MUDEBAIL
918	Karnataka	KARWAR	SIRSI	BAKKAL
919	Karnataka	KARWAR	SIRSI	SONDA
920	Karnataka	KARWAR	SIRSI	GONSAR
921	Karnataka	KARWAR	SIRSI	ANGODKOPPA
922	Karnataka	KARWAR	SIRSI	ULLAL
923	Karnataka	KARWAR	SIRSI	KODIGAR
924	Karnataka	KARWAR	SIRSI	KUGTEMANE
925	Karnataka	KARWAR	SIRSI	HUDELKOPPA
926	Karnataka	KARWAR	SIRSI	BOPPANALLI
927	Karnataka	KARWAR	SIRSI	NAKSHE
928	Karnataka	KARWAR	SIRSI	BENAGI
929	Karnataka	KARWAR	SIRSI	MUREGAR
930	Karnataka	KARWAR	SIRSI	HAREHULEKAL
931	Karnataka	KARWAR	SIRSI	AGASAL
932	Karnataka	KARWAR	SIRSI	KUGTEMANE
933	Karnataka	KARWAR	SIRSI	KELGINKERI
934	Karnataka	KARWAR	SIRSI	SADASHIVALLI
935	Karnataka	KARWAR	SIRSI	MALALGAON
936	Karnataka	KARWAR	SIRSI	SHIGEHALLI
937	Karnataka	KARWAR	SIRSI	MANADUR
938	Karnataka	KARWAR	SIRSI	ISLOOR
939	Karnataka	KARWAR	SIRSI	KOTEKOPPA
940	Karnataka	KARWAR	SIRSI	HEBBALLI
941	Karnataka	KARWAR	SIRSI	MUNDGANMANE
942	Karnataka	KARWAR	SIRSI	--NoName--458
943	Karnataka	KARWAR	SIRSI	UMMADI
944	Karnataka	KARWAR	SIRSI	NEELKANI
945	Karnataka	KARWAR	SIRSI	BISLAKOPPA
946	Karnataka	KARWAR	SIRSI	SARGUPPA
947	Karnataka	KARWAR	SIRSI	HULDEVANSAR
948	Karnataka	KARWAR	SIRSI	MATTIHALLI
949	Karnataka	KARWAR	SIRSI	--NoName--462
950	Karnataka	KARWAR	SIRSI	PURA
951	Karnataka	KARWAR	SIRSI	JADDIGADDE
952	Karnataka	KARWAR	SIRSI	ACHANALLI
953	Karnataka	KARWAR	SIRSI	MODUR
954	Karnataka	KARWAR	SIRSI	--NoName--465
955	Karnataka	KARWAR	SIRSI	HAREPAL
956	Karnataka	KARWAR	SIRSI	GONGATTA
957	Karnataka	KARWAR	SIRSI	SINGANALLI
958	Karnataka	KARWAR	SIRSI	DEVANALLI
959	Karnataka	KARWAR	SIRSI	KANDRAJI
960	Karnataka	KARWAR	SIRSI	GONUR
961	Karnataka	KARWAR	SIRSI	KARJIGIMANE
962	Karnataka	KARWAR	SIRSI	HEDIGEMANE
963	Karnataka	KARWAR	SIRSI	BYAGADDE
964	Karnataka	KARWAR	SIRSI	KALVE
965	Karnataka	KARWAR	SIRSI	HUSRI
966	Karnataka	KARWAR	SIRSI	ONIGADDE
967	Karnataka	KARWAR	SIRSI	MUNDAGESAR
968	Karnataka	KARWAR	SIRSI	MARGUNDI
969	Karnataka	KARWAR	SIRSI	KYADGKOPPA
970	Karnataka	KARWAR	SIRSI	HEDIGEMANE
971	Karnataka	KARWAR	SIRSI	SANNALLI
972	Karnataka	KARWAR	SIRSI	--NoName--475
973	Karnataka	KARWAR	SIRSI	HEGGAR

SI No	STATE	DIST	TALUK	Village Name
974	Karnataka	KARWAR	SIRSI	BENAGAON
975	Karnataka	KARWAR	SIRSI	SUGAVI
976	Karnataka	KARWAR	SIRSI	KALKOPPA
977	Karnataka	KARWAR	SIRSI	KALLALLI
978	Karnataka	KARWAR	SIRSI	HAKKIGADDE
979	Karnataka	KARWAR	SIRSI	KALUGAR
980	Karnataka	KARWAR	SIRSI	KALKARDI
981	Karnataka	KARWAR	SIRSI	MUNDAGESAR
982	Karnataka	KARWAR	SIRSI	--NoName--478
983	Karnataka	KARWAR	SIRSI	KANALLI
984	Karnataka	KARWAR	SIRSI	GADGERI
985	Karnataka	KARWAR	SIRSI	ADALLI
986	Karnataka	KARWAR	SIRSI	HALLUSARGI
987	Karnataka	KARWAR	SIRSI	TEPPAR
988	Karnataka	KARWAR	SIRSI	HOSTOTA
989	Karnataka	KARWAR	SIRSI	HALLUSARGI
990	Karnataka	KARWAR	SIRSI	MANJAGUNI
991	Karnataka	KARWAR	SIRSI	HEBRE
992	Karnataka	KARWAR	SIRSI	KODGIBAIL
993	Karnataka	KARWAR	SIRSI	KALGUNDIKOPPA
994	Karnataka	KARWAR	SIRSI	NAVILGAR
995	Karnataka	KARWAR	SIRSI	GADIHALLI
996	Karnataka	KARWAR	SIRSI	BIDRALLI
997	Karnataka	KARWAR	SIRSI	VADDINAKOPPA
998	Karnataka	KARWAR	SIRSI	HOSTOTA
999	Karnataka	KARWAR	SIRSI	HADALAGI
1000	Karnataka	KARWAR	SIRSI	NAVANAGERI
1001	Karnataka	KARWAR	SIRSI	KUKRI
1002	Karnataka	KARWAR	SIRSI	SOMANALLI
1003	Karnataka	KARWAR	SIRSI	UPLEKOPPA
1004	Karnataka	KARWAR	SIRSI	UMBLEKOPPA
1005	Karnataka	KARWAR	SIRSI	MUNDGEHALLI
1006	Karnataka	KARWAR	SIRSI	SAMPAKHANDA
1007	Karnataka	KARWAR	SIRSI	JANMANE (H)
1008	Karnataka	KARWAR	SIRSI	BANDAL
1009	Karnataka	KARWAR	SIRSI	TUDUGUNI
1010	Karnataka	KARWAR	SIRSI	KALLI
1011	Karnataka	KARWAR	SIRSI	KUGTEMANE
1012	Karnataka	KARWAR	SIRSI	MUNDGEHALLI
1013	Karnataka	KARWAR	SIRSI	HANAGAR
1014	Karnataka	KARWAR	SIRSI	NERLAVALLI
1015	Karnataka	KARWAR	SIRSI	BISLAKOPPA
1016	Karnataka	KARWAR	SIRSI	DEVIMANE
1017	Karnataka	KARWAR	SIRSI	DEVIMANE
1018	Karnataka	KARWAR	SIRSI	HOSUR
1019	Karnataka	KARWAR	SIRSI	BALAVALLI
1020	Karnataka	KARWAR	SIRSI	Badagi
1021	Karnataka	KARWAR	SIRSI	KADGOD
1022	Karnataka	KARWAR	SIRSI	ADALLI
1023	Karnataka	KARWAR	SIRSI	BUGADI
1024	Karnataka	KARWAR	YELLAPUR	HOTAGERI
1025	Karnataka	KARWAR	YELLAPUR	LALGULI
1026	Karnataka	KARWAR	YELLAPUR	KIRAVATTI
1027	Karnataka	KARWAR	YELLAPUR	KANNIGERI
1028	Karnataka	KARWAR	YELLAPUR	GOTGULI
1029	Karnataka	KARWAR	YELLAPUR	NAGARAKHAN
1030	Karnataka	KARWAR	YELLAPUR	KANNADAGAL
1031	Karnataka	KARWAR	YELLAPUR	SAVAGADDE
1032	Karnataka	KARWAR	YELLAPUR	ANGOD
1033	Karnataka	KARWAR	YELLAPUR	MADNUR
1034	Karnataka	KARWAR	YELLAPUR	BELEGERI
1035	Karnataka	KARWAR	YELLAPUR	HIRIYAL
1036	Karnataka	KARWAR	YELLAPUR	GOPADMANE
1037	Karnataka	KARWAR	YELLAPUR	BARAGADDE
1038	Karnataka	KARWAR	YELLAPUR	KATTIGE
1039	Karnataka	KARWAR	YELLAPUR	BISGOD
1040	Karnataka	KARWAR	YELLAPUR	CHIMANALLI
1041	Karnataka	KARWAR	YELLAPUR	SHISTAMUDI
1042	Karnataka	KARWAR	YELLAPUR	DEHALLI
1043	Karnataka	KARWAR	YELLAPUR	TATAGAR

SI No	STATE	DIST	TALUK	Village Name
1044	Karnataka	KARWAR	YELLAPUR	HAMSANA GADDE
1045	Karnataka	KARWAR	YELLAPUR	HEGGAPUR
1046	Karnataka	KARWAR	YELLAPUR	KALASURU
1047	Karnataka	KARWAR	YELLAPUR	BALAGAR
1048	Karnataka	KARWAR	YELLAPUR	SOMANALLI
1049	Karnataka	KARWAR	YELLAPUR	LINGADABAILU
1050	Karnataka	KARWAR	YELLAPUR	--NoName--427
1051	Karnataka	KARWAR	YELLAPUR	BARABALLI
1052	Karnataka	KARWAR	YELLAPUR	DONAGAR
1053	Karnataka	KARWAR	YELLAPUR	BANKASALLI
1054	Karnataka	KARWAR	YELLAPUR	BENDIGERI
1055	Karnataka	KARWAR	YELLAPUR	CHANDGULI
1056	Karnataka	KARWAR	YELLAPUR	KALACHE
1057	Karnataka	KARWAR	YELLAPUR	--NoName--429
1058	Karnataka	KARWAR	YELLAPUR	BAGINKATTA
1059	Karnataka	KARWAR	YELLAPUR	GADIJOGADMANE
1060	Karnataka	KARWAR	YELLAPUR	CHIMANALLI
1061	Karnataka	KARWAR	YELLAPUR	BHOMNALLI
1062	Karnataka	KARWAR	YELLAPUR	GHWAS
1063	Karnataka	KARWAR	YELLAPUR	PURATBOMNALLI
1064	Karnataka	KARWAR	YELLAPUR	BEEGAR
1065	Karnataka	KARWAR	YELLAPUR	--NoName--430
1066	Karnataka	KARWAR	YELLAPUR	IDAGUNDI
1067	Karnataka	KARWAR	YELLAPUR	BILKI
1068	Karnataka	KARWAR	YELLAPUR	KEREHOSALLI
1069	Karnataka	KARWAR	YELLAPUR	TARGAR
1070	Karnataka	KARWAR	YELLAPUR	HOTAGERI
1071	Karnataka	KARWAR	YELLAPUR	CHIKKOTTI
1072	Karnataka	KARWAR	YELLAPUR	MALALGAON
1073	Karnataka	KARWAR	YELLAPUR	HONAGADDE
1074	Karnataka	KARWAR	YELLAPUR	KODLAGADDE
1075	Karnataka	KARWAR	YELLAPUR	KAMPLI
1076	Karnataka	KARWAR	YELLAPUR	MAVINAMANE
1077	Karnataka	KARWAR	YELLAPUR	SHIRANALA
1078	Karnataka	KARWAR	YELLAPUR	HEGGUMBALE
1079	Karnataka	KARWAR	YELLAPUR	AALWAD
1080	Karnataka	KARWAR	YELLAPUR	MAGOD
1081	Karnataka	KARWAR	YELLAPUR	GULLAPUR
1082	Karnataka	KARWAR	YELLAPUR	KELASHI
1083	Karnataka	KARWAR	YELLAPUR	DABAGULI
1084	Karnataka	KARWAR	YELLAPUR	BARE
1085	Karnataka	KARWAR	YELLAPUR	HALAGOD
1086	Karnataka	KARWAR	YELLAPUR	HULLARAMANE
1087	Karnataka	KARWAR	YELLAPUR	BARE
1088	Karnataka	KARWAR	YELLAPUR	JAKKOLLI
1089	Karnataka	KARWAR	YELLAPUR	KUSGULI
1090	Karnataka	KARWAR	YELLAPUR	BAICHGOD
1091	Karnataka	KARWAR	YELLAPUR	HARIGADDE
1092	Karnataka	KARWAR	YELLAPUR	YADALLI
1093	Karnataka	KARWAR	YELLAPUR	HALASINKOPPA
1094	Karnataka	KARWAR	YELLAPUR	UCHAGERI
1095	Karnataka	KARWAR	YELLAPUR	BIDRALLI
1096	Karnataka	KARWAR	YELLAPUR	JADDIGADDE
1097	Karnataka	KARWAR	YELLAPUR	GERAL
1098	Karnataka	KARWAR	YELLAPUR	HIRESAR
1099	Karnataka	KARWAR	YELLAPUR	BHARATANAHALLI
1100	Karnataka	KARWAR	YELLAPUR	ILEHALLI
1101	Karnataka	KARWAR	YELLAPUR	HITTLALLI
1102	Karnataka	KARWAR	YELLAPUR	BELLAMBI
1103	Karnataka	KARWAR	YELLAPUR	KANAGOD-BALEHADDA
1104	Karnataka	KARWAR	YELLAPUR	TAREHALLI
1105	Karnataka	KARWAR	YELLAPUR	HASALMANE
1106	Karnataka	KARWAR	YELLAPUR	BHARANII
1107	Karnataka	KARWAR	YELLAPUR	CHAVATTI
1108	Karnataka	KARWAR	YELLAPUR	HEMMADI
1109	Karnataka	KARWAR	YELLAPUR	BEEJANAKOPPA
1110	Karnataka	KARWAR	YELLAPUR	Kanur
1111	Karnataka	MANGALORE	BELTHANGADI	NARAVI
1112	Karnataka	MANGALORE	BELTHANGADI	MALAVANTHIGE
1113	Karnataka	MANGALORE	BELTHANGADI	KUTHLURU

SI No	STATE	DIST	TALUK	Village Name
1114	Karnataka	MANGALORE	BELTHANGADI	SULKERIMOGRU
1115	Karnataka	MANGALORE	BELTHANGADI	SHIRLALU
1116	Karnataka	MANGALORE	BELTHANGADI	NAVARA
1117	Karnataka	MANGALORE	BELTHANGADI	SAVANALU
1118	Karnataka	MANGALORE	BELTHANGADI	CHARMADI
1119	Karnataka	MANGALORE	BELTHANGADI	SULKERI
1120	Karnataka	MANGALORE	BELTHANGADI	NAVOORU
1121	Karnataka	MANGALORE	BELTHANGADI	NERIYA
1122	Karnataka	MANGALORE	BELTHANGADI	NADA
1123	Karnataka	MANGALORE	BELTHANGADI	PUDUVETTU
1124	Karnataka	MANGALORE	BELTHANGADI	SHISHILA
1125	Karnataka	MANGALORE	BELTHANGADI	KALANJA
1126	Karnataka	MANGALORE	BELTHANGADI	--NoName--919
1127	Karnataka	MANGALORE	BELTHANGADI	REKHYA
1128	Karnataka	MANGALORE	PUTTUR	KOWKRADI
1129	Karnataka	MANGALORE	PUTTUR	GOLITHATTU
1130	Karnataka	MANGALORE	PUTTUR	SHIRADY
1131	Karnataka	MANGALORE	PUTTUR	ALANTHAYA
1132	Karnataka	MANGALORE	PUTTUR	--NoName--947
1133	Karnataka	MANGALORE	PUTTUR	ICHLAMPADY
1134	Karnataka	MANGALORE	PUTTUR	SHIRIBAGILU
1135	Karnataka	MANGALORE	PUTTUR	BALLYA
1136	Karnataka	MANGALORE	PUTTUR	KOMBARU
1137	Karnataka	MANGALORE	PUTTUR	BILINELE
1138	Karnataka	MANGALORE	PUTTUR	DOLPADY
1139	Karnataka	MANGALORE	SULYA	BALPA
1140	Karnataka	MANGALORE	SULYA	YENEKALLU
1141	Karnataka	MANGALORE	SULYA	SUBRAMANYA
1142	Karnataka	MANGALORE	SULYA	--NoName--989
1143	Karnataka	MANGALORE	SULYA	NALKOORU
1144	Karnataka	MANGALORE	SULYA	KUTHKUNJA
1145	Karnataka	MANGALORE	SULYA	--NoName--990
1146	Karnataka	MANGALORE	SULYA	DEVACHALLA
1147	Karnataka	MANGALORE	SULYA	HARIHARAPALLATHADKA
1148	Karnataka	MANGALORE	SULYA	BALAGODU
1149	Karnataka	MANGALORE	SULYA	--NoName--994
1150	Karnataka	MANGALORE	SULYA	MADAPPADY
1151	Karnataka	MANGALORE	SULYA	UBARADKA MITTUR
1152	Karnataka	MANGALORE	SULYA	KALMAKARU
1153	Karnataka	MANGALORE	SULYA	ARANTHODU
1154	Karnataka	MANGALORE	SULYA	ALETTY
1155	Karnataka	MANGALORE	SULYA	SAMPAJE
1156	Karnataka	MANGALORE	SULYA	THODIKANA
1157	Karnataka	MYSORE	HEGGADADEVANAKOTE	RAJEGOWDANAHUNDI
1158	Karnataka	MYSORE	HEGGADADEVANAKOTE	SOLLAPURA
1159	Karnataka	MYSORE	HEGGADADEVANAKOTE	GOWDIMACHANAYAKANA HALLI
1160	Karnataka	MYSORE	HEGGADADEVANAKOTE	SIDDAPURA
1161	Karnataka	MYSORE	HEGGADADEVANAKOTE	METIKUPPE FOREST
1162	Karnataka	MYSORE	HEGGADADEVANAKOTE	AGASANAHUNDI
1163	Karnataka	MYSORE	HEGGADADEVANAKOTE	METIKUPPE
1164	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1037
1165	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1038
1166	Karnataka	MYSORE	HEGGADADEVANAKOTE	HIREHALLI
1167	Karnataka	MYSORE	HEGGADADEVANAKOTE	HONNURKUPPE
1168	Karnataka	MYSORE	HEGGADADEVANAKOTE	ANTHARASANTHE
1169	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1057
1170	Karnataka	MYSORE	HEGGADADEVANAKOTE	RAGALAKUPPE
1171	Karnataka	MYSORE	HEGGADADEVANAKOTE	MANCHEGOWDANAHALLI
1172	Karnataka	MYSORE	HEGGADADEVANAKOTE	KAKANAKOTE FOREST
1173	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1066
1174	Karnataka	MYSORE	HEGGADADEVANAKOTE	N.BELATHUR
1175	Karnataka	MYSORE	HEGGADADEVANAKOTE	NISNA
1176	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1076
1177	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1078
1178	Karnataka	MYSORE	HEGGADADEVANAKOTE	BEGURU
1179	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1082
1180	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1084
1181	Karnataka	MYSORE	HEGGADADEVANAKOTE	KENCHANAHALLI
1182	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1086
1183	Karnataka	MYSORE	HEGGADADEVANAKOTE	HARIYALAPURA

SI No	STATE	DIST	TALUK	Village Name
1184	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1087
1185	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1088
1186	Karnataka	MYSORE	HEGGADADEVANAKOTE	KATAWALU
1187	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1091
1188	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1092
1189	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1093
1190	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1094
1191	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1095
1192	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1096
1193	Karnataka	MYSORE	HEGGADADEVANAKOTE	BADAGA
1194	Karnataka	MYSORE	HEGGADADEVANAKOTE	KANDALIKE
1195	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1098
1196	Karnataka	MYSORE	HEGGADADEVANAKOTE	SEEDEVADI
1197	Karnataka	MYSORE	HEGGADADEVANAKOTE	BANKAVADI
1198	Karnataka	MYSORE	HEGGADADEVANAKOTE	ANEMALA
1199	Karnataka	MYSORE	HEGGADADEVANAKOTE	HOSAKOTE
1200	Karnataka	MYSORE	HEGGADADEVANAKOTE	CHANNAGUNDI
1201	Karnataka	MYSORE	HEGGADADEVANAKOTE	NETKALHUNDI
1202	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1102
1203	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1103
1204	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1104
1205	Karnataka	MYSORE	HEGGADADEVANAKOTE	KADEGADDE
1206	Karnataka	MYSORE	HEGGADADEVANAKOTE	HIREHALLI
1207	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1108
1208	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1109
1209	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1113
1210	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1114
1211	Karnataka	MYSORE	HEGGADADEVANAKOTE	INUR MARIGUDI JUNGLE
1212	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1116
1213	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1117
1214	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1118
1215	Karnataka	MYSORE	HEGGADADEVANAKOTE	BARAGI
1216	Karnataka	MYSORE	HEGGADADEVANAKOTE	ALANAHALLI
1217	Karnataka	MYSORE	HEGGADADEVANAKOTE	VADERAHALLI
1218	Karnataka	MYSORE	HEGGADADEVANAKOTE	--NoName--1122
1219	Karnataka	SHIMOGA	HOSANAGARA	NANDRI
1220	Karnataka	SHIMOGA	HOSANAGARA	DODDA BILAGODU
1221	Karnataka	SHIMOGA	HOSANAGARA	ALAVALLI
1222	Karnataka	SHIMOGA	HOSANAGARA	HULUSALE MALAVALLI
1223	Karnataka	SHIMOGA	HOSANAGARA	HOLAGODU
1224	Karnataka	SHIMOGA	HOSANAGARA	AMACHI
1225	Karnataka	SHIMOGA	HOSANAGARA	THOTADA KOPPA
1226	Karnataka	SHIMOGA	HOSANAGARA	HARIDRAVATI
1227	Karnataka	SHIMOGA	HOSANAGARA	H.HUNASAVALLI
1228	Karnataka	SHIMOGA	HOSANAGARA	MENASE
1229	Karnataka	SHIMOGA	HOSANAGARA	MASARUR
1230	Karnataka	SHIMOGA	HOSANAGARA	NELAGALALE
1231	Karnataka	SHIMOGA	HOSANAGARA	KANAGODU
1232	Karnataka	SHIMOGA	HOSANAGARA	GUBBIGA
1233	Karnataka	SHIMOGA	HOSANAGARA	MELINA SAMPALLI
1234	Karnataka	SHIMOGA	HOSANAGARA	CHURDA
1235	Karnataka	SHIMOGA	HOSANAGARA	BASAVAPURA
1236	Karnataka	SHIMOGA	HOSANAGARA	MAJAVANA
1237	Karnataka	SHIMOGA	HOSANAGARA	NERALA MANE
1238	Karnataka	SHIMOGA	HOSANAGARA	BASAVAPURA
1239	Karnataka	SHIMOGA	HOSANAGARA	BENAVALLI
1240	Karnataka	SHIMOGA	HOSANAGARA	ARASALU
1241	Karnataka	SHIMOGA	HOSANAGARA	SIDIYAPURA
1242	Karnataka	SHIMOGA	HOSANAGARA	VEERABHADRAPURA
1243	Karnataka	SHIMOGA	HOSANAGARA	KACHIGEBYLU
1244	Karnataka	SHIMOGA	HOSANAGARA	KALASETTI KOPPA
1245	Karnataka	SHIMOGA	HOSANAGARA	KUKAKALALE
1246	Karnataka	SHIMOGA	HOSANAGARA	HOSAKOPPA
1247	Karnataka	SHIMOGA	HOSANAGARA	JENI
1248	Karnataka	SHIMOGA	HOSANAGARA	BILKI
1249	Karnataka	SHIMOGA	HOSANAGARA	ANDAGOLI
1250	Karnataka	SHIMOGA	HOSANAGARA	HIREMAITHE
1251	Karnataka	SHIMOGA	HOSANAGARA	HALETHOTA
1252	Karnataka	SHIMOGA	HOSANAGARA	HAROHITHLU
1253	Karnataka	SHIMOGA	HOSANAGARA	KALKOPPA

SI No	STATE	DIST	TALUK	Village Name
1254	Karnataka	SHIMOGA	HOSANAGARA	KOTESHIRUR
1255	Karnataka	SHIMOGA	HOSANAGARA	MALAVALLI
1256	Karnataka	SHIMOGA	HOSANAGARA	HEBBIGE
1257	Karnataka	SHIMOGA	HOSANAGARA	PUNAJE
1258	Karnataka	SHIMOGA	HOSANAGARA	NEELAKANTANATHOTA
1259	Karnataka	SHIMOGA	HOSANAGARA	THAMMADIKOPPA
1260	Karnataka	SHIMOGA	HOSANAGARA	ARAGODI
1261	Karnataka	SHIMOGA	HOSANAGARA	MALALI
1262	Karnataka	SHIMOGA	HOSANAGARA	KESARE
1263	Karnataka	SHIMOGA	HOSANAGARA	H.HONNE KOPPA
1264	Karnataka	SHIMOGA	HOSANAGARA	KARAGODU
1265	Karnataka	SHIMOGA	HOSANAGARA	TARIGA
1266	Karnataka	SHIMOGA	HOSANAGARA	MASAGALLI
1267	Karnataka	SHIMOGA	HOSANAGARA	HARAMBALLI
1268	Karnataka	SHIMOGA	HOSANAGARA	DUMMA
1269	Karnataka	SHIMOGA	HOSANAGARA	KOLAVALLI
1270	Karnataka	SHIMOGA	HOSANAGARA	KALIKAPURA
1271	Karnataka	SHIMOGA	HOSANAGARA	MUGADTHI
1272	Karnataka	SHIMOGA	HOSANAGARA	MULAGADDE
1273	Karnataka	SHIMOGA	HOSANAGARA	KUSGUNDI
1274	Karnataka	SHIMOGA	HOSANAGARA	KALASE
1275	Karnataka	SHIMOGA	HOSANAGARA	TALALE
1276	Karnataka	SHIMOGA	HOSANAGARA	MUTHUR
1277	Karnataka	SHIMOGA	HOSANAGARA	GUBBIGA
1278	Karnataka	SHIMOGA	HOSANAGARA	KALKOPPA
1279	Karnataka	SHIMOGA	HOSANAGARA	YALAGALLU
1280	Karnataka	SHIMOGA	HOSANAGARA	ADAGODI
1281	Karnataka	SHIMOGA	HOSANAGARA	KALLUR
1282	Karnataka	SHIMOGA	HOSANAGARA	KAGACHI
1283	Karnataka	SHIMOGA	HOSANAGARA	KARIGERASU
1284	Karnataka	SHIMOGA	HOSANAGARA	BELUR
1285	Karnataka	SHIMOGA	HOSANAGARA	NAGODI
1286	Karnataka	SHIMOGA	HOSANAGARA	HULIGADDE
1287	Karnataka	SHIMOGA	HOSANAGARA	MANJAGALALE
1288	Karnataka	SHIMOGA	HOSANAGARA	K.KUNNUR
1289	Karnataka	SHIMOGA	HOSANAGARA	HEBBURLI
1290	Karnataka	SHIMOGA	HOSANAGARA	HOSUR
1291	Karnataka	SHIMOGA	HOSANAGARA	BIDHARALLI
1292	Karnataka	SHIMOGA	HOSANAGARA	BEHALI
1293	Karnataka	SHIMOGA	HOSANAGARA	K.KUNNUR
1294	Karnataka	SHIMOGA	HOSANAGARA	MASAKANI
1295	Karnataka	SHIMOGA	HOSANAGARA	SHAKAVALLI
1296	Karnataka	SHIMOGA	HOSANAGARA	L.GUDDKOPPA
1297	Karnataka	SHIMOGA	HOSANAGARA	VADAHOSALLI
1298	Karnataka	SHIMOGA	HOSANAGARA	AMRUTHA
1299	Karnataka	SHIMOGA	HOSANAGARA	MALALI KOPPA
1300	Karnataka	SHIMOGA	HOSANAGARA	SAVANTHUR
1301	Karnataka	SHIMOGA	HOSANAGARA	ARAMANE KOPPA
1302	Karnataka	SHIMOGA	HOSANAGARA	KAMMACHI
1303	Karnataka	SHIMOGA	HOSANAGARA	BALEKOPPA
1304	Karnataka	SHIMOGA	HOSANAGARA	H.HONNE KOPPA
1305	Karnataka	SHIMOGA	HOSANAGARA	HIRIYOGI
1306	Karnataka	SHIMOGA	HOSANAGARA	KATTINAHOLE
1307	Karnataka	SHIMOGA	HOSANAGARA	DOBYLU
1308	Karnataka	SHIMOGA	HOSANAGARA	MATHIKAI
1309	Karnataka	SHIMOGA	HOSANAGARA	BRAHMANATHARUVE
1310	Karnataka	SHIMOGA	HOSANAGARA	KODUR
1311	Karnataka	SHIMOGA	HOSANAGARA	NELLUNDE
1312	Karnataka	SHIMOGA	HOSANAGARA	THRINIVE
1313	Karnataka	SHIMOGA	HOSANAGARA	KODASE
1314	Karnataka	SHIMOGA	HOSANAGARA	ANEGADDE
1315	Karnataka	SHIMOGA	HOSANAGARA	BHRAMANAVADA
1316	Karnataka	SHIMOGA	HOSANAGARA	BASAVANABYANA
1317	Karnataka	SHIMOGA	HOSANAGARA	KILANDUR
1318	Karnataka	SHIMOGA	HOSANAGARA	THOGARE
1319	Karnataka	SHIMOGA	HOSANAGARA	BYSE
1320	Karnataka	SHIMOGA	HOSANAGARA	MUDUGOPPA (NAGARA)
1321	Karnataka	SHIMOGA	HOSANAGARA	BILLODI
1322	Karnataka	SHIMOGA	HOSANAGARA	HILUKUNJI
1323	Karnataka	SHIMOGA	HOSANAGARA	KALLUVIDI ABBIGALLA

SI No	STATE	DIST	TALUK	Village Name
1324	Karnataka	SHIMOGA	HOSANAGARA	MALALI
1325	Karnataka	SHIMOGA	HOSANAGARA	BELLUR
1326	Karnataka	SHIMOGA	HOSANAGARA	KILANDUR
1327	Karnataka	SHIMOGA	HOSANAGARA	KADIGGERE
1328	Karnataka	SHIMOGA	HOSANAGARA	KARIMANE
1329	Karnataka	SHIMOGA	HOSANAGARA	KABALE
1330	Karnataka	SHIMOGA	HOSANAGARA	RYAVE
1331	Karnataka	SHIMOGA	HOSANAGARA	ADAGODI
1332	Karnataka	SHIMOGA	HOSANAGARA	KHYRUGUNDHA
1333	Karnataka	SHIMOGA	HOSANAGARA	GINIKALLU
1334	Karnataka	SHIMOGA	HOSANAGARA	Kolavadi
1335	Karnataka	SHIMOGA	HOSANAGARA	NIDAGODU
1336	Karnataka	SHIMOGA	HOSANAGARA	KAVARI
1337	Karnataka	SHIMOGA	HOSANAGARA	SULAGODU
1338	Karnataka	SHIMOGA	HOSANAGARA	YADUR
1339	Karnataka	SHIMOGA	HOSANAGARA	KATTEKOPPA
1340	Karnataka	SHIMOGA	HOSANAGARA	HUMMADAGALLU
1341	Karnataka	SHIMOGA	HOSANAGARA	GUBBIGA
1342	Karnataka	SHIMOGA	HOSANAGARA	BEGADALI
1343	Karnataka	SHIMOGA	HOSANAGARA	ULTHIGA
1344	Karnataka	SHIMOGA	HOSANAGARA	KORANAKOTE
1345	Karnataka	SHIMOGA	SAGAR	GUTHANAHALLI
1346	Karnataka	SHIMOGA	SAGAR	TALAKALALE
1347	Karnataka	SHIMOGA	SAGAR	KORLIKOPPA
1348	Karnataka	SHIMOGA	SAGAR	TALAVATA
1349	Karnataka	SHIMOGA	SAGAR	--NoName--549
1350	Karnataka	SHIMOGA	SAGAR	HALAVAGODU
1351	Karnataka	SHIMOGA	SAGAR	JAMBANI
1352	Karnataka	SHIMOGA	SAGAR	--NoName--550
1353	Karnataka	SHIMOGA	SAGAR	BILISIRI
1354	Karnataka	SHIMOGA	SAGAR	MADASURU
1355	Karnataka	SHIMOGA	SAGAR	KANUTHOTA
1356	Karnataka	SHIMOGA	SAGAR	BIDARUR
1357	Karnataka	SHIMOGA	SAGAR	HIREMANE
1358	Karnataka	SHIMOGA	SAGAR	BELANDUR
1359	Karnataka	SHIMOGA	SAGAR	LAVIGGERE
1360	Karnataka	SHIMOGA	SAGAR	--NoName--552
1361	Karnataka	SHIMOGA	SAGAR	--NoName--554
1362	Karnataka	SHIMOGA	SAGAR	KERODI
1363	Karnataka	SHIMOGA	SAGAR	BELLANNE
1364	Karnataka	SHIMOGA	SAGAR	MALLA
1365	Karnataka	SHIMOGA	SAGAR	BHYRAPURA
1366	Karnataka	SHIMOGA	SAGAR	URULAGALLU
1367	Karnataka	SHIMOGA	SAGAR	KUDIGERE
1368	Karnataka	SHIMOGA	SAGAR	HONNEMARADU
1369	Karnataka	SHIMOGA	SAGAR	NADAVALLI
1370	Karnataka	SHIMOGA	SAGAR	--NoName--560
1371	Karnataka	SHIMOGA	SAGAR	KANURU
1372	Karnataka	SHIMOGA	SAGAR	NARAGODU
1373	Karnataka	SHIMOGA	SAGAR	CHANNASHETTIKOPPA
1374	Karnataka	SHIMOGA	SAGAR	NEECHADI
1375	Karnataka	SHIMOGA	SAGAR	HIREBILAGUNJI
1376	Karnataka	SHIMOGA	SAGAR	BALIGERE
1377	Karnataka	SHIMOGA	SAGAR	--NoName--566
1378	Karnataka	SHIMOGA	SAGAR	YALAVARSI
1379	Karnataka	SHIMOGA	SAGAR	--NoName--567
1380	Karnataka	SHIMOGA	SAGAR	SHIRAGUPPE
1381	Karnataka	SHIMOGA	SAGAR	SAMPALLI
1382	Karnataka	SHIMOGA	SAGAR	--NoName--568
1383	Karnataka	SHIMOGA	SAGAR	KANAPAGARU
1384	Karnataka	SHIMOGA	SAGAR	MANDAVALLI
1385	Karnataka	SHIMOGA	SAGAR	BANUMANE
1386	Karnataka	SHIMOGA	SAGAR	ARALAGODU
1387	Karnataka	SHIMOGA	SAGAR	YALAGALALE
1388	Karnataka	SHIMOGA	SAGAR	NITLIHALETHOTA
1389	Karnataka	SHIMOGA	SAGAR	ARAVADE
1390	Karnataka	SHIMOGA	SAGAR	HAROGOPPA
1391	Karnataka	SHIMOGA	SAGAR	CHIKKABILAGUNJI
1392	Karnataka	SHIMOGA	SAGAR	HENAGERE
1393	Karnataka	SHIMOGA	SAGAR	BANADAKOPPA

SI No	STATE	DIST	TALUK	Village Name
1394	Karnataka	SHIMOGA	SAGAR	GOWTHAMPURA
1395	Karnataka	SHIMOGA	SAGAR	HIREHARAKA
1396	Karnataka	SHIMOGA	SAGAR	BYADARAKOPPA
1397	Karnataka	SHIMOGA	SAGAR	KAPTEMANE
1398	Karnataka	SHIMOGA	SAGAR	ULLURU
1399	Karnataka	SHIMOGA	SAGAR	KESAVINAMANE
1400	Karnataka	SHIMOGA	SAGAR	KOPPARIGE
1401	Karnataka	SHIMOGA	SAGAR	HULAKODU
1402	Karnataka	SHIMOGA	SAGAR	PURADASARA
1403	Karnataka	SHIMOGA	SAGAR	KASPADI
1404	Karnataka	SHIMOGA	SAGAR	HOTALASARA
1405	Karnataka	SHIMOGA	SAGAR	NAGAVALLI
1406	Karnataka	SHIMOGA	SAGAR	KOPPALAGADDE
1407	Karnataka	SHIMOGA	SAGAR	CHANNASHETTIKOPPA
1408	Karnataka	SHIMOGA	SAGAR	GUDIHITHALU
1409	Karnataka	SHIMOGA	SAGAR	NEDARAVALLI
1410	Karnataka	SHIMOGA	SAGAR	NADAVALLI
1411	Karnataka	SHIMOGA	SAGAR	DANANDUR
1412	Karnataka	SHIMOGA	SAGAR	CHIKKAMATTUR
1413	Karnataka	SHIMOGA	SAGAR	MATTIKOPPA
1414	Karnataka	SHIMOGA	SAGAR	CHIPLI
1415	Karnataka	SHIMOGA	SAGAR	NADAVADDALLI
1416	Karnataka	SHIMOGA	SAGAR	BRAHMANACHITRATTE
1417	Karnataka	SHIMOGA	SAGAR	HAROGOPPA
1418	Karnataka	SHIMOGA	SAGAR	NARASIPURA
1419	Karnataka	SHIMOGA	SAGAR	BHANUKULI
1420	Karnataka	SHIMOGA	SAGAR	MUMBALU
1421	Karnataka	SHIMOGA	SAGAR	KANNUR INAM
1422	Karnataka	SHIMOGA	SAGAR	NANDITALE
1423	Karnataka	SHIMOGA	SAGAR	--NoName--574
1424	Karnataka	SHIMOGA	SAGAR	MALALI
1425	Karnataka	SHIMOGA	SAGAR	HONGODU
1426	Karnataka	SHIMOGA	SAGAR	JAMBKOPPA
1427	Karnataka	SHIMOGA	SAGAR	HOSAGUNDA
1428	Karnataka	SHIMOGA	SAGAR	CHANNAGONDA
1429	Karnataka	SHIMOGA	SAGAR	BALIGE
1430	Karnataka	SHIMOGA	SAGAR	MAVINASARA
1431	Karnataka	SHIMOGA	SAGAR	KANUMANE
1432	Karnataka	SHIMOGA	SAGAR	MUNDIGESARA
1433	Karnataka	SHIMOGA	SAGAR	TANGALAVADI
1434	Karnataka	SHIMOGA	SAGAR	CHANNIGANATHOTA
1435	Karnataka	SHIMOGA	SAGAR	GUDIHITHALU
1436	Karnataka	SHIMOGA	SAGAR	KALURU
1437	Karnataka	SHIMOGA	SAGAR	TUMARI
1438	Karnataka	SHIMOGA	SAGAR	SANGALA
1439	Karnataka	SHIMOGA	SAGAR	AMBARAGODLU
1440	Karnataka	SHIMOGA	SAGAR	HEBBASE
1441	Karnataka	SHIMOGA	SAGAR	--NoName--578
1442	Karnataka	SHIMOGA	SAGAR	GILALAGUNDI
1443	Karnataka	SHIMOGA	SAGAR	BALLIBYLU
1444	Karnataka	SHIMOGA	SAGAR	BALAGODU
1445	Karnataka	SHIMOGA	SAGAR	HEBBARIGE
1446	Karnataka	SHIMOGA	SAGAR	CHADARAVALLI
1447	Karnataka	SHIMOGA	SAGAR	KURUVA RI
1448	Karnataka	SHIMOGA	SAGAR	KEREHITHALU
1449	Karnataka	SHIMOGA	SAGAR	BESUR
1450	Karnataka	SHIMOGA	SAGAR	YEBBODI
1451	Karnataka	SHIMOGA	SAGAR	TUMARI KOPPA
1452	Karnataka	SHIMOGA	SAGAR	KAPTEMANE
1453	Karnataka	SHIMOGA	SAGAR	HEGGATTU
1454	Karnataka	SHIMOGA	SAGAR	ARABALLI
1455	Karnataka	SHIMOGA	SAGAR	LAKKAVALLI
1456	Karnataka	SHIMOGA	SAGAR	SATALALU
1457	Karnataka	SHIMOGA	SAGAR	GIJAGA
1458	Karnataka	SHIMOGA	SAGAR	INDUVALLI
1459	Karnataka	SHIMOGA	SAGAR	KATTINAKARU
1460	Karnataka	SHIMOGA	SAGAR	--NoName--589
1461	Karnataka	SHIMOGA	SAGAR	GANTINAKOPPA
1462	Karnataka	SHIMOGA	SAGAR	KUDARURU
1463	Karnataka	SHIMOGA	SAGAR	BOBBIGE

SI No	STATE	DIST	TALUK	Village Name
1464	Karnataka	SHIMOGA	SAGAR	HOTALASARA
1465	Karnataka	SHIMOGA	SAGAR	KOLUR
1466	Karnataka	SHIMOGA	SAGAR	KOLUR
1467	Karnataka	SHIMOGA	SAGAR	KANIKE
1468	Karnataka	SHIMOGA	SAGAR	--NoName--600
1469	Karnataka	SHIMOGA	SAGAR	MALURU
1470	Karnataka	SHIMOGA	SAGAR	KOLUR
1471	Karnataka	SHIMOGA	SAGAR	KODANAVALLI
1472	Karnataka	SHIMOGA	SAGAR	BARUVE
1473	Karnataka	SHIMOGA	SAGAR	ADAGALALE
1474	Karnataka	SHIMOGA	SAGAR	KARANI
1475	Karnataka	SHIMOGA	SAGAR	TALAGODU
1476	Karnataka	SHIMOGA	SAGAR	SHANKANNA SHANUBHOG
1477	Karnataka	SHIMOGA	SAGAR	MARATI
1478	Karnataka	SHIMOGA	SAGAR	--NoName--639
1479	Karnataka	SHIMOGA	SHIKARPUR	--NoName--555
1480	Karnataka	SHIMOGA	SHIKARPUR	--NoName--556
1481	Karnataka	SHIMOGA	SHIKARPUR	SIDIGINAHALU
1482	Karnataka	SHIMOGA	SHIKARPUR	--NoName--559
1483	Karnataka	SHIMOGA	SHIKARPUR	--NoName--562
1484	Karnataka	SHIMOGA	SHIKARPUR	--NoName--563
1485	Karnataka	SHIMOGA	SHIKARPUR	MADRAVALLI
1486	Karnataka	SHIMOGA	SHIKARPUR	--NoName--565
1487	Karnataka	SHIMOGA	SHIKARPUR	YAREKOPPA
1488	Karnataka	SHIMOGA	SHIKARPUR	MATHIGHATTA
1489	Karnataka	SHIMOGA	SHIKARPUR	KITTADAHALLI
1490	Karnataka	SHIMOGA	SHIKARPUR	KUTRAHALLI
1491	Karnataka	SHIMOGA	SHIMOGA	KUMSI
1492	Karnataka	SHIMOGA	SHIMOGA	KONE HOSURU
1493	Karnataka	SHIMOGA	SHIMOGA	THUPPURU
1494	Karnataka	SHIMOGA	SHIMOGA	--NoName--575
1495	Karnataka	SHIMOGA	SHIMOGA	ALKUNI
1496	Karnataka	SHIMOGA	SHIMOGA	VITAGONDANA KOPPA
1497	Karnataka	SHIMOGA	SHIMOGA	KESAVINA KATTE
1498	Karnataka	SHIMOGA	SHIMOGA	SANNIVASA
1499	Karnataka	SHIMOGA	SHIMOGA	KEMPENA KOPPA
1500	Karnataka	SHIMOGA	SHIMOGA	HORABYLU
1501	Karnataka	SHIMOGA	SHIMOGA	BHAIRANAKOPPA
1502	Karnataka	SHIMOGA	SHIMOGA	KORAGI
1503	Karnataka	SHIMOGA	SHIMOGA	SHANTHI KERE
1504	Karnataka	SHIMOGA	SHIMOGA	SHETTI KERE
1505	Karnataka	SHIMOGA	SHIMOGA	MADE KOPPA
1506	Karnataka	SHIMOGA	SHIMOGA	MANDAGATTA
1507	Karnataka	SHIMOGA	SHIMOGA	SUDURU
1508	Karnataka	SHIMOGA	SHIMOGA	ADAGADI
1509	Karnataka	SHIMOGA	SHIMOGA	VEERAGARANA BHAIRANA KOPPA
1510	Karnataka	SHIMOGA	SHIMOGA	CHIKKAMATHALI
1511	Karnataka	SHIMOGA	SHIMOGA	--NoName--618
1512	Karnataka	SHIMOGA	SHIMOGA	ANESARA
1513	Karnataka	SHIMOGA	SHIMOGA	CHANNA HALLI
1514	Karnataka	SHIMOGA	SHIMOGA	ITTIGE HALLI
1515	Karnataka	SHIMOGA	SHIMOGA	DODDAMATHALI
1516	Karnataka	SHIMOGA	SHIMOGA	ADINA KOTTIGE
1517	Karnataka	SHIMOGA	SHIMOGA	THEVARA KOPPA
1518	Karnataka	SHIMOGA	SHIMOGA	SHIRIGERE
1519	Karnataka	SHIMOGA	SHIMOGA	THAMMADI HALLI
1520	Karnataka	SHIMOGA	SHIMOGA	--NoName--621
1521	Karnataka	SHIMOGA	SHIMOGA	THAVARE KOPPA
1522	Karnataka	SHIMOGA	SHIMOGA	GUDDADA ARAKERE
1523	Karnataka	SHIMOGA	SHIMOGA	MANJARI KOPPA
1524	Karnataka	SHIMOGA	SHIMOGA	KOODI
1525	Karnataka	SHIMOGA	SHIMOGA	--NoName--627
1526	Karnataka	SHIMOGA	SHIMOGA	HOSURU
1527	Karnataka	SHIMOGA	SHIMOGA	PURADALU
1528	Karnataka	SHIMOGA	SHIMOGA	ANUPINA KATTE
1529	Karnataka	SHIMOGA	SHIMOGA	MALE SHANKARA
1530	Karnataka	SHIMOGA	SHIMOGA	MALESHANKARA STATE FOREST
1531	Karnataka	SHIMOGA	SHIMOGA	HANUMANTHA PURA
1532	Karnataka	SHIMOGA	SHIMOGA	GOVINDAPURA
1533	Karnataka	SHIMOGA	SHIMOGA	AGASAVALLI

SI No	STATE	DIST	TALUK	Village Name
1534	Karnataka	SHIMOGA	SHIMOGA	SHETTY HALLI
1535	Karnataka	SHIMOGA	SHIMOGA	ECHAVADI
1536	Karnataka	SHIMOGA	SHIMOGA	BASAVAPURA
1537	Karnataka	SHIMOGA	SHIMOGA	SAKRE BYLU
1538	Karnataka	SHIMOGA	SHIMOGA	THATTI KERE
1539	Karnataka	SHIMOGA	SHIMOGA	HOSAKOPPA
1540	Karnataka	SHIMOGA	SHIMOGA	CHITRA SHETTY HALLI
1541	Karnataka	SHIMOGA	SHIMOGA	GAJANURU MULLAKERE
1542	Karnataka	SHIMOGA	SHIMOGA	VEERA PURA
1543	Karnataka	SHIMOGA	SHIMOGA	KUDAGALA MANE
1544	Karnataka	SHIMOGA	SHIMOGA	KUSKURU
1545	Karnataka	SHIMOGA	SHIMOGA	YARAGANALU
1546	Karnataka	SHIMOGA	SHIMOGA	KADEKAL
1547	Karnataka	SHIMOGA	SHIMOGA	HURULI HALLI
1548	Karnataka	SHIMOGA	SHIMOGA	KYDOTLU
1549	Karnataka	SHIMOGA	SHIMOGA	UMBLE BYLU
1550	Karnataka	SHIMOGA	SHIMOGA	SARI GERE
1551	Karnataka	SHIMOGA	SHIMOGA	GANIDALU
1552	Karnataka	SHIMOGA	SHIMOGA	--NoName--651
1553	Karnataka	SHIMOGA	SHIMOGA	SIDDAMAJI HOSURU
1554	Karnataka	SHIMOGA	SHIMOGA	--NoName--659
1555	Karnataka	SHIMOGA	SHIMOGA	KAKANA HOSUDI
1556	Karnataka	SHIMOGA	SHIMOGA	LINGAPURA
1557	Karnataka	SHIMOGA	THIRTHAHALLI	--NoName--636
1558	Karnataka	SHIMOGA	THIRTHAHALLI	HUMCHADAKATTE
1559	Karnataka	SHIMOGA	THIRTHAHALLI	HUTTALLI
1560	Karnataka	SHIMOGA	THIRTHAHALLI	ALUR
1561	Karnataka	SHIMOGA	THIRTHAHALLI	VATAGARU
1562	Karnataka	SHIMOGA	THIRTHAHALLI	KARAKUCHI
1563	Karnataka	SHIMOGA	THIRTHAHALLI	KESARE
1564	Karnataka	SHIMOGA	THIRTHAHALLI	YOGIMALALI
1565	Karnataka	SHIMOGA	THIRTHAHALLI	UMBLEBAILU
1566	Karnataka	SHIMOGA	THIRTHAHALLI	MUNIYUR
1567	Karnataka	SHIMOGA	THIRTHAHALLI	HIREKALLAHALLI
1568	Karnataka	SHIMOGA	THIRTHAHALLI	HANAGERE
1569	Karnataka	SHIMOGA	THIRTHAHALLI	THOREBAILU
1570	Karnataka	SHIMOGA	THIRTHAHALLI	SHANKARAPURA
1571	Karnataka	SHIMOGA	THIRTHAHALLI	CHIKKALLALLI
1572	Karnataka	SHIMOGA	THIRTHAHALLI	ALASE
1573	Karnataka	SHIMOGA	THIRTHAHALLI	MANDAKA
1574	Karnataka	SHIMOGA	THIRTHAHALLI	SHIRANALLI
1575	Karnataka	SHIMOGA	THIRTHAHALLI	BEEDE
1576	Karnataka	SHIMOGA	THIRTHAHALLI	MELINAKADAGODU
1577	Karnataka	SHIMOGA	THIRTHAHALLI	KOMBINAKAI
1578	Karnataka	SHIMOGA	THIRTHAHALLI	HEGALATHI
1579	Karnataka	SHIMOGA	THIRTHAHALLI	HOSAKOPPA
1580	Karnataka	SHIMOGA	THIRTHAHALLI	JOGIKOPPA
1581	Karnataka	SHIMOGA	THIRTHAHALLI	KEEGADI
1582	Karnataka	SHIMOGA	THIRTHAHALLI	HADIGALLU
1583	Karnataka	SHIMOGA	THIRTHAHALLI	DEMLAPURA
1584	Karnataka	SHIMOGA	THIRTHAHALLI	BASAVANAGADDE
1585	Karnataka	SHIMOGA	THIRTHAHALLI	KONANDUR
1586	Karnataka	SHIMOGA	THIRTHAHALLI	ADINASARA
1587	Karnataka	SHIMOGA	THIRTHAHALLI	AKLAPURA
1588	Karnataka	SHIMOGA	THIRTHAHALLI	HALAVANAHALLI
1589	Karnataka	SHIMOGA	THIRTHAHALLI	GARAGA
1590	Karnataka	SHIMOGA	THIRTHAHALLI	SURULI
1591	Karnataka	SHIMOGA	THIRTHAHALLI	VENKANAHALLI
1592	Karnataka	SHIMOGA	THIRTHAHALLI	KITTANDUR
1593	Karnataka	SHIMOGA	THIRTHAHALLI	KATTEKOPPA
1594	Karnataka	SHIMOGA	THIRTHAHALLI	MALLAPURA
1595	Karnataka	SHIMOGA	THIRTHAHALLI	SINGANABIDARE
1596	Karnataka	SHIMOGA	THIRTHAHALLI	SALEKOPPA
1597	Karnataka	SHIMOGA	THIRTHAHALLI	KIKKERI
1598	Karnataka	SHIMOGA	THIRTHAHALLI	TRIYAMBAKAPURA
1599	Karnataka	SHIMOGA	THIRTHAHALLI	YAMARAVALLI
1600	Karnataka	SHIMOGA	THIRTHAHALLI	HULLUKODU
1601	Karnataka	SHIMOGA	THIRTHAHALLI	TALALE
1602	Karnataka	SHIMOGA	THIRTHAHALLI	HOSAKERE
1603	Karnataka	SHIMOGA	THIRTHAHALLI	KULUNDE

SI No	STATE	DIST	TALUK	Village Name
1604	Karnataka	SHIMOGA	THIRTHAHALLI	ATTIGADDE
1605	Karnataka	SHIMOGA	THIRTHAHALLI	KUCHHALU
1606	Karnataka	SHIMOGA	THIRTHAHALLI	KHANDAKA
1607	Karnataka	SHIMOGA	THIRTHAHALLI	KALAVATHI
1608	Karnataka	SHIMOGA	THIRTHAHALLI	BOMMANAHALLI
1609	Karnataka	SHIMOGA	THIRTHAHALLI	NERALAMANE
1610	Karnataka	SHIMOGA	THIRTHAHALLI	VIRUPAPURA
1611	Karnataka	SHIMOGA	THIRTHAHALLI	THOTADAKOPPA
1612	Karnataka	SHIMOGA	THIRTHAHALLI	NERALAKOPPA
1613	Karnataka	SHIMOGA	THIRTHAHALLI	BEESU
1614	Karnataka	SHIMOGA	THIRTHAHALLI	YADAVATHI
1615	Karnataka	SHIMOGA	THIRTHAHALLI	BILUVEHARIHARAPURA
1616	Karnataka	SHIMOGA	THIRTHAHALLI	TENKABYLU
1617	Karnataka	SHIMOGA	THIRTHAHALLI	--NoName--652
1618	Karnataka	SHIMOGA	THIRTHAHALLI	NANDIGODU
1619	Karnataka	SHIMOGA	THIRTHAHALLI	UBBURU
1620	Karnataka	SHIMOGA	THIRTHAHALLI	HALAGA
1621	Karnataka	SHIMOGA	THIRTHAHALLI	KADEGADDE
1622	Karnataka	SHIMOGA	THIRTHAHALLI	NEKRAGODU
1623	Karnataka	SHIMOGA	THIRTHAHALLI	KANGALAKOPPA
1624	Karnataka	SHIMOGA	THIRTHAHALLI	BYLUBADAGI
1625	Karnataka	SHIMOGA	THIRTHAHALLI	MELINAPADARAVALLI
1626	Karnataka	SHIMOGA	THIRTHAHALLI	AGASADI
1627	Karnataka	SHIMOGA	THIRTHAHALLI	SHINDUVADI
1628	Karnataka	SHIMOGA	THIRTHAHALLI	BANDYA
1629	Karnataka	SHIMOGA	THIRTHAHALLI	HALASAVALA
1630	Karnataka	SHIMOGA	THIRTHAHALLI	TENGINAKOPPA
1631	Karnataka	SHIMOGA	THIRTHAHALLI	SHEDGAR
1632	Karnataka	SHIMOGA	THIRTHAHALLI	HOSAKODIGE
1633	Karnataka	SHIMOGA	THIRTHAHALLI	MITLA GODU
1634	Karnataka	SHIMOGA	THIRTHAHALLI	KAVERI
1635	Karnataka	SHIMOGA	THIRTHAHALLI	HEMMAKKI
1636	Karnataka	SHIMOGA	THIRTHAHALLI	LINGAPURA
1637	Karnataka	SHIMOGA	THIRTHAHALLI	TYANANDURU
1638	Karnataka	SHIMOGA	THIRTHAHALLI	YADEHALLIPAL
1639	Karnataka	SHIMOGA	THIRTHAHALLI	KUDUMALLIGE
1640	Karnataka	SHIMOGA	THIRTHAHALLI	BILUVEHARIHARAPURA
1641	Karnataka	SHIMOGA	THIRTHAHALLI	KIMMANE
1642	Karnataka	SHIMOGA	THIRTHAHALLI	KAVALEDURGA
1643	Karnataka	SHIMOGA	THIRTHAHALLI	YADAGUDDE
1644	Karnataka	SHIMOGA	THIRTHAHALLI	BEJJAVALI
1645	Karnataka	SHIMOGA	THIRTHAHALLI	BOBLI
1646	Karnataka	SHIMOGA	THIRTHAHALLI	KASAGARU
1647	Karnataka	SHIMOGA	THIRTHAHALLI	JAMBUVALLI
1648	Karnataka	SHIMOGA	THIRTHAHALLI	BEKSHIKENJIGUDDE
1649	Karnataka	SHIMOGA	THIRTHAHALLI	BOBLIHINCHUVALLI
1650	Karnataka	SHIMOGA	THIRTHAHALLI	HOSAKOPPA
1651	Karnataka	SHIMOGA	THIRTHAHALLI	HALUMAHISHI
1652	Karnataka	SHIMOGA	THIRTHAHALLI	KELAKERE
1653	Karnataka	SHIMOGA	THIRTHAHALLI	KOKKODU
1654	Karnataka	SHIMOGA	THIRTHAHALLI	HEDDURU
1655	Karnataka	SHIMOGA	THIRTHAHALLI	MAHISHI
1656	Karnataka	SHIMOGA	THIRTHAHALLI	HASANDUR
1657	Karnataka	SHIMOGA	THIRTHAHALLI	BINTALA
1658	Karnataka	SHIMOGA	THIRTHAHALLI	KUDUVALLI
1659	Karnataka	SHIMOGA	THIRTHAHALLI	KOLAGIBYLU
1660	Karnataka	SHIMOGA	THIRTHAHALLI	SHETTIGALAKOPPA
1661	Karnataka	SHIMOGA	THIRTHAHALLI	HOLEKOPPA
1662	Karnataka	SHIMOGA	THIRTHAHALLI	MUNNURHALLI
1663	Karnataka	SHIMOGA	THIRTHAHALLI	KODLU
1664	Karnataka	SHIMOGA	THIRTHAHALLI	MRUGAVADHE
1665	Karnataka	SHIMOGA	THIRTHAHALLI	ANGALAGODIGE
1666	Karnataka	SHIMOGA	THIRTHAHALLI	LAKKUNDA
1667	Karnataka	SHIMOGA	THIRTHAHALLI	Mavadi
1668	Karnataka	SHIMOGA	THIRTHAHALLI	INGLADI
1669	Karnataka	SHIMOGA	THIRTHAHALLI	HORABAILU
1670	Karnataka	SHIMOGA	THIRTHAHALLI	ALMANE
1671	Karnataka	SHIMOGA	THIRTHAHALLI	ANDAGERE
1672	Karnataka	SHIMOGA	THIRTHAHALLI	BOGARUKOPPA
1673	Karnataka	SHIMOGA	THIRTHAHALLI	BILUMANE

SI No	STATE	DIST	TALUK	Village Name
1674	Karnataka	SHIMOGA	THIRTHAHALLI	SHEDGAR
1675	Karnataka	SHIMOGA	THIRTHAHALLI	MANIKOPPA
1676	Karnataka	SHIMOGA	THIRTHAHALLI	KOLAGI
1677	Karnataka	SHIMOGA	THIRTHAHALLI	HONNEKERE
1678	Karnataka	SHIMOGA	THIRTHAHALLI	SHUNTIHAKLU
1679	Karnataka	SHIMOGA	THIRTHAHALLI	THUMBRAMANE
1680	Karnataka	SHIMOGA	THIRTHAHALLI	HURULI
1681	Karnataka	SHIMOGA	THIRTHAHALLI	--NoName--688
1682	Karnataka	SHIMOGA	THIRTHAHALLI	SHIVALLI
1683	Karnataka	SHIMOGA	THIRTHAHALLI	YADAMANE
1684	Karnataka	SHIMOGA	THIRTHAHALLI	HADAGINAMAKKI
1685	Karnataka	SHIMOGA	THIRTHAHALLI	HERAMBAPURA
1686	Karnataka	SHIMOGA	THIRTHAHALLI	BELLANGI
1687	Karnataka	SHIMOGA	THIRTHAHALLI	KOLIGE
1688	Karnataka	SHIMOGA	THIRTHAHALLI	HOLALURBETAGERE
1689	Karnataka	SHIMOGA	THIRTHAHALLI	KABASE
1690	Karnataka	SHIMOGA	THIRTHAHALLI	BEKKANUR
1691	Karnataka	SHIMOGA	THIRTHAHALLI	DASANAKODIGE
1692	Karnataka	SHIMOGA	THIRTHAHALLI	GURUVALLI
1693	Karnataka	SHIMOGA	THIRTHAHALLI	KEERANAKERE
1694	Karnataka	SHIMOGA	THIRTHAHALLI	SHIRURU
1695	Karnataka	SHIMOGA	THIRTHAHALLI	HOSURU
1696	Karnataka	SHIMOGA	THIRTHAHALLI	CHANGARU
1697	Karnataka	SHIMOGA	THIRTHAHALLI	HONNETALU
1698	Karnataka	SHIMOGA	THIRTHAHALLI	KUNDA
1699	Karnataka	SHIMOGA	THIRTHAHALLI	NANTUR
1700	Karnataka	SHIMOGA	THIRTHAHALLI	--NoName--712
1701	Karnataka	SHIMOGA	THIRTHAHALLI	TALLURU
1702	Karnataka	SHIMOGA	THIRTHAHALLI	BALEHALLI
1703	Karnataka	UDUPI	KARKAL	BELENJE
1704	Karnataka	UDUPI	KARKAL	NADPALU
1705	Karnataka	UDUPI	KARKAL	KUCHCHUR
1706	Karnataka	UDUPI	KARKAL	CHARA
1707	Karnataka	UDUPI	KARKAL	HEBRI
1708	Karnataka	UDUPI	KARKAL	KABBINALE
1709	Karnataka	UDUPI	KARKAL	ANDARU
1710	Karnataka	UDUPI	KARKAL	--NoName--754
1711	Karnataka	UDUPI	KARKAL	--NoName--758
1712	Karnataka	UDUPI	KARKAL	DURGA
1713	Karnataka	UDUPI	KARKAL	Mala
1714	Karnataka	UDUPI	KARKAL	--NoName--781
1715	Karnataka	UDUPI	KARKAL	NOORALBETTU
1716	Karnataka	UDUPI	KUNDAPURA	HOSOOR
1717	Karnataka	UDUPI	KUNDAPURA	--NoName--610
1718	Karnataka	UDUPI	KUNDAPURA	KOLLUR
1719	Karnataka	UDUPI	KUNDAPURA	--NoName--634
1720	Karnataka	UDUPI	KUNDAPURA	YELJITH
1721	Karnataka	UDUPI	KUNDAPURA	--NoName--638
1722	Karnataka	UDUPI	KUNDAPURA	MUDOOR
1723	Karnataka	UDUPI	KUNDAPURA	GOLIHOLE
1724	Karnataka	UDUPI	KUNDAPURA	JADKAL
1725	Karnataka	UDUPI	KUNDAPURA	IDURKUNHADI
1726	Karnataka	UDUPI	KUNDAPURA	KERADI
1727	Karnataka	UDUPI	KUNDAPURA	HALLIHOLE
1728	Karnataka	UDUPI	KUNDAPURA	ALLOOR
1729	Karnataka	UDUPI	KUNDAPURA	CHITTOOR
1730	Karnataka	UDUPI	KUNDAPURA	--NoName--656
1731	Karnataka	UDUPI	KUNDAPURA	BELLAL
1732	Karnataka	UDUPI	KUNDAPURA	VANDSE
1733	Karnataka	UDUPI	KUNDAPURA	HOSANGADI
1734	Karnataka	UDUPI	KUNDAPURA	MACHATTU
1735	Karnataka	UDUPI	KUNDAPURA	AMASEBAILU
1736	Karnataka	UDUPI	KUNDAPURA	--NoName--690
1737	Karnataka	UDUPI	KUNDAPURA	SHEDIMANE
1738	Karnataka	UDUPI	KUNDAPURA	MADAMMAKKI
1739	Karnataka	UDUPI	KUNDAPURA	--NoName--719
1740	Kerala	Idukki	Devikulam	Marayoor
1741	Kerala	Idukki	Devikulam	Keezhanthoor
1742	Kerala	Idukki	Devikulam	Kannan Devan Hills
1743	Kerala	Idukki	Devikulam	Kuttampuzha

SI No	STATE	DIST	TALUK	Village Name
1744	Kerala	Idukki	Devikulam	Kottakamboor
1745	Kerala	Idukki	Devikulam	Kanthalloor
1746	Kerala	Idukki	Devikulam	Vattavada
1747	Kerala	Idukki	Devikulam	Mankulam
1748	Kerala	Idukki	Devikulam	Mannamkandam
1749	Kerala	Idukki	Devikulam	Pallivasal
1750	Kerala	Idukki	Devikulam	Anaviratty
1751	Kerala	Idukki	Devikulam	Kunjithanny
1752	Kerala	Idukki	Devikulam	Vellathuval
1753	Kerala	Idukki	Peerumade	Upputhara
1754	Kerala	Idukki	Peerumade	Kumily
1755	Kerala	Idukki	Peerumade	Manjumala
1756	Kerala	Idukki	Peerumade	Periyar
1757	Kerala	Idukki	Peerumade	Kokkayar
1758	Kerala	Idukki	Peerumade	Peerumade
1759	Kerala	Idukki	Peerumade	Mlappara
1760	Kerala	Idukki	Peerumade	Peruvanthanam
1761	Kerala	Idukki	Thodupuzha	Kanjikuzhi
1762	Kerala	Idukki	Thodupuzha	Udumbannoor
1763	Kerala	Idukki	Thodupuzha	Idukki (Part)
1764	Kerala	Idukki	Thodupuzha	Arakkulam
1765	Kerala	Idukki	Udumbanchola	Chinnakanal
1766	Kerala	Idukki	Udumbanchola	Baisonvally
1767	Kerala	Idukki	Udumbanchola	Rajakumari
1768	Kerala	Idukki	Udumbanchola	Poopara
1769	Kerala	Idukki	Udumbanchola	Rajakkad
1770	Kerala	Idukki	Udumbanchola	Konnathady
1771	Kerala	Idukki	Udumbanchola	Santhanpara
1772	Kerala	Idukki	Udumbanchola	Kanthippara
1773	Kerala	Idukki	Udumbanchola	Vathikudy
1774	Kerala	Idukki	Udumbanchola	Chathurangapara
1775	Kerala	Idukki	Udumbanchola	Udumbanchola
1776	Kerala	Idukki	Udumbanchola	Upputhode
1777	Kerala	Idukki	Udumbanchola	Parathodu
1778	Kerala	Idukki	Udumbanchola	Kalkoonthal
1779	Kerala	Idukki	Udumbanchola	Thankamony (Part)
1780	Kerala	Idukki	Udumbanchola	Ayyappancoil
1781	Kerala	Idukki	Udumbanchola	Pampadumpara
1782	Kerala	Idukki	Udumbanchola	Kattappana
1783	Kerala	Idukki	Udumbanchola	Karunapuram
1784	Kerala	Idukki	Udumbanchola	Vandanmedu
1785	Kerala	Idukki	Udumbanchola	Anakkara
1786	Kerala	Idukki	Udumbanchola	Anavilasam
1787	Kerala	Idukki	Udumbanchola	Chakkupallam
1788	Kerala	Kannur	Thalassery	Aralam
1789	Kerala	Kannur	Thalassery	Kottiyoor
1790	Kerala	Kannur	Thalassery	Cheruvanchery
1791	Kerala	Kollam	Pathanapuram	Punnala
1792	Kerala	Kollam	Pathanapuram	Piravanthur
1793	Kerala	Kollam	Pathanapuram	Edamon
1794	Kerala	Kollam	Pathanapuram	Thenmala
1795	Kerala	Kollam	Pathanapuram	Arienkavu
1796	Kerala	Kollam	Pathanapuram	Thinkalkarikkakom
1797	Kerala	Kollam	Pathanapuram	Kulathupuzha
1798	Kerala	Kollam	Pathanapuram	Channappetta
1799	Kerala	Kottayam	Kanjirappally	Koottickal
1800	Kerala	Kottayam	Meenachil	Melukavu
1801	Kerala	Kottayam	Meenachil	Teekoy
1802	Kerala	Kottayam	Meenachil	Poonjar Thekkekara
1803	Kerala	Kozhikode	Kozhikode	Kedavur
1804	Kerala	Kozhikode	Kozhikode	Puthuppadi
1805	Kerala	Kozhikode	Kozhikode	Nellipoyil
1806	Kerala	Kozhikode	Kozhikode	Kodencheri
1807	Kerala	Kozhikode	Kozhikode	Thiruvambadi
1808	Kerala	Kozhikode	Quilandy	Chempanoda
1809	Kerala	Kozhikode	Quilandy	Rikkattapatta
1810	Kerala	Kozhikode	Vadakara	Thinoor
1811	Kerala	Kozhikode	Vadakara	Kavilumpara
1812	Kerala	Malappuram	Nilambur	Chungathara
1813	Kerala	Malappuram	Nilambur	Kurumbilangode

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1814	Kerala	Malappuram	Nilambur	Vazhikkadavu
1815	Kerala	Malappuram	Nilambur	Akampadam
1816	Kerala	Malappuram	Nilambur	Karulai
1817	Kerala	Malappuram	Nilambur	Amarambalam
1818	Kerala	Malappuram	Nilambur	Chekkode
1819	Kerala	Malappuram	Nilambur	Kalikavu
1820	Kerala	Malappuram	Nilambur	Kerala Estate
1821	Kerala	Malappuram	Nilambur	Karuvarakundu
1822	Kerala	Palakkad	Alathur	Kizhakkengeri-I
1823	Kerala	Palakkad	Chittur	Muthalamada-I
1824	Kerala	Palakkad	Chittur	Muthalamada-II
1825	Kerala	Palakkad	Chittur	Nellyampathy
1826	Kerala	Palakkad	Mannarkad	Pudur
1827	Kerala	Palakkad	Mannarkad	Padavayal
1828	Kerala	Palakkad	Mannarkad	Agali
1829	Kerala	Palakkad	Mannarkad	Kottathara
1830	Kerala	Palakkad	Mannarkad	Kallamala
1831	Kerala	Palakkad	Mannarkad	Sholayur
1832	Kerala	Palakkad	Mannarkad	Palakkayam
1833	Kerala	Palakkad	Palakkad	Puthuppariyaram-I
1834	Kerala	Palakkad	Palakkad	Malampuzha-I
1835	Kerala	Palakkad	Palakkad	Pudussery East
1836	Kerala	Pathanamthitta	Kozhenchery	Thannithode
1837	Kerala	Pathanamthitta	Kozhenchery	Aruvappulam
1838	Kerala	Pathanamthitta	Ranni	Chittar-Seethathodu
1839	Kerala	Pathanamthitta	Ranni	Kollamula
1840	Kerala	Pathanamthitta	Ranni	Perunad
1841	Kerala	Pathanamthitta	Ranni	Vadasserikkara
1842	Kerala	Thiruvananthap*	Nedumangad	Peringamala
1843	Kerala	Thiruvananthap*	Nedumangad	Thennoor
1844	Kerala	Thiruvananthap*	Nedumangad	Vithura
1845	Kerala	Thiruvananthap*	Nedumangad	Mannookara
1846	Kerala	Thiruvananthap*	Neyyattinkara	Vazhichal
1847	Kerala	Thiruvananthap*	Neyyattinkara	Kalikkad
1848	Kerala	Thiruvananthap*	Neyyattinkara	Amboory
1849	Kerala	Thrissur	Mukundapuram	Pariyaram
1850	Kerala	Wayanad	Mananthavady	Thirunelly
1851	Kerala	Wayanad	Mananthavady	Thrissilery
1852	Kerala	Wayanad	Mananthavady	Periya
1853	Kerala	Wayanad	Mananthavady	Thondernad
1854	Kerala	Wayanad	Sulthanbathery	Kidanganad
1855	Kerala	Wayanad	Sulthanbathery	Noolpuzha
1856	Kerala	Wayanad	Vythiri	Thariyode
1857	Kerala	Wayanad	Vythiri	Achooranam
1858	Kerala	Wayanad	Vythiri	Pozhuthana
1859	Kerala	Wayanad	Vythiri	Kottappadi (Part)
1860	Kerala	Wayanad	Vythiri	Chundale
1861	Kerala	Wayanad	Vythiri	Kunnathidavaka
1862	Kerala	Wayanad	Vythiri	Vellarimala
1863	Maharashtra	AHMADNAGAR	AKOLA	Bitaka
1864	Maharashtra	AHMADNAGAR	AKOLA	Shenit
1865	Maharashtra	AHMADNAGAR	AKOLA	Waranghushi
1866	Maharashtra	AHMADNAGAR	AKOLA	Jahagirdarwadi
1867	Maharashtra	AHMADNAGAR	AKOLA	Ambevangan
1868	Maharashtra	AHMADNAGAR	AKOLA	Panjare
1869	Maharashtra	AHMADNAGAR	AKOLA	Ghatghar
1870	Maharashtra	AHMADNAGAR	AKOLA	Udadawane
1871	Maharashtra	AHMADNAGAR	AKOLA	Murshet
1872	Maharashtra	AHMADNAGAR	AKOLA	--NoName--33
1873	Maharashtra	AHMADNAGAR	AKOLA	Shinganwadi
1874	Maharashtra	AHMADNAGAR	AKOLA	Samrad
1875	Maharashtra	AHMADNAGAR	AKOLA	Ratanwadi
1876	Maharashtra	AHMADNAGAR	AKOLA	Shirpunje Bk.
1877	Maharashtra	AHMADNAGAR	AKOLA	Koltembhe
1878	Maharashtra	AHMADNAGAR	AKOLA	Dhamanvan
1879	Maharashtra	AHMADNAGAR	AKOLA	Kumshet
1880	Maharashtra	AHMADNAGAR	AKOLA	Shirpunje Kh.
1881	Maharashtra	AHMADNAGAR	AKOLA	Shelad
1882	Maharashtra	AHMADNAGAR	AKOLA	Shiswad
1883	Maharashtra	AHMADNAGAR	AKOLA	Ambit

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1884	Maharashtra	AHMADNAGAR	AKOLA	Shilvandi
1885	Maharashtra	AHMADNAGAR	AKOLA	Lavhali Otur
1886	Maharashtra	AHMADNAGAR	AKOLA	Paithan
1887	Maharashtra	AHMADNAGAR	AKOLA	Pachanai
1888	Maharashtra	AHMADNAGAR	AKOLA	Kotul
1889	Maharashtra	AHMADNAGAR	AKOLA	Lavhali Kotul
1890	Maharashtra	AHMADNAGAR	AKOLA	Ambhol
1891	Maharashtra	AHMADNAGAR	AKOLA	Shinde
1892	Maharashtra	AHMADNAGAR	AKOLA	Somalwadi
1893	Maharashtra	AHMADNAGAR	AKOLA	Tale
1894	Maharashtra	AHMADNAGAR	AKOLA	Kothale
1895	Maharashtra	AHMADNAGAR	AKOLA	Vihir
1896	Maharashtra	AHMADNAGAR	AKOLA	Abit Khind
1897	Maharashtra	AHMADNAGAR	AKOLA	Palsunde
1898	Maharashtra	AHMADNAGAR	AKOLA	Umbarwadi
1899	Maharashtra	AHMADNAGAR	AKOLA	Phophasandi
1900	Maharashtra	AHMADNAGAR	AKOLA	Satewadi
1901	Maharashtra	AHMADNAGAR	AKOLA	Keli Otur
1902	Maharashtra	AHMADNAGAR	AKOLA	Garwadi
1903	Maharashtra	AHMADNAGAR	AKOLA	Esarthav
1904	Maharashtra	AHMADNAGAR	AKOLA	Khetewadi
1905	Maharashtra	DHULE	SAKRI	Dhamandhar
1906	Maharashtra	DHULE	SAKRI	Shenwad
1907	Maharashtra	DHULE	SAKRI	Vardadi
1908	Maharashtra	DHULE	SAKRI	Mohagaon
1909	Maharashtra	DHULE	SAKRI	Kalgaon
1910	Maharashtra	KOLHAPUR	AJRA	Hajgoli Kh.
1911	Maharashtra	KOLHAPUR	AJRA	Vinayakwadi
1912	Maharashtra	KOLHAPUR	AJRA	Medhewadi
1913	Maharashtra	KOLHAPUR	AJRA	Velawatti
1914	Maharashtra	KOLHAPUR	AJRA	Parpoli
1915	Maharashtra	KOLHAPUR	AJRA	Dardewadi
1916	Maharashtra	KOLHAPUR	AJRA	Haloli
1917	Maharashtra	KOLHAPUR	AJRA	Gavase
1918	Maharashtra	KOLHAPUR	AJRA	Suleran
1919	Maharashtra	KOLHAPUR	AJRA	Kitvade
1920	Maharashtra	KOLHAPUR	AJRA	Ambade
1921	Maharashtra	KOLHAPUR	AJRA	Awandi
1922	Maharashtra	KOLHAPUR	AJRA	Uchangi
1923	Maharashtra	KOLHAPUR	AJRA	--NoName--223
1924	Maharashtra	KOLHAPUR	AJRA	Polgaon
1925	Maharashtra	KOLHAPUR	AJRA	Satewadi
1926	Maharashtra	KOLHAPUR	AJRA	Chafavade
1927	Maharashtra	KOLHAPUR	AJRA	Latagaon
1928	Maharashtra	KOLHAPUR	AJRA	Erandol
1929	Maharashtra	KOLHAPUR	AJRA	Chitale
1930	Maharashtra	KOLHAPUR	BAVDA	Nivade
1931	Maharashtra	KOLHAPUR	BAVDA	Vesarde
1932	Maharashtra	KOLHAPUR	BAVDA	Taliye Bk.
1933	Maharashtra	KOLHAPUR	BAVDA	Kode Bk
1934	Maharashtra	KOLHAPUR	BAVDA	Kode Kh.
1935	Maharashtra	KOLHAPUR	BAVDA	Mandur
1936	Maharashtra	KOLHAPUR	BAVDA	Mandukali
1937	Maharashtra	KOLHAPUR	BAVDA	Andur
1938	Maharashtra	KOLHAPUR	BAVDA	Khokurle
1939	Maharashtra	KOLHAPUR	BAVDA	Asalaj
1940	Maharashtra	KOLHAPUR	BAVDA	Dhundavade
1941	Maharashtra	KOLHAPUR	BAVDA	Vesaraf
1942	Maharashtra	KOLHAPUR	BAVDA	Palsambe
1943	Maharashtra	KOLHAPUR	BAVDA	Saitavade.
1944	Maharashtra	KOLHAPUR	BAVDA	Sangashi
1945	Maharashtra	KOLHAPUR	BAVDA	Sheloshi
1946	Maharashtra	KOLHAPUR	BAVDA	Jargi
1947	Maharashtra	KOLHAPUR	BAVDA	Katali
1948	Maharashtra	KOLHAPUR	BAVDA	Kadave
1949	Maharashtra	KOLHAPUR	BAVDA	Borbet
1950	Maharashtra	KOLHAPUR	BAVDA	Garivade
1951	Maharashtra	KOLHAPUR	BAVDA	Narveli
1952	Maharashtra	KOLHAPUR	BAVDA	Baveli
1953	Maharashtra	KOLHAPUR	BAVDA	Taliye Kh.

SI No	STATE	DIST	TALUK	Village Name
1954	Maharashtra	KOLHAPUR	BHUDRAGAD	Hanbarwadi
1955	Maharashtra	KOLHAPUR	BHUDRAGAD	Girgaon.
1956	Maharashtra	KOLHAPUR	BHUDRAGAD	Phaye
1957	Maharashtra	KOLHAPUR	BHUDRAGAD	Phanaswadi
1958	Maharashtra	KOLHAPUR	BHUDRAGAD	Devakewadi
1959	Maharashtra	KOLHAPUR	BHUDRAGAD	Khedge
1960	Maharashtra	KOLHAPUR	BHUDRAGAD	Murukate
1961	Maharashtra	KOLHAPUR	BHUDRAGAD	Bidri
1962	Maharashtra	KOLHAPUR	BHUDRAGAD	Vasnoli
1963	Maharashtra	KOLHAPUR	BHUDRAGAD	Padkhambe
1964	Maharashtra	KOLHAPUR	BHUDRAGAD	Shivdav
1965	Maharashtra	KOLHAPUR	BHUDRAGAD	Bediv
1966	Maharashtra	KOLHAPUR	BHUDRAGAD	Sonurli
1967	Maharashtra	KOLHAPUR	BHUDRAGAD	Anturli
1968	Maharashtra	KOLHAPUR	BHUDRAGAD	Kudtarwadi
1969	Maharashtra	KOLHAPUR	BHUDRAGAD	Navale
1970	Maharashtra	KOLHAPUR	BHUDRAGAD	Megholi
1971	Maharashtra	KOLHAPUR	BHUDRAGAD	Mhasarang
1972	Maharashtra	KOLHAPUR	BHUDRAGAD	Vesarde
1973	Maharashtra	KOLHAPUR	BHUDRAGAD	Devarde
1974	Maharashtra	KOLHAPUR	BHUDRAGAD	Palyachahuda
1975	Maharashtra	KOLHAPUR	BHUDRAGAD	Mathagaon
1976	Maharashtra	KOLHAPUR	BHUDRAGAD	Karivade
1977	Maharashtra	KOLHAPUR	BHUDRAGAD	Chikkewadi
1978	Maharashtra	KOLHAPUR	BHUDRAGAD	Antivade
1979	Maharashtra	KOLHAPUR	BHUDRAGAD	Mani
1980	Maharashtra	KOLHAPUR	BHUDRAGAD	Chivale
1981	Maharashtra	KOLHAPUR	BHUDRAGAD	Dele
1982	Maharashtra	KOLHAPUR	CHANDGAD	Dhamapur
1983	Maharashtra	KOLHAPUR	CHANDGAD	Pundra
1984	Maharashtra	KOLHAPUR	CHANDGAD	Kanur Kh.
1985	Maharashtra	KOLHAPUR	CHANDGAD	Sadegudwale
1986	Maharashtra	KOLHAPUR	CHANDGAD	Bhogoli
1987	Maharashtra	KOLHAPUR	CHANDGAD	Pilani
1988	Maharashtra	KOLHAPUR	CHANDGAD	Kokare
1989	Maharashtra	KOLHAPUR	CHANDGAD	Nagave
1990	Maharashtra	KOLHAPUR	CHANDGAD	Umagaon
1991	Maharashtra	KOLHAPUR	CHANDGAD	Jambre
1992	Maharashtra	KOLHAPUR	CHANDGAD	Gudawale Khalsa
1993	Maharashtra	KOLHAPUR	CHANDGAD	Isapur
1994	Maharashtra	KOLHAPUR	CHANDGAD	Jelugade
1995	Maharashtra	KOLHAPUR	CHANDGAD	Waghotre
1996	Maharashtra	KOLHAPUR	CHANDGAD	Kitvade
1997	Maharashtra	KOLHAPUR	CHANDGAD	Mirwel
1998	Maharashtra	KOLHAPUR	CHANDGAD	Kalasgade
1999	Maharashtra	KOLHAPUR	CHANDGAD	Hajagoli
2000	Maharashtra	KOLHAPUR	CHANDGAD	Kodali
2001	Maharashtra	KOLHAPUR	CHANDGAD	Khalsa Mhalunge
2002	Maharashtra	KOLHAPUR	CHANDGAD	Kolik
2003	Maharashtra	KOLHAPUR	PANHALA	Patpanhala
2004	Maharashtra	KOLHAPUR	PANHALA	Washi
2005	Maharashtra	KOLHAPUR	PANHALA	Kaurwadi
2006	Maharashtra	KOLHAPUR	PANHALA	Manwad
2007	Maharashtra	KOLHAPUR	PANHALA	Kisrul
2008	Maharashtra	KOLHAPUR	PANHALA	Mugadewadi
2009	Maharashtra	KOLHAPUR	PANHALA	Pohalwadi
2010	Maharashtra	KOLHAPUR	PANHALA	Kaljawade
2011	Maharashtra	KOLHAPUR	PANHALA	Padasali
2012	Maharashtra	KOLHAPUR	PANHALA	Kolik
2013	Maharashtra	KOLHAPUR	PANHALA	Pombre
2014	Maharashtra	KOLHAPUR	PANHALA	Gothane
2015	Maharashtra	KOLHAPUR	PANHALA	Harpavade
2016	Maharashtra	KOLHAPUR	PANHALA	Panore
2017	Maharashtra	KOLHAPUR	RADHANAGARI	Konoli Tarf Asandoli
2018	Maharashtra	KOLHAPUR	RADHANAGARI	Kandalgaon
2019	Maharashtra	KOLHAPUR	RADHANAGARI	Rai
2020	Maharashtra	KOLHAPUR	RADHANAGARI	Manbet
2021	Maharashtra	KOLHAPUR	RADHANAGARI	Padasali
2022	Maharashtra	KOLHAPUR	RADHANAGARI	Piral
2023	Maharashtra	KOLHAPUR	RADHANAGARI	Padali

SI No	STATE	DIST	TALUK	Village Name
2024	Maharashtra	KOLHAPUR	RADHANAGARI	Phejiwade
2025	Maharashtra	KOLHAPUR	RADHANAGARI	Karanjphen
2026	Maharashtra	KOLHAPUR	RADHANAGARI	Olavan
2027	Maharashtra	KOLHAPUR	RADHANAGARI	Shiroli
2028	Maharashtra	KOLHAPUR	RADHANAGARI	Savardhan
2029	Maharashtra	KOLHAPUR	RADHANAGARI	Radhanagari
2030	Maharashtra	KOLHAPUR	RADHANAGARI	Banachiwadi
2031	Maharashtra	KOLHAPUR	RADHANAGARI	New Karanje
2032	Maharashtra	KOLHAPUR	RADHANAGARI	Ramanwadi
2033	Maharashtra	KOLHAPUR	RADHANAGARI	Farale
2034	Maharashtra	KOLHAPUR	RADHANAGARI	Patpanhala
2035	Maharashtra	KOLHAPUR	RADHANAGARI	Aini
2036	Maharashtra	KOLHAPUR	RADHANAGARI	--NoName--198
2037	Maharashtra	KOLHAPUR	RADHANAGARI	Rajapur
2038	Maharashtra	KOLHAPUR	RADHANAGARI	--NoName--199
2039	Maharashtra	KOLHAPUR	RADHANAGARI	--NoName--200
2040	Maharashtra	KOLHAPUR	RADHANAGARI	--NoName--201
2041	Maharashtra	KOLHAPUR	RADHANAGARI	--NoName--202
2042	Maharashtra	KOLHAPUR	RADHANAGARI	--NoName--203
2043	Maharashtra	KOLHAPUR	RADHANAGARI	--NoName--204
2044	Maharashtra	KOLHAPUR	RADHANAGARI	--NoName--206
2045	Maharashtra	KOLHAPUR	RADHANAGARI	Chafodi Tarf Ainghol
2046	Maharashtra	KOLHAPUR	RADHANAGARI	Savarde
2047	Maharashtra	KOLHAPUR	RADHANAGARI	Gawathanwadi
2048	Maharashtra	KOLHAPUR	RADHANAGARI	Wadachiwadi
2049	Maharashtra	KOLHAPUR	RADHANAGARI	Adoli
2050	Maharashtra	KOLHAPUR	RADHANAGARI	Dubalewadi
2051	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--179
2052	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--180
2053	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--181
2054	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--182
2055	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--183
2056	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--184
2057	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--186
2058	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--187
2059	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--188
2060	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--189
2061	Maharashtra	KOLHAPUR	SHAHUWADI	Ukhalu
2062	Maharashtra	KOLHAPUR	SHAHUWADI	Ud giri
2063	Maharashtra	KOLHAPUR	SHAHUWADI	Shirale Tarf Warun
2064	Maharashtra	KOLHAPUR	SHAHUWADI	Kandavan
2065	Maharashtra	KOLHAPUR	SHAHUWADI	Malgaon
2066	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--190
2067	Maharashtra	KOLHAPUR	SHAHUWADI	Jambur
2068	Maharashtra	KOLHAPUR	SHAHUWADI	Palasvade
2069	Maharashtra	KOLHAPUR	SHAHUWADI	Virale
2070	Maharashtra	KOLHAPUR	SHAHUWADI	Paraleninai
2071	Maharashtra	KOLHAPUR	SHAHUWADI	Pusarle
2072	Maharashtra	KOLHAPUR	SHAHUWADI	Wakoli
2073	Maharashtra	KOLHAPUR	SHAHUWADI	AMBA
2074	Maharashtra	KOLHAPUR	SHAHUWADI	Talavade
2075	Maharashtra	KOLHAPUR	SHAHUWADI	Chalanwadi
2076	Maharashtra	KOLHAPUR	SHAHUWADI	Masnoli
2077	Maharashtra	KOLHAPUR	SHAHUWADI	Humbavali
2078	Maharashtra	KOLHAPUR	SHAHUWADI	Gholasvade
2079	Maharashtra	KOLHAPUR	SHAHUWADI	Jawali
2080	Maharashtra	KOLHAPUR	SHAHUWADI	Kasarde
2081	Maharashtra	KOLHAPUR	SHAHUWADI	--NoName--192
2082	Maharashtra	KOLHAPUR	SHAHUWADI	Dhanagarwadi
2083	Maharashtra	KOLHAPUR	SHAHUWADI	Gajapur
2084	Maharashtra	KOLHAPUR	SHAHUWADI	Yelan J.Gai
2085	Maharashtra	KOLHAPUR	SHAHUWADI	Ainwadi
2086	Maharashtra	KOLHAPUR	SHAHUWADI	Mhalasvade
2087	Maharashtra	KOLHAPUR	SHAHUWADI	Gelavade
2088	Maharashtra	KOLHAPUR	SHAHUWADI	Panundre
2089	Maharashtra	KOLHAPUR	SHAHUWADI	Shirale Tarf Malkapur
2090	Maharashtra	KOLHAPUR	SHAHUWADI	Girgaon
2091	Maharashtra	KOLHAPUR	SHAHUWADI	Parivane
2092	Maharashtra	KOLHAPUR	SHAHUWADI	Manjare.
2093	Maharashtra	KOLHAPUR	SHAHUWADI	Burambal

SI No	STATE	DIST	TALUK	Village Name
2094	Maharashtra	KOLHAPUR	SHAHUWADI	Sonurle
2095	Maharashtra	KOLHAPUR	SHAHUWADI	Yelvadi
2096	Maharashtra	KOLHAPUR	SHAHUWADI	Mosum
2097	Maharashtra	KOLHAPUR	SHAHUWADI	Kante
2098	Maharashtra	KOLHAPUR	SHAHUWADI	Anuskura
2099	Maharashtra	KOLHAPUR	SHAHUWADI	Barki
2100	Maharashtra	KOLHAPUR	SHAHUWADI	Savardi
2101	Maharashtra	KOLHAPUR	SHAHUWADI	Injoli
2102	Maharashtra	NANDURBAR	NAWAPUR	Kareghat
2103	Maharashtra	NANDURBAR	NAWAPUR	Khekada
2104	Maharashtra	NASHIK	BAGLAN	Golwad
2105	Maharashtra	NASHIK	BAGLAN	Jad
2106	Maharashtra	NASHIK	BAGLAN	Ajande
2107	Maharashtra	NASHIK	BAGLAN	Bordaiwat
2108	Maharashtra	NASHIK	BAGLAN	Bhimkhet
2109	Maharashtra	NASHIK	BAGLAN	Jakhod
2110	Maharashtra	NASHIK	BAGLAN	Waghambe
2111	Maharashtra	NASHIK	BAGLAN	Bhawade
2112	Maharashtra	NASHIK	BAGLAN	Manur
2113	Maharashtra	NASHIK	BAGLAN	Salwan
2114	Maharashtra	NASHIK	BAGLAN	Malgaon Kh.
2115	Maharashtra	NASHIK	BAGLAN	Vathode
2116	Maharashtra	NASHIK	BAGLAN	Kelzar
2117	Maharashtra	NASHIK	BAGLAN	Tatani
2118	Maharashtra	NASHIK	BAGLAN	Wadi Chaulher
2119	Maharashtra	NASHIK	DINDORI	Deosane
2120	Maharashtra	NASHIK	DINDORI	Mokhnal
2121	Maharashtra	NASHIK	DINDORI	Dehare
2122	Maharashtra	NASHIK	DINDORI	Palasvahir
2123	Maharashtra	NASHIK	DINDORI	Goldari
2124	Maharashtra	NASHIK	IGATPURI	Dhargaon
2125	Maharashtra	NASHIK	IGATPURI	Walvahir
2126	Maharashtra	NASHIK	IGATPURI	Tringalwadi
2127	Maharashtra	NASHIK	IGATPURI	Chinchale Khair
2128	Maharashtra	NASHIK	IGATPURI	Bhandar darawadi
2129	Maharashtra	NASHIK	IGATPURI	Manjargaon
2130	Maharashtra	NASHIK	IGATPURI	Kurungwadi
2131	Maharashtra	NASHIK	IGATPURI	Jamunde
2132	Maharashtra	NASHIK	KALWAN	Malagaon Bk.
2133	Maharashtra	NASHIK	KALWAN	Supale Digar
2134	Maharashtra	NASHIK	KALWAN	Umbardhe
2135	Maharashtra	NASHIK	KALWAN	Sidharthanagar
2136	Maharashtra	NASHIK	KALWAN	Koswan
2137	Maharashtra	NASHIK	KALWAN	Virshet
2138	Maharashtra	NASHIK	KALWAN	Dhanoli
2139	Maharashtra	NASHIK	KALWAN	Bhandane (Hatgad)
2140	Maharashtra	NASHIK	KALWAN	Dare Bhanagi
2141	Maharashtra	NASHIK	KALWAN	Dharde Digar
2142	Maharashtra	NASHIK	KALWAN	Shrungarwadi
2143	Maharashtra	NASHIK	KALWAN	Mohobari
2144	Maharashtra	NASHIK	KALWAN	Daregaon Hatgad
2145	Maharashtra	NASHIK	KALWAN	Inshi
2146	Maharashtra	NASHIK	KALWAN	Kosurde
2147	Maharashtra	NASHIK	KALWAN	Karambhel Hatgad
2148	Maharashtra	NASHIK	KALWAN	Amdar
2149	Maharashtra	NASHIK	KALWAN	Jamle pale
2150	Maharashtra	NASHIK	KALWAN	Dahyane (Otur)
2151	Maharashtra	NASHIK	KALWAN	Jamshet
2152	Maharashtra	NASHIK	KALWAN	Bhusani
2153	Maharashtra	NASHIK	KALWAN	Kurdane (Otur)
2154	Maharashtra	NASHIK	KALWAN	Daregaonwani
2155	Maharashtra	NASHIK	KALWAN	Pimpri Markanda
2156	Maharashtra	NASHIK	KALWAN	Saptashrungagad
2157	Maharashtra	NASHIK	KALWAN	Mehadar
2158	Maharashtra	NASHIK	KALWAN	Wadale[Wani]
2159	Maharashtra	NASHIK	KALWAN	Machidhodap
2160	Maharashtra	NASHIK	PEINT	Amdongra
2161	Maharashtra	NASHIK	PEINT	Sadadpada
2162	Maharashtra	NASHIK	PEINT	Gandole
2163	Maharashtra	NASHIK	PEINT	Kapurne

SI No	STATE	DIST	TALUK	Village Name
2164	Maharashtra	NASHIK	PEINT	Kayare
2165	Maharashtra	NASHIK	PEINT	Dabhadi
2166	Maharashtra	NASHIK	PEINT	Kumbhale
2167	Maharashtra	NASHIK	PEINT	Lavhali
2168	Maharashtra	NASHIK	PEINT	Sadadpada
2169	Maharashtra	NASHIK	PEINT	Belpada
2170	Maharashtra	NASHIK	PEINT	GARMAL
2171	Maharashtra	NASHIK	PEINT	Andhrute
2172	Maharashtra	NASHIK	PEINT	Tondawal
2173	Maharashtra	NASHIK	PEINT	Chafyachapada
2174	Maharashtra	NASHIK	PEINT	AMBAPANI
2175	Maharashtra	NASHIK	PEINT	Kahandolpada
2176	Maharashtra	NASHIK	PEINT	Kasatvahir
2177	Maharashtra	NASHIK	PEINT	Khadki
2178	Maharashtra	NASHIK	PEINT	Umbrad
2179	Maharashtra	NASHIK	PEINT	Borpada
2180	Maharashtra	NASHIK	PEINT	Jambhulmal
2181	Maharashtra	NASHIK	PEINT	Nachlondhi
2182	Maharashtra	NASHIK	PEINT	Murmuti
2183	Maharashtra	NASHIK	SINNAR	Gulvanch
2184	Maharashtra	NASHIK	SINNAR	Khopadi Bk.
2185	Maharashtra	NASHIK	SINNAR	Shahapur
2186	Maharashtra	NASHIK	SINNAR	Kedarpur
2187	Maharashtra	NASHIK	SINNAR	Khopadi Kh.
2188	Maharashtra	NASHIK	SURGANA	Gondune
2189	Maharashtra	NASHIK	SURGANA	Pangarne
2190	Maharashtra	NASHIK	SURGANA	Pimpalsond
2191	Maharashtra	NASHIK	SURGANA	WANGAN
2192	Maharashtra	NASHIK	SURGANA	Malgonde
2193	Maharashtra	NASHIK	SURGANA	Sundarban
2194	Maharashtra	NASHIK	SURGANA	Mohapada
2195	Maharashtra	NASHIK	SURGANA	Guhijambhulpada
2196	Maharashtra	NASHIK	SURGANA	Karanjul Surgana
2197	Maharashtra	NASHIK	SURGANA	Vijaynagar
2198	Maharashtra	NASHIK	SURGANA	Khuntavahir
2199	Maharashtra	NASHIK	SURGANA	Galbari
2200	Maharashtra	NASHIK	SURGANA	Ranvahir
2201	Maharashtra	NASHIK	SURGANA	Shrirampur
2202	Maharashtra	NASHIK	SURGANA	Udaldari
2203	Maharashtra	NASHIK	SURGANA	Rasha
2204	Maharashtra	NASHIK	SURGANA	Dolhare
2205	Maharashtra	NASHIK	SURGANA	Kathipada
2206	Maharashtra	NASHIK	SURGANA	Amzar
2207	Maharashtra	NASHIK	SURGANA	Walutzira
2208	Maharashtra	NASHIK	SURGANA	Shribhuvan
2209	Maharashtra	NASHIK	SURGANA	Karwande
2210	Maharashtra	NASHIK	SURGANA	Mothamal
2211	Maharashtra	NASHIK	SURGANA	Wangan Sule
2212	Maharashtra	NASHIK	SURGANA	Patali
2213	Maharashtra	NASHIK	SURGANA	Bendwal
2214	Maharashtra	NASHIK	SURGANA	Bhawada
2215	Maharashtra	NASHIK	SURGANA	Umbarde
2216	Maharashtra	NASHIK	SURGANA	Waghadi
2217	Maharashtra	NASHIK	SURGANA	Karanjul
2218	Maharashtra	NASHIK	SURGANA	Kotamba
2219	Maharashtra	NASHIK	SURGANA	Merdand
2220	Maharashtra	NASHIK	SURGANA	Dangrale
2221	Maharashtra	NASHIK	SURGANA	Pilukpada
2222	Maharashtra	NASHIK	SURGANA	Murumdari
2223	Maharashtra	NASHIK	SURGANA	Undohal
2224	Maharashtra	NASHIK	SURGANA	Warambhe
2225	Maharashtra	NASHIK	SURGANA	Bhenshet
2226	Maharashtra	NASHIK	SURGANA	Khobale Digar
2227	Maharashtra	NASHIK	SURGANA	Khokarvahir
2228	Maharashtra	NASHIK	SURGANA	Khirdi
2229	Maharashtra	NASHIK	SURGANA	Kahandolpada
2230	Maharashtra	NASHIK	TRIMBAKESHWAR	Chinch Ohol
2231	Maharashtra	NASHIK	TRIMBAKESHWAR	Khadakohol
2232	Maharashtra	NASHIK	TRIMBAKESHWAR	Behedpada
2233	Maharashtra	NASHIK	TRIMBAKESHWAR	Kadegahan

SI No	STATE	DIST	TALUK	Village Name
2234	Maharashtra	NASHIK	TRIMBAKESHWAR	Hatlonchi
2235	Maharashtra	NASHIK	TRIMBAKESHWAR	Ozar Khed
2236	Maharashtra	NASHIK	TRIMBAKESHWAR	Berwal
2237	Maharashtra	NASHIK	TRIMBAKESHWAR	Chinchwad
2238	Maharashtra	NASHIK	TRIMBAKESHWAR	Mahadeo Nagar
2239	Maharashtra	NASHIK	TRIMBAKESHWAR	Rayate
2240	Maharashtra	NASHIK	TRIMBAKESHWAR	Belpali
2241	Maharashtra	NASHIK	TRIMBAKESHWAR	Waygholpada
2242	Maharashtra	NASHIK	TRIMBAKESHWAR	Jategaon Bk
2243	Maharashtra	NASHIK	TRIMBAKESHWAR	Mulvad
2244	Maharashtra	NASHIK	TRIMBAKESHWAR	Rautmal
2245	Maharashtra	NASHIK	TRIMBAKESHWAR	Varasvhir
2246	Maharashtra	NASHIK	TRIMBAKESHWAR	Vatakapada
2247	Maharashtra	NASHIK	TRIMBAKESHWAR	Deola
2248	Maharashtra	NASHIK	TRIMBAKESHWAR	Nandgaon
2249	Maharashtra	NASHIK	TRIMBAKESHWAR	Welunje
2250	Maharashtra	NASHIK	TRIMBAKESHWAR	Metkawara
2251	Maharashtra	NASHIK	TRIMBAKESHWAR	Ambai
2252	Maharashtra	NASHIK	TRIMBAKESHWAR	Chokore
2253	Maharashtra	NASHIK	TRIMBAKESHWAR	Umbharande
2254	Maharashtra	NASHIK	TRIMBAKESHWAR	Metghar Killa
2255	Maharashtra	NASHIK	TRIMBAKESHWAR	Harshewadi
2256	Maharashtra	NASHIK	TRIMBAKESHWAR	Take Harsha
2257	Maharashtra	NASHIK	TRIMBAKESHWAR	Pahine
2258	Maharashtra	NASHIK	TRIMBAKESHWAR	Take Deogaon
2259	Maharashtra	NASHIK	TRIMBAKESHWAR	Met Yelyachi
2260	Maharashtra	PUNE	AMBEGAON	Pimpargane
2261	Maharashtra	PUNE	AMBEGAON	DON
2262	Maharashtra	PUNE	AMBEGAON	Aghane
2263	Maharashtra	PUNE	AMBEGAON	Ahupe
2264	Maharashtra	PUNE	AMBEGAON	MALIN
2265	Maharashtra	PUNE	AMBEGAON	Tirpad
2266	Maharashtra	PUNE	AMBEGAON	Nhaved
2267	Maharashtra	PUNE	AMBEGAON	Patan
2268	Maharashtra	PUNE	AMBEGAON	Asane
2269	Maharashtra	PUNE	AMBEGAON	Nanavade
2270	Maharashtra	PUNE	AMBEGAON	Adivare
2271	Maharashtra	PUNE	AMBEGAON	Kushire Bk.
2272	Maharashtra	PUNE	AMBEGAON	Kondhare
2273	Maharashtra	PUNE	AMBEGAON	Sakeri
2274	Maharashtra	PUNE	AMBEGAON	Panchale Kh.
2275	Maharashtra	PUNE	AMBEGAON	Panchale Bk.
2276	Maharashtra	PUNE	AMBEGAON	Phulvade
2277	Maharashtra	PUNE	AMBEGAON	Kondhaval
2278	Maharashtra	PUNE	AMBEGAON	Apati
2279	Maharashtra	PUNE	AMBEGAON	Digad
2280	Maharashtra	PUNE	AMBEGAON	Vachape
2281	Maharashtra	PUNE	AMBEGAON	Magholi
2282	Maharashtra	PUNE	AMBEGAON	Savarli
2283	Maharashtra	PUNE	AMBEGAON	Jambhori
2284	Maharashtra	PUNE	AMBEGAON	Pimpri
2285	Maharashtra	PUNE	AMBEGAON	Ambegaon
2286	Maharashtra	PUNE	AMBEGAON	Amondi
2287	Maharashtra	PUNE	AMBEGAON	Chaptewadi kanas
2288	Maharashtra	PUNE	AMBEGAON	Kalambai
2289	Maharashtra	PUNE	AMBEGAON	Terungan
2290	Maharashtra	PUNE	AMBEGAON	Phalode
2291	Maharashtra	PUNE	AMBEGAON	Dimbhe Kh.
2292	Maharashtra	PUNE	AMBEGAON	Mahalunge Tarf Ghoda
2293	Maharashtra	PUNE	AMBEGAON	RAJPUR
2294	Maharashtra	PUNE	AMBEGAON	Nigdale
2295	Maharashtra	PUNE	AMBEGAON	Chikhali
2296	Maharashtra	PUNE	AMBEGAON	Dhakale
2297	Maharashtra	PUNE	BHOR	Kurungvadi
2298	Maharashtra	PUNE	BHOR	Ketkavane (Nimme)
2299	Maharashtra	PUNE	BHOR	Guhini
2300	Maharashtra	PUNE	BHOR	Kikavi
2301	Maharashtra	PUNE	BHOR	Khulshi
2302	Maharashtra	PUNE	BHOR	Sarole
2303	Maharashtra	PUNE	BHOR	Bhutonde

SI No	STATE	DIST	TALUK	Village Name
2304	Maharashtra	PUNE	BHOR	Dere
2305	Maharashtra	PUNE	BHOR	Chandavane
2306	Maharashtra	PUNE	BHOR	Kumbale
2307	Maharashtra	PUNE	BHOR	Velvand
2308	Maharashtra	PUNE	BHOR	Bhandravali
2309	Maharashtra	PUNE	BHOR	Nanavale
2310	Maharashtra	PUNE	BHOR	Bope
2311	Maharashtra	PUNE	BHOR	Brahmanghar
2312	Maharashtra	PUNE	BHOR	Kondgaon
2313	Maharashtra	PUNE	BHOR	Sangvi (Velavade Khore)
2314	Maharashtra	PUNE	BHOR	Jayatpad
2315	Maharashtra	PUNE	BHOR	Pangari
2316	Maharashtra	PUNE	BHOR	Dehen
2317	Maharashtra	PUNE	BHOR	Nandghur
2318	Maharashtra	PUNE	BHOR	Rajivadi
2319	Maharashtra	PUNE	BHOR	Karanjgaon
2320	Maharashtra	PUNE	BHOR	Salungan
2321	Maharashtra	PUNE	BHOR	Kund
2322	Maharashtra	PUNE	BHOR	Mhasar Kh.
2323	Maharashtra	PUNE	BHOR	Mhasar Bk.
2324	Maharashtra	PUNE	BHOR	Umbarde
2325	Maharashtra	PUNE	BHOR	Shilimb
2326	Maharashtra	PUNE	BHOR	Kondhari
2327	Maharashtra	PUNE	BHOR	Dhamunashi
2328	Maharashtra	PUNE	BHOR	Karungan
2329	Maharashtra	PUNE	BHOR	Nigudaghar
2330	Maharashtra	PUNE	BHOR	Chikhalavade
2331	Maharashtra	PUNE	BHOR	Ashimpi
2332	Maharashtra	PUNE	BHOR	Venupuri
2333	Maharashtra	PUNE	BHOR	Varavand
2334	Maharashtra	PUNE	BHOR	Shirgaon
2335	Maharashtra	PUNE	BHOR	Panvhal
2336	Maharashtra	PUNE	BHOR	Mazari
2337	Maharashtra	PUNE	BHOR	Shirvali (Hirdas Maval)
2338	Maharashtra	PUNE	BHOR	Abhepuri
2339	Maharashtra	PUNE	BHOR	Dapakeghar
2340	Maharashtra	PUNE	BHOR	Pavhar Kh.
2341	Maharashtra	PUNE	BHOR	Durgadi
2342	Maharashtra	PUNE	BHOR	Gudhe
2343	Maharashtra	PUNE	BHOR	Rayari
2344	Maharashtra	PUNE	BHOR	Kudali Bk.
2345	Maharashtra	PUNE	BHOR	Kudali Kh.
2346	Maharashtra	PUNE	BHOR	Nivangan
2347	Maharashtra	PUNE	BHOR	Dhanivali
2348	Maharashtra	PUNE	BHOR	Balawadi
2349	Maharashtra	PUNE	BHOR	Korle
2350	Maharashtra	PUNE	BHOR	Ambade
2351	Maharashtra	PUNE	BHOR	Ravadi
2352	Maharashtra	PUNE	BHOR	Varodi Bk.
2353	Maharashtra	PUNE	HAVELI	Ghera Sinhgad
2354	Maharashtra	PUNE	HAVELI	Bhagatwadi
2355	Maharashtra	PUNE	HAVELI	Khamgaon Mawal
2356	Maharashtra	PUNE	HAVELI	Mogarwadi
2357	Maharashtra	PUNE	JUNNAR	Khireswar
2358	Maharashtra	PUNE	JUNNAR	Kolhewadi
2359	Maharashtra	PUNE	JUNNAR	Kopare
2360	Maharashtra	PUNE	JUNNAR	Jambhulshi
2361	Maharashtra	PUNE	JUNNAR	Sanganore
2362	Maharashtra	PUNE	JUNNAR	Mandave
2363	Maharashtra	PUNE	JUNNAR	Ambe Gavhan
2364	Maharashtra	PUNE	JUNNAR	Chilhewadi
2365	Maharashtra	PUNE	JUNNAR	Muthalne
2366	Maharashtra	PUNE	JUNNAR	Taleran
2367	Maharashtra	PUNE	JUNNAR	Pimpalgaon Joga
2368	Maharashtra	PUNE	JUNNAR	Ajanawale
2369	Maharashtra	PUNE	JUNNAR	Nimgiri
2370	Maharashtra	PUNE	JUNNAR	Devale
2371	Maharashtra	PUNE	JUNNAR	Pargaon Tarf Madh
2372	Maharashtra	PUNE	JUNNAR	Alu
2373	Maharashtra	PUNE	JUNNAR	Mandarne

SI No	STATE	DIST	TALUK	Village Name
2374	Maharashtra	PUNE	JUNNAR	Kolwadi
2375	Maharashtra	PUNE	JUNNAR	Ghatghar
2376	Maharashtra	PUNE	JUNNAR	Ahinavewadi
2377	Maharashtra	PUNE	JUNNAR	Rohkadi
2378	Maharashtra	PUNE	JUNNAR	Godre
2379	Maharashtra	PUNE	JUNNAR	Phagul Gavhan
2380	Maharashtra	PUNE	JUNNAR	Pur
2381	Maharashtra	PUNE	JUNNAR	Amboli
2382	Maharashtra	PUNE	JUNNAR	Bhivade Bk.
2383	Maharashtra	PUNE	JUNNAR	Uchhil
2384	Maharashtra	PUNE	JUNNAR	Hatvij
2385	Maharashtra	PUNE	JUNNAR	Bhivade Kh.
2386	Maharashtra	PUNE	JUNNAR	Ambe
2387	Maharashtra	PUNE	JUNNAR	Pimparwadi
2388	Maharashtra	PUNE	JUNNAR	Sukalwedhe
2389	Maharashtra	PUNE	KHED	Bhorgiri
2390	Maharashtra	PUNE	KHED	Bhivegaon
2391	Maharashtra	PUNE	KHED	Karkudi
2392	Maharashtra	PUNE	KHED	Mandoshi
2393	Maharashtra	PUNE	KHED	Naiphad
2394	Maharashtra	PUNE	KHED	Tokavade
2395	Maharashtra	PUNE	KHED	Awhat
2396	Maharashtra	PUNE	KHED	Bhomale
2397	Maharashtra	PUNE	KHED	Shirgaon
2398	Maharashtra	PUNE	KHED	Wada
2399	Maharashtra	PUNE	KHED	Kharpud
2400	Maharashtra	PUNE	KHED	Virham
2401	Maharashtra	PUNE	KHED	Wandre
2402	Maharashtra	PUNE	KHED	Darakwadi
2403	Maharashtra	PUNE	KHED	Bursewadi
2404	Maharashtra	PUNE	KHED	Torne Kh
2405	Maharashtra	PUNE	KHED	Adhe
2406	Maharashtra	PUNE	KHED	Ambhu
2407	Maharashtra	PUNE	KHED	Kharawali
2408	Maharashtra	PUNE	KHED	Velhavale
2409	Maharashtra	PUNE	KHED	Palu
2410	Maharashtra	PUNE	KHED	Gadad
2411	Maharashtra	PUNE	MAWAL	Malegaon Bk.
2412	Maharashtra	PUNE	MAWAL	Sawale
2413	Maharashtra	PUNE	MAWAL	Pimpari
2414	Maharashtra	PUNE	MAWAL	Malegaon Kh.
2415	Maharashtra	PUNE	MAWAL	Kusur
2416	Maharashtra	PUNE	MAWAL	Kune Ansute
2417	Maharashtra	PUNE	MAWAL	Dahuli
2418	Maharashtra	PUNE	MAWAL	Kivale
2419	Maharashtra	PUNE	MAWAL	Borivali
2420	Maharashtra	PUNE	MAWAL	Kambare Andar Mawal
2421	Maharashtra	PUNE	MAWAL	Kashal
2422	Maharashtra	PUNE	MAWAL	Jambhavali
2423	Maharashtra	PUNE	MAWAL	Thoran
2424	Maharashtra	PUNE	MAWAL	Rakaswadi
2425	Maharashtra	PUNE	MAWAL	Shirdhe
2426	Maharashtra	PUNE	MAWAL	Kalhat
2427	Maharashtra	PUNE	MAWAL	--NoName--55
2428	Maharashtra	PUNE	MAWAL	Udhewadi
2429	Maharashtra	PUNE	MAWAL	Ukasan
2430	Maharashtra	PUNE	MAWAL	--NoName--56
2431	Maharashtra	PUNE	MAWAL	Khandashi
2432	Maharashtra	PUNE	MAWAL	Pale Nane Mawal
2433	Maharashtra	PUNE	MAWAL	Nigade
2434	Maharashtra	PUNE	MAWAL	Brahmanwadi
2435	Maharashtra	PUNE	MAWAL	Vaund
2436	Maharashtra	PUNE	MAWAL	Karanjgaon
2437	Maharashtra	PUNE	MAWAL	Kune N.m.
2438	Maharashtra	PUNE	MAWAL	Moramarwadi
2439	Maharashtra	PUNE	MAWAL	Vehergaon
2440	Maharashtra	PUNE	MAWAL	Kurvande
2441	Maharashtra	PUNE	MAWAL	Boraj
2442	Maharashtra	PUNE	MAWAL	Patan
2443	Maharashtra	PUNE	MAWAL	Dudhivare

SI No	STATE	DIST	TALUK	Village Name
2444	Maharashtra	PUNE	MAWAL	Bhaje
2445	Maharashtra	PUNE	MAWAL	Pimpaloli
2446	Maharashtra	PUNE	MAWAL	Aundholi
2447	Maharashtra	PUNE	MAWAL	Malewadi
2448	Maharashtra	PUNE	MAWAL	Apati
2449	Maharashtra	PUNE	MAWAL	Gevhande Apati
2450	Maharashtra	PUNE	MAWAL	Atvan
2451	Maharashtra	PUNE	MAWAL	Shindgaon
2452	Maharashtra	PUNE	MAWAL	Kolechafesar
2453	Maharashtra	PUNE	MAWAL	Morave
2454	Maharashtra	PUNE	MAWAL	Malavandi Thule
2455	Maharashtra	PUNE	MAWAL	Ovale
2456	Maharashtra	PUNE	MAWAL	Pusane
2457	Maharashtra	PUNE	MAWAL	Divad
2458	Maharashtra	PUNE	MAWAL	Tikona
2459	Maharashtra	PUNE	MAWAL	Shilimb
2460	Maharashtra	PUNE	MAWAL	Jovan
2461	Maharashtra	PUNE	MAWAL	Ajivali
2462	Maharashtra	PUNE	MULSHI	Devghar
2463	Maharashtra	PUNE	MULSHI	Peth Shahapur
2464	Maharashtra	PUNE	MULSHI	Ambavane
2465	Maharashtra	PUNE	MULSHI	Visakhar
2466	Maharashtra	PUNE	MULSHI	Kolawali
2467	Maharashtra	PUNE	MULSHI	Kashig
2468	Maharashtra	PUNE	MULSHI	Andhale
2469	Maharashtra	PUNE	MULSHI	Majgaon
2470	Maharashtra	PUNE	MULSHI	Saltar
2471	Maharashtra	PUNE	MULSHI	Kumbhori
2472	Maharashtra	PUNE	MULSHI	Pomgaon
2473	Maharashtra	PUNE	MULSHI	Pimpaloli
2474	Maharashtra	PUNE	MULSHI	Chandivali
2475	Maharashtra	PUNE	MULSHI	Tail Baila
2476	Maharashtra	PUNE	MULSHI	Barpe Bk.
2477	Maharashtra	PUNE	MULSHI	Jawal
2478	Maharashtra	PUNE	MULSHI	Shirvali
2479	Maharashtra	PUNE	MULSHI	Bhambarde
2480	Maharashtra	PUNE	MULSHI	Kolwan
2481	Maharashtra	PUNE	MULSHI	Nandivali
2482	Maharashtra	PUNE	MULSHI	Dongargaon
2483	Maharashtra	PUNE	MULSHI	Padalgharwadi
2484	Maharashtra	PUNE	MULSHI	Hotale
2485	Maharashtra	PUNE	MULSHI	Ekole
2486	Maharashtra	PUNE	MULSHI	Adgaon
2487	Maharashtra	PUNE	MULSHI	Valane
2488	Maharashtra	PUNE	MULSHI	Ghutake
2489	Maharashtra	PUNE	MULSHI	Bhadas Bk.
2490	Maharashtra	PUNE	MULSHI	PIMPRI
2491	Maharashtra	PUNE	MULSHI	Tata Talav
2492	Maharashtra	PUNE	MULSHI	Disali
2493	Maharashtra	PUNE	MULSHI	Mulshi Kh.
2494	Maharashtra	PUNE	MULSHI	Share
2495	Maharashtra	PUNE	MULSHI	Vandre
2496	Maharashtra	PUNE	MULSHI	Kondhawale
2497	Maharashtra	PUNE	MULSHI	Male
2498	Maharashtra	PUNE	MULSHI	Maded
2499	Maharashtra	PUNE	MULSHI	Nive
2500	Maharashtra	PUNE	MULSHI	Vitthalwadi
2501	Maharashtra	PUNE	MULSHI	Vadgaon
2502	Maharashtra	PUNE	MULSHI	Chinchwad
2503	Maharashtra	PUNE	MULSHI	Warak
2504	Maharashtra	PUNE	MULSHI	Tamhini Bk
2505	Maharashtra	PUNE	MULSHI	Lavharde
2506	Maharashtra	PUNE	MULSHI	Vegre
2507	Maharashtra	PUNE	MULSHI	Kolavade
2508	Maharashtra	PUNE	MULSHI	Temghar
2509	Maharashtra	PUNE	MULSHI	Vede
2510	Maharashtra	PUNE	MULSHI	Watunde
2511	Maharashtra	PUNE	MULSHI	Bhode
2512	Maharashtra	PUNE	MULSHI	Mugaon
2513	Maharashtra	PUNE	MULSHI	Bhoini

SI No	STATE	DIST	TALUK	Village Name
2514	Maharashtra	PUNE	MULSHI	Dhamanohol
2515	Maharashtra	PUNE	MULSHI	Dasave
2516	Maharashtra	PUNE	MULSHI	Kondhur
2517	Maharashtra	PUNE	MULSHI	Padalghar
2518	Maharashtra	PUNE	MULSHI	Admal
2519	Maharashtra	PUNE	MULSHI	Palase
2520	Maharashtra	PUNE	MULSHI	Koloshi
2521	Maharashtra	PUNE	MULSHI	Wadavali
2522	Maharashtra	PUNE	MULSHI	Sakhari
2523	Maharashtra	PUNE	MULSHI	Gadale
2524	Maharashtra	PUNE	MULSHI	Saiv Kh
2525	Maharashtra	PUNE	MULSHI	Mose Kh.
2526	Maharashtra	PUNE	MULSHI	Dhadawali
2527	Maharashtra	PUNE	MULSHI	Tav
2528	Maharashtra	PUNE	PURANDHAR	Chivhewadi
2529	Maharashtra	PUNE	PURANDHAR	PANVADI
2530	Maharashtra	PUNE	PURANDHAR	Gherapurandhar
2531	Maharashtra	PUNE	PURANDHAR	Ketkawale
2532	Maharashtra	PUNE	PURANDHAR	Bandhalwadi
2533	Maharashtra	PUNE	PURANDHAR	Kumbhoshi
2534	Maharashtra	PUNE	PURANDHAR	Dawanewadi
2535	Maharashtra	PUNE	PURANDHAR	Satalwadi
2536	Maharashtra	PUNE	PURANDHAR	Pingori
2537	Maharashtra	PUNE	VELHE	Mose Bk
2538	Maharashtra	PUNE	VELHE	Vadghar
2539	Maharashtra	PUNE	VELHE	Dapsare
2540	Maharashtra	PUNE	VELHE	Gholapghar
2541	Maharashtra	PUNE	VELHE	Kambegi
2542	Maharashtra	PUNE	VELHE	Balvadi
2543	Maharashtra	PUNE	VELHE	Kadhve
2544	Maharashtra	PUNE	VELHE	--NoName--125
2545	Maharashtra	PUNE	VELHE	Ambegaon Bk
2546	Maharashtra	PUNE	VELHE	Kurtavadi
2547	Maharashtra	PUNE	VELHE	Kasedi
2548	Maharashtra	PUNE	VELHE	Ranjane
2549	Maharashtra	PUNE	VELHE	Ghodkhal
2550	Maharashtra	PUNE	VELHE	Gondekhal
2551	Maharashtra	PUNE	VELHE	Givashi
2552	Maharashtra	PUNE	VELHE	Ghodshet
2553	Maharashtra	PUNE	VELHE	Shirkoli
2554	Maharashtra	PUNE	VELHE	Ghol
2555	Maharashtra	PUNE	VELHE	Thangaon
2556	Maharashtra	PUNE	VELHE	Tekpole
2557	Maharashtra	PUNE	VELHE	Mangaon
2558	Maharashtra	PUNE	VELHE	Pole
2559	Maharashtra	PUNE	VELHE	Antroli
2560	Maharashtra	PUNE	VELHE	Khanu
2561	Maharashtra	PUNE	VELHE	Nivi
2562	Maharashtra	PUNE	VELHE	Ghisar
2563	Maharashtra	PUNE	VELHE	Velhe Bk.
2564	Maharashtra	PUNE	VELHE	Bopalghar
2565	Maharashtra	PUNE	VELHE	Chandar
2566	Maharashtra	PUNE	VELHE	Brahmanghar
2567	Maharashtra	PUNE	VELHE	Khodad
2568	Maharashtra	PUNE	VELHE	Velhe Bk. Ghera
2569	Maharashtra	PUNE	VELHE	Bhatti Wagdra
2570	Maharashtra	PUNE	VELHE	Gevhande
2571	Maharashtra	PUNE	VELHE	Charhat Wadi
2572	Maharashtra	PUNE	VELHE	Mohari
2573	Maharashtra	PUNE	VELHE	Metpilaware
2574	Maharashtra	PUNE	VELHE	Harpud
2575	Maharashtra	PUNE	VELHE	Varoti Bk
2576	Maharashtra	PUNE	VELHE	Kolambi
2577	Maharashtra	PUNE	VELHE	Jadhavwadi
2578	Maharashtra	PUNE	VELHE	Singapur
2579	Maharashtra	PUNE	VELHE	Dadvadi
2580	Maharashtra	PUNE	VELHE	PIMPRI
2581	Maharashtra	PUNE	VELHE	Ekalgaon
2582	Maharashtra	PUNE	VELHE	Barshicha Mal
2583	Maharashtra	PUNE	VELHE	Pal Kh.

SI No	STATE	DIST	TALUK	Village Name
2584	Maharashtra	PUNE	VELHE	Varoti Kh.
2585	Maharashtra	PUNE	VELHE	Asani Manjai
2586	Maharashtra	PUNE	VELHE	Khopde Wadi
2587	Maharashtra	PUNE	VELHE	Gunjavane
2588	Maharashtra	PUNE	VELHE	Pasali
2589	Maharashtra	PUNE	VELHE	Bhordi
2590	Maharashtra	PUNE	VELHE	Majgaon
2591	Maharashtra	PUNE	VELHE	Pishawi
2592	Maharashtra	PUNE	VELHE	Gugulshi
2593	Maharashtra	PUNE	VELHE	Kelad
2594	Maharashtra	PUNE	VELHE	Nigde Kh
2595	Maharashtra	PUNE	VELHE	Pangari
2596	Maharashtra	PUNE	VELHE	Karnavadi
2597	Maharashtra	RAIGARH	KARJAT	Pashane
2598	Maharashtra	RAIGARH	KARJAT	Oلمان
2599	Maharashtra	RAIGARH	KARJAT	Chai
2600	Maharashtra	RAIGARH	KARJAT	Baliware
2601	Maharashtra	RAIGARH	KARJAT	Chevane
2602	Maharashtra	RAIGARH	KARJAT	Borgaon
2603	Maharashtra	RAIGARH	KARJAT	Nandgaon
2604	Maharashtra	RAIGARH	KARJAT	Ware
2605	Maharashtra	RAIGARH	KARJAT	Kurung
2606	Maharashtra	RAIGARH	KARJAT	Ambherpada
2607	Maharashtra	RAIGARH	KARJAT	Deopada
2608	Maharashtra	RAIGARH	KARJAT	Pathraj
2609	Maharashtra	RAIGARH	KARJAT	Sugave
2610	Maharashtra	RAIGARH	KARJAT	Gudhavan
2611	Maharashtra	RAIGARH	KARJAT	Rajape
2612	Maharashtra	RAIGARH	KARJAT	Shilar
2613	Maharashtra	RAIGARH	KARJAT	Shingdhol
2614	Maharashtra	RAIGARH	KARJAT	Dhotre
2615	Maharashtra	RAIGARH	KARJAT	Jambrung
2616	Maharashtra	RAIGARH	KARJAT	DHAMNI
2617	Maharashtra	RAIGARH	KARJAT	Peth
2618	Maharashtra	RAIGARH	KARJAT	Malegaon T. Kothal Khalati
2619	Maharashtra	RAIGARH	KARJAT	Pimpalpada
2620	Maharashtra	RAIGARH	KARJAT	Hedawali
2621	Maharashtra	RAIGARH	KARJAT	Mandawane
2622	Maharashtra	RAIGARH	KARJAT	Bamnoli
2623	Maharashtra	RAIGARH	KARJAT	Potal
2624	Maharashtra	RAIGARH	KARJAT	Bhivpuri (camp)
2625	Maharashtra	RAIGARH	KARJAT	Humgaon
2626	Maharashtra	RAIGARH	KARJAT	Jambhiwali
2627	Maharashtra	RAIGARH	KARJAT	Pali T. Kothal Khalathi
2628	Maharashtra	RAIGARH	KARJAT	Saidongar
2629	Maharashtra	RAIGARH	KARJAT	Dhak
2630	Maharashtra	RAIGARH	KARJAT	Vengaon
2631	Maharashtra	RAIGARH	KARJAT	Kushiwali
2632	Maharashtra	RAIGARH	KARJAT	Tiwane
2633	Maharashtra	RAIGARH	KARJAT	Mangaon T. Wasare
2634	Maharashtra	RAIGARH	KARJAT	Sandashi
2635	Maharashtra	RAIGARH	KARJAT	Palasdari
2636	Maharashtra	RAIGARH	KARJAT	Mugape
2637	Maharashtra	RAIGARH	KARJAT	Salpe
2638	Maharashtra	RAIGARH	KARJAT	Talawali
2639	Maharashtra	RAIGARH	KARJAT	Kharwandi
2640	Maharashtra	RAIGARH	KARJAT	Kondhane
2641	Maharashtra	RAIGARH	KARJAT	Chochi
2642	Maharashtra	RAIGARH	KHALAPUR	Sondewadi
2643	Maharashtra	RAIGARH	KHALAPUR	Warose Tarf Wankhal
2644	Maharashtra	RAIGARH	KHALAPUR	Matheran (M CI)
2645	Maharashtra	RAIGARH	KHALAPUR	Borgaon Kh.
2646	Maharashtra	RAIGARH	KHALAPUR	Nadhali
2647	Maharashtra	RAIGARH	KHALAPUR	Kalote Mokashi
2648	Maharashtra	RAIGARH	KHALAPUR	Nigdoli
2649	Maharashtra	RAIGARH	KHALAPUR	Kalote Rayati
2650	Maharashtra	RAIGARH	KHALAPUR	Talavali
2651	Maharashtra	RAIGARH	KHALAPUR	Ghodivali
2652	Maharashtra	RAIGARH	KHALAPUR	Jambarung
2653	Maharashtra	RAIGARH	KHALAPUR	Umbarvira

SI No	STATE	DIST	TALUK	Village Name
2654	Maharashtra	RAIGARH	KHALAPUR	Parkhande
2655	Maharashtra	RAIGARH	KHALAPUR	Talashi
2656	Maharashtra	RAIGARH	KHALAPUR	Adoshi
2657	Maharashtra	RAIGARH	KHALAPUR	Tondali
2658	Maharashtra	RAIGARH	KHALAPUR	Khambewadi
2659	Maharashtra	RAIGARH	KHALAPUR	Gohe
2660	Maharashtra	RAIGARH	KHALAPUR	Chavani
2661	Maharashtra	RAIGARH	KHALAPUR	Ujloli
2662	Maharashtra	RAIGARH	KHALAPUR	Karambeli
2663	Maharashtra	RAIGARH	KHALAPUR	Tuksai
2664	Maharashtra	RAIGARH	MAHAD	Kawale Tarf Nate
2665	Maharashtra	RAIGARH	MAHAD	Sandoshi
2666	Maharashtra	RAIGARH	MAHAD	Karmar
2667	Maharashtra	RAIGARH	MAHAD	Warangi
2668	Maharashtra	RAIGARH	MAHAD	Bavale
2669	Maharashtra	RAIGARH	MAHAD	Punade Tarf Nate
2670	Maharashtra	RAIGARH	MAHAD	Savarat
2671	Maharashtra	RAIGARH	MAHAD	Pane
2672	Maharashtra	RAIGARH	MAHAD	Gherakilla Raigad(Raigadwadi)
2673	Maharashtra	RAIGARH	MAHAD	Vagheri
2674	Maharashtra	RAIGARH	MAHAD	Kadsari Lingana
2675	Maharashtra	RAIGARH	MAHAD	Dapoli
2676	Maharashtra	RAIGARH	MAHAD	Nerav
2677	Maharashtra	RAIGARH	MAHAD	Wagholi
2678	Maharashtra	RAIGARH	MAHAD	Panderi
2679	Maharashtra	RAIGARH	MAHAD	Warandoli
2680	Maharashtra	RAIGARH	MAHAD	Khardi
2681	Maharashtra	RAIGARH	MAHAD	Walan Kh
2682	Maharashtra	RAIGARH	MAHAD	Shevate
2683	Maharashtra	RAIGARH	MAHAD	Devghar
2684	Maharashtra	RAIGARH	MAHAD	Taloshi
2685	Maharashtra	RAIGARH	MAHAD	Ketakicha Kond
2686	Maharashtra	RAIGARH	MAHAD	Chapgaon
2687	Maharashtra	RAIGARH	MAHAD	Mandle
2688	Maharashtra	RAIGARH	MAHAD	Walan Bk
2689	Maharashtra	RAIGARH	MAHAD	Adrai
2690	Maharashtra	RAIGARH	MAHAD	Ambe Shivtar
2691	Maharashtra	RAIGARH	MAHAD	Nandgaon Kh
2692	Maharashtra	RAIGARH	MAHAD	Kusgaon
2693	Maharashtra	RAIGARH	MAHAD	Waki Kh
2694	Maharashtra	RAIGARH	MAHAD	Kolose
2695	Maharashtra	RAIGARH	MAHAD	Padavi
2696	Maharashtra	RAIGARH	MAHAD	Kinjaloli Bk
2697	Maharashtra	RAIGARH	MAHAD	Solamkond
2698	Maharashtra	RAIGARH	MAHAD	Veer
2699	Maharashtra	RAIGARH	MAHAD	Kinjaloli Kh.
2700	Maharashtra	RAIGARH	MAHAD	Kasabe Shivtar
2701	Maharashtra	RAIGARH	MAHAD	Ghurupacha Kond
2702	Maharashtra	RAIGARH	MAHAD	Dongroli
2703	Maharashtra	RAIGARH	MAHAD	Parmachi
2704	Maharashtra	RAIGARH	MAHAD	Dasgaon
2705	Maharashtra	RAIGARH	MAHAD	Wahoor
2706	Maharashtra	RAIGARH	MAHAD	Taliye
2707	Maharashtra	RAIGARH	MAHAD	Kokare Tarf Govele
2708	Maharashtra	RAIGARH	MAHAD	Dabhol
2709	Maharashtra	RAIGARH	MAHAD	Gothe Kh.
2710	Maharashtra	RAIGARH	MAHAD	Sape Tarf Govele
2711	Maharashtra	RAIGARH	MAHAD	Kiye
2712	Maharashtra	RAIGARH	MAHAD	Vadghar Kh.
2713	Maharashtra	RAIGARH	MAHAD	Gothvali
2714	Maharashtra	RAIGARH	MAHAD	Bebalghar
2715	Maharashtra	RAIGARH	MAHAD	Telange Mohalla
2716	Maharashtra	RAIGARH	MAHAD	Pimpalwadi
2717	Maharashtra	RAIGARH	MAHAD	Nadgaon Tarf Tudil
2718	Maharashtra	RAIGARH	MAHAD	Ambavali Kh.
2719	Maharashtra	RAIGARH	MAHAD	Sutarkond
2720	Maharashtra	RAIGARH	MAHAD	Pimpalkond
2721	Maharashtra	RAIGARH	MAHAD	Kondmalusare
2722	Maharashtra	RAIGARH	MAHAD	Ghavre Kond
2723	Maharashtra	RAIGARH	MAHAD	Fauji Ambavade

SI No	STATE	DIST	TALUK	Village Name
2724	Maharashtra	RAIGARH	MAHAD	Kawale Tarf Vinhere
2725	Maharashtra	RAIGARH	MAHAD	Pangari
2726	Maharashtra	RAIGARH	MAHAD	Ravtali
2727	Maharashtra	RAIGARH	MAHAD	Shingar Kond
2728	Maharashtra	RAIGARH	MAHAD	Vasap
2729	Maharashtra	RAIGARH	MAHAD	Vinhere
2730	Maharashtra	RAIGARH	MAHAD	Tamhane
2731	Maharashtra	RAIGARH	MAHAD	Phalakewadi
2732	Maharashtra	RAIGARH	MANGAON	Patnus
2733	Maharashtra	RAIGARH	MANGAON	Saje
2734	Maharashtra	RAIGARH	MANGAON	Bedgaon
2735	Maharashtra	RAIGARH	MANGAON	Bhagad
2736	Maharashtra	RAIGARH	MANGAON	Umbardi
2737	Maharashtra	RAIGARH	MANGAON	Tasgaon
2738	Maharashtra	RAIGARH	MANGAON	Yelwade
2739	Maharashtra	RAIGARH	MANGAON	Bhuvan
2740	Maharashtra	RAIGARH	MANGAON	Bondshet
2741	Maharashtra	RAIGARH	MANGAON	Sangi
2742	Maharashtra	RAIGARH	MANGAON	Kandalgaon Kh.
2743	Maharashtra	RAIGARH	MANGAON	Wave Diwali
2744	Maharashtra	RAIGARH	MANGAON	Jite
2745	Maharashtra	RAIGARH	MANGAON	Maluste
2746	Maharashtra	RAIGARH	MANGAON	Titave
2747	Maharashtra	RAIGARH	MANGAON	Kumbharte
2748	Maharashtra	RAIGARH	MANGAON	Borawali
2749	Maharashtra	RAIGARH	MANGAON	Sakhalewadi
2750	Maharashtra	RAIGARH	MANGAON	Shirsad
2751	Maharashtra	RAIGARH	MANGAON	Nivi
2752	Maharashtra	RAIGARH	MANGAON	Nagroli
2753	Maharashtra	RAIGARH	MANGAON	Kumbhe
2754	Maharashtra	RAIGARH	MANGAON	Manjurne
2755	Maharashtra	RAIGARH	MANGAON	Mashidwadi
2756	Maharashtra	RAIGARH	MANGAON	Jor
2757	Maharashtra	RAIGARH	MANGAON	Karambeli
2758	Maharashtra	RAIGARH	MANGAON	Palasgaon Kh.
2759	Maharashtra	RAIGARH	MANGAON	Kadapur
2760	Maharashtra	RAIGARH	MANGAON	Borghar Tarf Kharavali
2761	Maharashtra	RAIGARH	MANGAON	Gharoshi
2762	Maharashtra	RAIGARH	MANGAON	Dongroli
2763	Maharashtra	RAIGARH	MANGAON	Kavilvahal Kh.
2764	Maharashtra	RAIGARH	MANGAON	Waghose
2765	Maharashtra	RAIGARH	MANGAON	Chapadi
2766	Maharashtra	RAIGARH	MANGAON	Kumshet
2767	Maharashtra	RAIGARH	MANGAON	Manjarwane
2768	Maharashtra	RAIGARH	MANGAON	Panhalghar Kh
2769	Maharashtra	RAIGARH	MANGAON	Shilim
2770	Maharashtra	RAIGARH	MANGAON	Govele Kond
2771	Maharashtra	RAIGARH	MANGAON	Alsunde
2772	Maharashtra	RAIGARH	MANGAON	Kushede Tarf Govele
2773	Maharashtra	RAIGARH	MANGAON	--NoName--130
2774	Maharashtra	RAIGARH	MANGAON	Harkol kond
2775	Maharashtra	RAIGARH	MANGAON	Harkol
2776	Maharashtra	RAIGARH	MANGAON	Wadpale
2777	Maharashtra	RAIGARH	MANGAON	Lakhapale
2778	Maharashtra	RAIGARH	MANGAON	Phalani
2779	Maharashtra	RAIGARH	POLADPUR	Matwan
2780	Maharashtra	RAIGARH	POLADPUR	Wave
2781	Maharashtra	RAIGARH	POLADPUR	Dharwali
2782	Maharashtra	RAIGARH	POLADPUR	Wadghar Bk.
2783	Maharashtra	RAIGARH	POLADPUR	Kamthe
2784	Maharashtra	RAIGARH	POLADPUR	Sade
2785	Maharashtra	RAIGARH	POLADPUR	Turbhekond
2786	Maharashtra	RAIGARH	POLADPUR	Turbhe Bk.
2787	Maharashtra	RAIGARH	POLADPUR	Dhawale
2788	Maharashtra	RAIGARH	POLADPUR	Borghar
2789	Maharashtra	RAIGARH	POLADPUR	Nawale
2790	Maharashtra	RAIGARH	POLADPUR	Chandale
2791	Maharashtra	RAIGARH	POLADPUR	Adavale Bk.
2792	Maharashtra	RAIGARH	POLADPUR	Khandaj
2793	Maharashtra	RAIGARH	POLADPUR	Wazarwadi

SI No	STATE	DIST	TALUK	Village Name
2794	Maharashtra	RAIGARH	POLADPUR	Salvikond
2795	Maharashtra	RAIGARH	POLADPUR	Chikhali
2796	Maharashtra	RAIGARH	POLADPUR	Ranawadi Bk.
2797	Maharashtra	RAIGARH	POLADPUR	Khopad
2798	Maharashtra	RAIGARH	POLADPUR	Chandake
2799	Maharashtra	RAIGARH	POLADPUR	Karanje
2800	Maharashtra	RAIGARH	POLADPUR	Lahulase
2801	Maharashtra	RAIGARH	POLADPUR	Haldule
2802	Maharashtra	RAIGARH	POLADPUR	Dabhil
2803	Maharashtra	RAIGARH	POLADPUR	Rankadsari
2804	Maharashtra	RAIGARH	POLADPUR	Golegani
2805	Maharashtra	RAIGARH	POLADPUR	Tutawali
2806	Maharashtra	RAIGARH	POLADPUR	Pangaloli
2807	Maharashtra	RAIGARH	POLADPUR	Parsule
2808	Maharashtra	RAIGARH	POLADPUR	Mahargul
2809	Maharashtra	RAIGARH	POLADPUR	Kotwal Bk.
2810	Maharashtra	RAIGARH	POLADPUR	Kshetrapal
2811	Maharashtra	RAIGARH	POLADPUR	Palchil
2812	Maharashtra	RAIGARH	POLADPUR	Kotwal Kh.
2813	Maharashtra	RAIGARH	POLADPUR	Kudpan Bk.
2814	Maharashtra	RAIGARH	POLADPUR	Kudpan Kh.
2815	Maharashtra	RAIGARH	ROHA	Kondgaon
2816	Maharashtra	RAIGARH	ROHA	Palas
2817	Maharashtra	RAIGARH	ROHA	Wasgaon
2818	Maharashtra	RAIGARH	ROHA	Nagothana (CT)
2819	Maharashtra	RAIGARH	ROHA	Kadsure
2820	Maharashtra	RAIGARH	ROHA	Wani
2821	Maharashtra	RAIGARH	ROHA	Patansai
2822	Maharashtra	RAIGARH	ROHA	Chikani
2823	Maharashtra	RAIGARH	ROHA	Bhatsai
2824	Maharashtra	RAIGARH	ROHA	Wazaroli
2825	Maharashtra	RAIGARH	ROHA	Wangani
2826	Maharashtra	RAIGARH	ROHA	Sanegaon
2827	Maharashtra	RAIGARH	ROHA	Bhise
2828	Maharashtra	RAIGARH	ROHA	Godasai
2829	Maharashtra	RAIGARH	ROHA	Hedawali
2830	Maharashtra	RAIGARH	ROHA	Pale Tarf Ashtami
2831	Maharashtra	RAIGARH	ROHA	Wavepotge
2832	Maharashtra	RAIGARH	ROHA	Dongari
2833	Maharashtra	RAIGARH	ROHA	Shenvai
2834	Maharashtra	RAIGARH	ROHA	Revoli
2835	Maharashtra	RAIGARH	ROHA	Yashwantkhar
2836	Maharashtra	RAIGARH	ROHA	Waravade
2837	Maharashtra	RAIGARH	ROHA	Dapoli
2838	Maharashtra	RAIGARH	ROHA	Sukeli
2839	Maharashtra	RAIGARH	ROHA	Dhamansai
2840	Maharashtra	RAIGARH	ROHA	Kandale
2841	Maharashtra	RAIGARH	ROHA	Wandoli
2842	Maharashtra	RAIGARH	ROHA	Vitthalwadi
2843	Maharashtra	RAIGARH	ROHA	Are Bk.
2844	Maharashtra	RAIGARH	ROHA	Shedsai
2845	Maharashtra	RAIGARH	ROHA	Devakanhe
2846	Maharashtra	RAIGARH	ROHA	Madhali Kh.
2847	Maharashtra	RAIGARH	ROHA	Pingalsai
2848	Maharashtra	RAIGARH	ROHA	Khamb
2849	Maharashtra	RAIGARH	ROHA	Nadawali
2850	Maharashtra	RAIGARH	ROHA	Gherasurgad
2851	Maharashtra	RAIGARH	ROHA	Talawali Tarf Ashtami
2852	Maharashtra	RAIGARH	ROHA	Dhankanhe
2853	Maharashtra	RAIGARH	ROHA	Chilhe
2854	Maharashtra	RAIGARH	ROHA	Chinchawali Tarf Atone
2855	Maharashtra	RAIGARH	ROHA	Malsai
2856	Maharashtra	RAIGARH	ROHA	Mahalunge
2857	Maharashtra	RAIGARH	ROHA	Talawali Tarf Ghosale
2858	Maharashtra	RAIGARH	ROHA	Chandgaon
2859	Maharashtra	RAIGARH	ROHA	Muthavali Kh
2860	Maharashtra	RAIGARH	ROHA	Vaijnath
2861	Maharashtra	RAIGARH	ROHA	Talavade
2862	Maharashtra	RAIGARH	ROHA	Usar
2863	Maharashtra	RAIGARH	ROHA	Balhe

SI No	STATE	DIST	TALUK	Village Name
2864	Maharashtra	RAIGARH	ROHA	Dolavahal
2865	Maharashtra	RAIGARH	ROHA	Roha (Gaulwadi)
2866	Maharashtra	RAIGARH	ROHA	Kamath
2867	Maharashtra	RAIGARH	ROHA	Kokban
2868	Maharashtra	RAIGARH	ROHA	Pangaloli
2869	Maharashtra	RAIGARH	ROHA	Warathi
2870	Maharashtra	RAIGARH	ROHA	Neharunagar
2871	Maharashtra	RAIGARH	ROHA	Khairale
2872	Maharashtra	RAIGARH	ROHA	Shiloshi
2873	Maharashtra	RAIGARH	ROHA	Bhuwaneshwar
2874	Maharashtra	RAIGARH	ROHA	Sarsali
2875	Maharashtra	RAIGARH	ROHA	Khambere
2876	Maharashtra	RAIGARH	ROHA	Khope
2877	Maharashtra	RAIGARH	ROHA	--NoName--111
2878	Maharashtra	RAIGARH	ROHA	Kolad
2879	Maharashtra	RAIGARH	ROHA	Sudakoli
2880	Maharashtra	RAIGARH	ROHA	Bobadghar
2881	Maharashtra	RAIGARH	ROHA	Khandar
2882	Maharashtra	RAIGARH	ROHA	Temghar
2883	Maharashtra	RAIGARH	ROHA	Tamhanshet
2884	Maharashtra	RAIGARH	ROHA	Tambadi
2885	Maharashtra	RAIGARH	ROHA	Karivane
2886	Maharashtra	RAIGARH	ROHA	Kawalthe
2887	Maharashtra	RAIGARH	ROHA	Barshet
2888	Maharashtra	RAIGARH	ROHA	Mhasadi
2889	Maharashtra	RAIGARH	ROHA	Sawane
2890	Maharashtra	RAIGARH	ROHA	Wali
2891	Maharashtra	RAIGARH	ROHA	Ghosale
2892	Maharashtra	RAIGARH	ROHA	Kelghar
2893	Maharashtra	RAIGARH	ROHA	Jadhavwadi
2894	Maharashtra	RAIGARH	ROHA	KANTI
2895	Maharashtra	RAIGARH	ROHA	Gopalwat
2896	Maharashtra	RAIGARH	ROHA	Uchel
2897	Maharashtra	RAIGARH	ROHA	Bhalagaon
2898	Maharashtra	RAIGARH	ROHA	Kandane Bk.
2899	Maharashtra	RAIGARH	ROHA	Kandane Kh.
2900	Maharashtra	RAIGARH	ROHA	Khajaniwadi
2901	Maharashtra	RAIGARH	SUDHAGAD	Gondav
2902	Maharashtra	RAIGARH	SUDHAGAD	Hatond
2903	Maharashtra	RAIGARH	SUDHAGAD	Falyan
2904	Maharashtra	RAIGARH	SUDHAGAD	Bheliv
2905	Maharashtra	RAIGARH	SUDHAGAD	Nere
2906	Maharashtra	RAIGARH	SUDHAGAD	Mahagaon
2907	Maharashtra	RAIGARH	SUDHAGAD	Wave T. Asare
2908	Maharashtra	RAIGARH	SUDHAGAD	Mangaon Kh
2909	Maharashtra	RAIGARH	SUDHAGAD	Vasunde
2910	Maharashtra	RAIGARH	SUDHAGAD	Pawasalawadi
2911	Maharashtra	RAIGARH	SUDHAGAD	Khandpoli
2912	Maharashtra	RAIGARH	SUDHAGAD	Varhadjambhulpada
2913	Maharashtra	RAIGARH	SUDHAGAD	Tadgaon
2914	Maharashtra	RAIGARH	SUDHAGAD	Kavele
2915	Maharashtra	RAIGARH	SUDHAGAD	Kumbharghar
2916	Maharashtra	RAIGARH	SUDHAGAD	Kalamb
2917	Maharashtra	RAIGARH	SUDHAGAD	Waghoshi
2918	Maharashtra	RAIGARH	SUDHAGAD	Harneri
2919	Maharashtra	RAIGARH	SUDHAGAD	Uddhar
2920	Maharashtra	RAIGARH	SUDHAGAD	Asare
2921	Maharashtra	RAIGARH	SUDHAGAD	Mulashi
2922	Maharashtra	RAIGARH	SUDHAGAD	Navghar
2923	Maharashtra	RAIGARH	SUDHAGAD	Chikhalgaon
2924	Maharashtra	RAIGARH	SUDHAGAD	Ghera Sudhagad
2925	Maharashtra	RAIGARH	SUDHAGAD	Bhilpada (kharavale)
2926	Maharashtra	RAIGARH	SUDHAGAD	Tivare
2927	Maharashtra	RAIGARH	SUDHAGAD	Pilosari
2928	Maharashtra	RAIGARH	SUDHAGAD	Karanighar
2929	Maharashtra	RAIGARH	SUDHAGAD	Chive
2930	Maharashtra	RAIGARH	SUDHAGAD	Nadsur
2931	Maharashtra	RAIGARH	SUDHAGAD	Rasal
2932	Maharashtra	RAIGARH	SUDHAGAD	Kumbharshet
2933	Maharashtra	RAIGARH	SUDHAGAD	Khandsai

SI No	STATE	DIST	TALUK	Village Name
2934	Maharashtra	RAIGARH	SUDHAGAD	Rabgaon
2935	Maharashtra	RAIGARH	SUDHAGAD	Ghera Sarasgad
2936	Maharashtra	RAIGARH	SUDHAGAD	Siddheshwar Bk
2937	Maharashtra	RAIGARH	SUDHAGAD	Wavlioli
2938	Maharashtra	RAIGARH	SUDHAGAD	Zap
2939	Maharashtra	RAIGARH	SUDHAGAD	Adulse
2940	Maharashtra	RAIGARH	SUDHAGAD	Shiloshi
2941	Maharashtra	RAIGARH	SUDHAGAD	Madhali
2942	Maharashtra	RAIGARH	SUDHAGAD	Apatwane
2943	Maharashtra	RAIGARH	SUDHAGAD	Ambivali
2944	Maharashtra	RAIGARH	SUDHAGAD	Khad Sambale
2945	Maharashtra	RAIGARH	SUDHAGAD	Potlaj Kh.
2946	Maharashtra	RAIGARH	SUDHAGAD	Gondale
2947	Maharashtra	RAIGARH	SUDHAGAD	Pimploli
2948	Maharashtra	RAIGARH	SUDHAGAD	Usar
2949	Maharashtra	RAIGARH	SUDHAGAD	Nagshet
2950	Maharashtra	RAIGARH	SUDHAGAD	Gomashi
2951	Maharashtra	RAIGARH	SUDHAGAD	Atone
2952	Maharashtra	RAIGARH	SUDHAGAD	Koshimbale
2953	Maharashtra	RATNAGIRI	CHIPLUN	Tiware
2954	Maharashtra	RATNAGIRI	CHIPLUN	Riktoli
2955	Maharashtra	RATNAGIRI	CHIPLUN	Tivadi
2956	Maharashtra	RATNAGIRI	CHIPLUN	Bamnoli
2957	Maharashtra	RATNAGIRI	CHIPLUN	Pedhe Parshuram
2958	Maharashtra	RATNAGIRI	CHIPLUN	Kadwad
2959	Maharashtra	RATNAGIRI	CHIPLUN	Nandivase
2960	Maharashtra	RATNAGIRI	CHIPLUN	Moravane
2961	Maharashtra	RATNAGIRI	CHIPLUN	Swayamdev
2962	Maharashtra	RATNAGIRI	CHIPLUN	Khopad
2963	Maharashtra	RATNAGIRI	CHIPLUN	Ganeshpur
2964	Maharashtra	RATNAGIRI	CHIPLUN	Kalkavane
2965	Maharashtra	RATNAGIRI	CHIPLUN	Gane
2966	Maharashtra	RATNAGIRI	CHIPLUN	Owali
2967	Maharashtra	RATNAGIRI	CHIPLUN	Pedhambe
2968	Maharashtra	RATNAGIRI	CHIPLUN	Kolkewadi
2969	Maharashtra	RATNAGIRI	CHIPLUN	Adare
2970	Maharashtra	RATNAGIRI	CHIPLUN	Kamathe Kh.
2971	Maharashtra	RATNAGIRI	CHIPLUN	Terav Bk.
2972	Maharashtra	RATNAGIRI	CHIPLUN	Mundhe Tarf Chiplun
2973	Maharashtra	RATNAGIRI	CHIPLUN	Kharavate
2974	Maharashtra	RATNAGIRI	CHIPLUN	Anari
2975	Maharashtra	RATNAGIRI	CHIPLUN	Ubhale
2976	Maharashtra	RATNAGIRI	CHIPLUN	Shirgaon
2977	Maharashtra	RATNAGIRI	CHIPLUN	Kumbharli
2978	Maharashtra	RATNAGIRI	CHIPLUN	Kondmala
2979	Maharashtra	RATNAGIRI	CHIPLUN	Kond Fansavane
2980	Maharashtra	RATNAGIRI	CHIPLUN	Talsar
2981	Maharashtra	RATNAGIRI	CHIPLUN	Pophali
2982	Maharashtra	RATNAGIRI	CHIPLUN	Kudap
2983	Maharashtra	RATNAGIRI	CHIPLUN	Pophali Bk.
2984	Maharashtra	RATNAGIRI	CHIPLUN	Dervan
2985	Maharashtra	RATNAGIRI	CHIPLUN	Turambao
2986	Maharashtra	RATNAGIRI	CHIPLUN	Mundhe Tarf Savarda
2987	Maharashtra	RATNAGIRI	CHIPLUN	Dhakhmoli
2988	Maharashtra	RATNAGIRI	CHIPLUN	Phurus
2989	Maharashtra	RATNAGIRI	CHIPLUN	Durgwadi Kh.
2990	Maharashtra	RATNAGIRI	CHIPLUN	Durgwadi
2991	Maharashtra	RATNAGIRI	CHIPLUN	Manjutri
2992	Maharashtra	RATNAGIRI	CHIPLUN	Talavade
2993	Maharashtra	RATNAGIRI	CHIPLUN	Pathe
2994	Maharashtra	RATNAGIRI	CHIPLUN	Majare (Goval)
2995	Maharashtra	RATNAGIRI	CHIPLUN	Kutare
2996	Maharashtra	RATNAGIRI	KHED	Tulashi Bk.
2997	Maharashtra	RATNAGIRI	KHED	Tulashi Kh.
2998	Maharashtra	RATNAGIRI	KHED	Wadgaon Bk.
2999	Maharashtra	RATNAGIRI	KHED	Shivtar
3000	Maharashtra	RATNAGIRI	KHED	Kalambani Kh.
3001	Maharashtra	RATNAGIRI	KHED	Kasaba Natu
3002	Maharashtra	RATNAGIRI	KHED	Pakharwadi
3003	Maharashtra	RATNAGIRI	KHED	Dahivali

SI No	STATE	DIST	TALUK	Village Name
3004	Maharashtra	RATNAGIRI	KHED	Wadi-beldar
3005	Maharashtra	RATNAGIRI	KHED	Divan-khavati
3006	Maharashtra	RATNAGIRI	KHED	Wadgaon Kh.
3007	Maharashtra	RATNAGIRI	KHED	Kinjale Tarf Natu
3008	Maharashtra	RATNAGIRI	KHED	Biramani
3009	Maharashtra	RATNAGIRI	KHED	Kondwadi
3010	Maharashtra	RATNAGIRI	KHED	Gherapalgad
3011	Maharashtra	RATNAGIRI	KHED	Shingri
3012	Maharashtra	RATNAGIRI	KHED	Pure Kh.
3013	Maharashtra	RATNAGIRI	KHED	Jamage
3014	Maharashtra	RATNAGIRI	KHED	Ghera-sumargad
3015	Maharashtra	RATNAGIRI	KHED	Kandoshi
3016	Maharashtra	RATNAGIRI	KHED	Vihali
3017	Maharashtra	RATNAGIRI	KHED	Kinjale Tarf Khed
3018	Maharashtra	RATNAGIRI	KHED	Nandivali
3019	Maharashtra	RATNAGIRI	KHED	Kalambani Bk.
3020	Maharashtra	RATNAGIRI	KHED	Wadi Malde
3021	Maharashtra	RATNAGIRI	KHED	Poyanar Kh.
3022	Maharashtra	RATNAGIRI	KHED	Sakharoli Kh.
3023	Maharashtra	RATNAGIRI	KHED	Tise Kh.
3024	Maharashtra	RATNAGIRI	KHED	Astan
3025	Maharashtra	RATNAGIRI	KHED	Ghera-rasalgad
3026	Maharashtra	RATNAGIRI	KHED	Wadi Bid
3027	Maharashtra	RATNAGIRI	KHED	Chatao
3028	Maharashtra	RATNAGIRI	KHED	Prabhuwadi
3029	Maharashtra	RATNAGIRI	KHED	Devghar
3030	Maharashtra	RATNAGIRI	KHED	Humbari
3031	Maharashtra	RATNAGIRI	KHED	Khalachi(humbari)
3032	Maharashtra	RATNAGIRI	KHED	Sanaghar
3033	Maharashtra	RATNAGIRI	KHED	Kartel
3034	Maharashtra	RATNAGIRI	KHED	Chinchwadi
3035	Maharashtra	RATNAGIRI	KHED	Varovali
3036	Maharashtra	RATNAGIRI	KHED	Ambavali
3037	Maharashtra	RATNAGIRI	KHED	Nawanagar
3038	Maharashtra	RATNAGIRI	KHED	Kumbhad
3039	Maharashtra	RATNAGIRI	KHED	Nandgaon
3040	Maharashtra	RATNAGIRI	KHED	Sanglot
3041	Maharashtra	RATNAGIRI	KHED	Shirgaon
3042	Maharashtra	RATNAGIRI	KHED	Khopi
3043	Maharashtra	RATNAGIRI	KHED	Nive
3044	Maharashtra	RATNAGIRI	KHED	Bajrang nagar
3045	Maharashtra	RATNAGIRI	KHED	Morvande Kh.
3046	Maharashtra	RATNAGIRI	KHED	Choravane
3047	Maharashtra	RATNAGIRI	KHED	Shirgaon Kh.
3048	Maharashtra	RATNAGIRI	KHED	Mirle
3049	Maharashtra	RATNAGIRI	KHED	Shiv Kh.
3050	Maharashtra	RATNAGIRI	KHED	Talvat Khed
3051	Maharashtra	RATNAGIRI	KHED	Sapirli
3052	Maharashtra	RATNAGIRI	KHED	Talvat Javali
3053	Maharashtra	RATNAGIRI	KHED	Choravane Utekarwadi
3054	Maharashtra	RATNAGIRI	KHED	Talvat Pal
3055	Maharashtra	RATNAGIRI	KHED	Kavale
3056	Maharashtra	RATNAGIRI	KHED	Kasai
3057	Maharashtra	RATNAGIRI	KHED	Ashti Mohalla
3058	Maharashtra	RATNAGIRI	KHED	Sakhar
3059	Maharashtra	RATNAGIRI	KHED	Bhelsai budhawadi
3060	Maharashtra	RATNAGIRI	KHED	Dhamanand
3061	Maharashtra	RATNAGIRI	KHED	Bhelsai chauthai
3062	Maharashtra	RATNAGIRI	KHED	Wave chinchatwadi
3063	Maharashtra	RATNAGIRI	KHED	Dhamanand Gaonthan
3064	Maharashtra	RATNAGIRI	KHED	Kelane
3065	Maharashtra	RATNAGIRI	KHED	Javli Gaonthan
3066	Maharashtra	RATNAGIRI	KHED	Zagdwadi
3067	Maharashtra	RATNAGIRI	KHED	Kumbhavali
3068	Maharashtra	RATNAGIRI	KHED	Kuraval Gaothan
3069	Maharashtra	RATNAGIRI	KHED	Ambadas
3070	Maharashtra	RATNAGIRI	LANJA	Vesurle
3071	Maharashtra	RATNAGIRI	LANJA	Shirambavali
3072	Maharashtra	RATNAGIRI	LANJA	Kochari
3073	Maharashtra	RATNAGIRI	LANJA	Daphale

SI No	STATE	DIST	TALUK	Village Name
3074	Maharashtra	RATNAGIRI	LANJA	Salpe
3075	Maharashtra	RATNAGIRI	LANJA	Kurchumb
3076	Maharashtra	RATNAGIRI	LANJA	Machal
3077	Maharashtra	RATNAGIRI	LANJA	Chafet
3078	Maharashtra	RATNAGIRI	LANJA	Kangavali
3079	Maharashtra	RATNAGIRI	LANJA	Veral
3080	Maharashtra	RATNAGIRI	LANJA	Chinchurti
3081	Maharashtra	RATNAGIRI	LANJA	Khorninko
3082	Maharashtra	RATNAGIRI	LANJA	Palu
3083	Maharashtra	RATNAGIRI	LANJA	Hasol
3084	Maharashtra	RATNAGIRI	LANJA	Agargaon
3085	Maharashtra	RATNAGIRI	LANJA	Kumbhargaoon
3086	Maharashtra	RATNAGIRI	LANJA	Prabhanvalli
3087	Maharashtra	RATNAGIRI	LANJA	Guravwadi
3088	Maharashtra	RATNAGIRI	LANJA	Khanavali
3089	Maharashtra	RATNAGIRI	LANJA	Waghrat
3090	Maharashtra	RATNAGIRI	LANJA	Kante
3091	Maharashtra	RATNAGIRI	LANJA	--NoName--193
3092	Maharashtra	RATNAGIRI	LANJA	Buddhawadi T.veravali Bk.
3093	Maharashtra	RATNAGIRI	LANJA	Majal
3094	Maharashtra	RATNAGIRI	LANJA	Ramgaon
3095	Maharashtra	RATNAGIRI	LANJA	Isavali
3096	Maharashtra	RATNAGIRI	LANJA	Javade
3097	Maharashtra	RATNAGIRI	LANJA	Bhambad
3098	Maharashtra	RATNAGIRI	LANJA	Puragaon
3099	Maharashtra	RATNAGIRI	LANJA	Kudewadi
3100	Maharashtra	RATNAGIRI	LANJA	Bhade
3101	Maharashtra	RATNAGIRI	LANJA	Ravari
3102	Maharashtra	RATNAGIRI	LANJA	Hardkhale
3103	Maharashtra	RATNAGIRI	LANJA	Bapere
3104	Maharashtra	RATNAGIRI	LANJA	Nivoshi
3105	Maharashtra	RATNAGIRI	LANJA	Kurang
3106	Maharashtra	RATNAGIRI	LANJA	Waked
3107	Maharashtra	RATNAGIRI	LANJA	Kondage
3108	Maharashtra	RATNAGIRI	LANJA	Panore
3109	Maharashtra	RATNAGIRI	LANJA	Vilavade
3110	Maharashtra	RATNAGIRI	LANJA	Roon
3111	Maharashtra	RATNAGIRI	LANJA	Argaon
3112	Maharashtra	RATNAGIRI	LANJA	Khorgaon
3113	Maharashtra	RATNAGIRI	LANJA	Borthade
3114	Maharashtra	RATNAGIRI	LANJA	Harche
3115	Maharashtra	RATNAGIRI	LANJA	Kondgaon
3116	Maharashtra	RATNAGIRI	LANJA	Ringane
3117	Maharashtra	RATNAGIRI	PAJAPUR	Zarye
3118	Maharashtra	RATNAGIRI	PAJAPUR	Watul
3119	Maharashtra	RATNAGIRI	PAJAPUR	Yeradav
3120	Maharashtra	RATNAGIRI	PAJAPUR	Kond Dasur
3121	Maharashtra	RATNAGIRI	PAJAPUR	Parule
3122	Maharashtra	RATNAGIRI	PAJAPUR	Chikhale
3123	Maharashtra	RATNAGIRI	PAJAPUR	Kondsar Kh.
3124	Maharashtra	RATNAGIRI	PAJAPUR	Pangari Kh.
3125	Maharashtra	RATNAGIRI	PAJAPUR	Tiware
3126	Maharashtra	RATNAGIRI	PAJAPUR	Dhamanpe
3127	Maharashtra	RATNAGIRI	PAJAPUR	Haral
3128	Maharashtra	RATNAGIRI	PAJAPUR	Varchi Guravwadi
3129	Maharashtra	RATNAGIRI	PAJAPUR	Kotapur
3130	Maharashtra	RATNAGIRI	PAJAPUR	Kolwankhadi
3131	Maharashtra	RATNAGIRI	PAJAPUR	Saundal
3132	Maharashtra	RATNAGIRI	PAJAPUR	Khingini
3133	Maharashtra	RATNAGIRI	PAJAPUR	Kelavade
3134	Maharashtra	RATNAGIRI	PAJAPUR	Patharde
3135	Maharashtra	RATNAGIRI	PAJAPUR	Pachal
3136	Maharashtra	RATNAGIRI	PAJAPUR	Agarewadi
3137	Maharashtra	RATNAGIRI	PAJAPUR	Bharade
3138	Maharashtra	RATNAGIRI	PAJAPUR	Karak
3139	Maharashtra	RATNAGIRI	PAJAPUR	Hardi
3140	Maharashtra	RATNAGIRI	PAJAPUR	Gothane Doniwade
3141	Maharashtra	RATNAGIRI	PAJAPUR	Oshiwale
3142	Maharashtra	RATNAGIRI	PAJAPUR	Walwad
3143	Maharashtra	RATNAGIRI	PAJAPUR	Kajirda

SI No	STATE	DIST	TALUK	Village Name
3144	Maharashtra	RATNAGIRI	PAJAPUR	Phupere
3145	Maharashtra	RATNAGIRI	PAJAPUR	Rajapur (M CI)
3146	Maharashtra	RATNAGIRI	PAJAPUR	Kolamb
3147	Maharashtra	RATNAGIRI	PAJAPUR	Pahiliwadi (tamhane)
3148	Maharashtra	RATNAGIRI	PAJAPUR	Jambhavali
3149	Maharashtra	RATNAGIRI	PAJAPUR	Miland
3150	Maharashtra	RATNAGIRI	PAJAPUR	Bag Kazi Husen
3151	Maharashtra	RATNAGIRI	PAJAPUR	Hasol Tarf Saundal
3152	Maharashtra	RATNAGIRI	PAJAPUR	Pangari Bk.
3153	Maharashtra	RATNAGIRI	PAJAPUR	Savadav
3154	Maharashtra	RATNAGIRI	PAJAPUR	Hatade
3155	Maharashtra	RATNAGIRI	PAJAPUR	Dongar
3156	Maharashtra	RATNAGIRI	PAJAPUR	Mosam
3157	Maharashtra	RATNAGIRI	PAJAPUR	Mahalunge
3158	Maharashtra	RATNAGIRI	PAJAPUR	Panhale Tarf Saundal
3159	Maharashtra	RATNAGIRI	PAJAPUR	Shejavali
3160	Maharashtra	RATNAGIRI	PAJAPUR	Valye
3161	Maharashtra	RATNAGIRI	PAJAPUR	Bandiwade
3162	Maharashtra	RATNAGIRI	PAJAPUR	Prindrawn
3163	Maharashtra	RATNAGIRI	PAJAPUR	Kumbhavade
3164	Maharashtra	RATNAGIRI	PAJAPUR	Palve
3165	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kumbhar Khani Bk.
3166	Maharashtra	RATNAGIRI	SANGAMESHWAR	Shirambe
3167	Maharashtra	RATNAGIRI	SANGAMESHWAR	Ratambi
3168	Maharashtra	RATNAGIRI	SANGAMESHWAR	Rajivali
3169	Maharashtra	RATNAGIRI	SANGAMESHWAR	Shinde Amberi
3170	Maharashtra	RATNAGIRI	SANGAMESHWAR	Vikas Nagar
3171	Maharashtra	RATNAGIRI	SANGAMESHWAR	Asave
3172	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kase
3173	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kuchambe
3174	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kutgiri
3175	Maharashtra	RATNAGIRI	SANGAMESHWAR	Pachambe
3176	Maharashtra	RATNAGIRI	SANGAMESHWAR	Rangav
3177	Maharashtra	RATNAGIRI	SANGAMESHWAR	Ambet
3178	Maharashtra	RATNAGIRI	SANGAMESHWAR	Mavalange
3179	Maharashtra	RATNAGIRI	SANGAMESHWAR	Tural
3180	Maharashtra	RATNAGIRI	SANGAMESHWAR	Shenavade
3181	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kond Bhairav
3182	Maharashtra	RATNAGIRI	SANGAMESHWAR	Masarang
3183	Maharashtra	RATNAGIRI	SANGAMESHWAR	Katurdi Kond
3184	Maharashtra	RATNAGIRI	SANGAMESHWAR	Nivali
3185	Maharashtra	RATNAGIRI	SANGAMESHWAR	Golavali
3186	Maharashtra	RATNAGIRI	SANGAMESHWAR	Shringapur
3187	Maharashtra	RATNAGIRI	SANGAMESHWAR	Tambedi
3188	Maharashtra	RATNAGIRI	SANGAMESHWAR	Anderi
3189	Maharashtra	RATNAGIRI	SANGAMESHWAR	Shembavane
3190	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kumbharkhani Kh.
3191	Maharashtra	RATNAGIRI	SANGAMESHWAR	Hedali
3192	Maharashtra	RATNAGIRI	SANGAMESHWAR	Dhamani
3193	Maharashtra	RATNAGIRI	SANGAMESHWAR	Dingni
3194	Maharashtra	RATNAGIRI	SANGAMESHWAR	Nayari
3195	Maharashtra	RATNAGIRI	SANGAMESHWAR	Pirandavane
3196	Maharashtra	RATNAGIRI	SANGAMESHWAR	Manjare
3197	Maharashtra	RATNAGIRI	SANGAMESHWAR	Tivare Ghera Prachitgad
3198	Maharashtra	RATNAGIRI	SANGAMESHWAR	Asurde
3199	Maharashtra	RATNAGIRI	SANGAMESHWAR	Maladewadi
3200	Maharashtra	RATNAGIRI	SANGAMESHWAR	Umare
3201	Maharashtra	RATNAGIRI	SANGAMESHWAR	Sangameshwar
3202	Maharashtra	RATNAGIRI	SANGAMESHWAR	Upale
3203	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kond Ambed
3204	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kinjale
3205	Maharashtra	RATNAGIRI	SANGAMESHWAR	Washi Tarf Sangameshwar
3206	Maharashtra	RATNAGIRI	SANGAMESHWAR	Devale Ghera Prachitgad
3207	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kule
3208	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kurdhunda
3209	Maharashtra	RATNAGIRI	SANGAMESHWAR	Phansavale
3210	Maharashtra	RATNAGIRI	SANGAMESHWAR	Sayale
3211	Maharashtra	RATNAGIRI	SANGAMESHWAR	Katavali
3212	Maharashtra	RATNAGIRI	SANGAMESHWAR	Tamnale
3213	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kundi

SI No	STATE	DIST	TALUK	Village Name
3214	Maharashtra	RATNAGIRI	SANGAMESHWAR	Nigudwadi
3215	Maharashtra	RATNAGIRI	SANGAMESHWAR	Gothane
3216	Maharashtra	RATNAGIRI	SANGAMESHWAR	Belari Bk.
3217	Maharashtra	RATNAGIRI	SANGAMESHWAR	Belariwadi
3218	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kond Ozare
3219	Maharashtra	RATNAGIRI	SANGAMESHWAR	Talavade Tarf Devrukh
3220	Maharashtra	RATNAGIRI	SANGAMESHWAR	Math Dhamapur
3221	Maharashtra	RATNAGIRI	SANGAMESHWAR	Chandivane
3222	Maharashtra	RATNAGIRI	SANGAMESHWAR	Belari Kh.
3223	Maharashtra	RATNAGIRI	SANGAMESHWAR	Bamnoli
3224	Maharashtra	RATNAGIRI	SANGAMESHWAR	Sonarwadi
3225	Maharashtra	RATNAGIRI	SANGAMESHWAR	Maral
3226	Maharashtra	RATNAGIRI	SANGAMESHWAR	Agarewadi
3227	Maharashtra	RATNAGIRI	SANGAMESHWAR	Karandewadi
3228	Maharashtra	RATNAGIRI	SANGAMESHWAR	Hativ
3229	Maharashtra	RATNAGIRI	SANGAMESHWAR	Khadi Kolvan
3230	Maharashtra	RATNAGIRI	SANGAMESHWAR	Angavali
3231	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kondran
3232	Maharashtra	RATNAGIRI	SANGAMESHWAR	Devghar
3233	Maharashtra	RATNAGIRI	SANGAMESHWAR	Bondye
3234	Maharashtra	RATNAGIRI	SANGAMESHWAR	Ozare Bk.
3235	Maharashtra	RATNAGIRI	SANGAMESHWAR	Nivdhe
3236	Maharashtra	RATNAGIRI	SANGAMESHWAR	Chaphavali
3237	Maharashtra	RATNAGIRI	SANGAMESHWAR	Ninave
3238	Maharashtra	RATNAGIRI	SANGAMESHWAR	Dakhin
3239	Maharashtra	RATNAGIRI	SANGAMESHWAR	Murshi
3240	Maharashtra	RATNAGIRI	SANGAMESHWAR	Bhadkambe
3241	Maharashtra	RATNAGIRI	SANGAMESHWAR	Bhovade
3242	Maharashtra	RATNAGIRI	SANGAMESHWAR	Kirbet
3243	Maharashtra	RATNAGIRI	SANGAMESHWAR	Devade
3244	Maharashtra	RATNAGIRI	SANGAMESHWAR	Wadi Adhishti
3245	Maharashtra	SANGLI	SHIRALA	--NoName--165
3246	Maharashtra	SANGLI	SHIRALA	--NoName--166
3247	Maharashtra	SANGLI	SHIRALA	--NoName--167
3248	Maharashtra	SANGLI	SHIRALA	--NoName--168
3249	Maharashtra	SANGLI	SHIRALA	--NoName--169
3250	Maharashtra	SANGLI	SHIRALA	--NoName--170
3251	Maharashtra	SANGLI	SHIRALA	--NoName--171
3252	Maharashtra	SANGLI	SHIRALA	--NoName--172
3253	Maharashtra	SANGLI	SHIRALA	--NoName--173
3254	Maharashtra	SANGLI	SHIRALA	--NoName--174
3255	Maharashtra	SANGLI	SHIRALA	--NoName--175
3256	Maharashtra	SANGLI	SHIRALA	--NoName--176
3257	Maharashtra	SANGLI	SHIRALA	--NoName--177
3258	Maharashtra	SANGLI	SHIRALA	--NoName--178
3259	Maharashtra	SANGLI	SHIRALA	Khundalapur
3260	Maharashtra	SANGLI	SHIRALA	Manadur (CT)
3261	Maharashtra	SANGLI	SHIRALA	--NoName--185
3262	Maharashtra	SANGLI	SHIRALA	Gudhe
3263	Maharashtra	SANGLI	SHIRALA	Manewadi
3264	Maharashtra	SANGLI	SHIRALA	Panumbre Tarf Warun
3265	Maharashtra	SANGLI	SHIRALA	Meni
3266	Maharashtra	SANGLI	SHIRALA	Charan
3267	Maharashtra	SANGLI	SHIRALA	Shendgewadi
3268	Maharashtra	SANGLI	SHIRALA	Nathavade
3269	Maharashtra	SATARA	JAOLI	Bondarwadi
3270	Maharashtra	SATARA	JAOLI	Bhuteghar
3271	Maharashtra	SATARA	JAOLI	Vahite
3272	Maharashtra	SATARA	JAOLI	Yerne bk
3273	Maharashtra	SATARA	JAOLI	Valanjwadi
3274	Maharashtra	SATARA	JAOLI	Umbari
3275	Maharashtra	SATARA	JAOLI	Yerne kh
3276	Maharashtra	SATARA	JAOLI	Majarewadi
3277	Maharashtra	SATARA	JAOLI	Achali
3278	Maharashtra	SATARA	JAOLI	Devasare
3279	Maharashtra	SATARA	JAOLI	Jarewadi
3280	Maharashtra	SATARA	JAOLI	Kuraloshi
3281	Maharashtra	SATARA	JAOLI	Hateghar
3282	Maharashtra	SATARA	JAOLI	Soundari
3283	Maharashtra	SATARA	JAOLI	Sayghar

SI No	STATE	DIST	TALUK	Village Name
3284	Maharashtra	SATARA	JAOLI	Kuroshi
3285	Maharashtra	SATARA	JAOLI	Dabhe mohan
3286	Maharashtra	SATARA	JAOLI	Bhaleghar
3287	Maharashtra	SATARA	JAOLI	Sonat
3288	Maharashtra	SATARA	JAOLI	Kalamgaon kalamkar
3289	Maharashtra	SATARA	JAOLI	Dabhe dabhekar
3290	Maharashtra	SATARA	JAOLI	Dabhe turuk
3291	Maharashtra	SATARA	JAOLI	Okhavadi
3292	Maharashtra	SATARA	JAOLI	Shirnar
3293	Maharashtra	SATARA	JAOLI	Lakhwad
3294	Maharashtra	SATARA	JAOLI	Kotroshi
3295	Maharashtra	SATARA	JAOLI	Bhogavali t. medha
3296	Maharashtra	SATARA	JAOLI	Khambil pokale
3297	Maharashtra	SATARA	JAOLI	Amshi
3298	Maharashtra	SATARA	JAOLI	Rangeghar
3299	Maharashtra	SATARA	JAOLI	Divdev
3300	Maharashtra	SATARA	JAOLI	Mamurdi
3301	Maharashtra	SATARA	JAOLI	Kandat
3302	Maharashtra	SATARA	JAOLI	Varsoli koli
3303	Maharashtra	SATARA	JAOLI	Galdev
3304	Maharashtra	SATARA	JAOLI	Khambil chorge
3305	Maharashtra	SATARA	JAOLI	Kharoshi
3306	Maharashtra	SATARA	JAOLI	Vadgare
3307	Maharashtra	SATARA	JAOLI	Songaon
3308	Maharashtra	SATARA	JAOLI	Dare bk.
3309	Maharashtra	SATARA	JAOLI	Renoshi
3310	Maharashtra	SATARA	JAOLI	Zadani
3311	Maharashtra	SATARA	JAOLI	Harchandi
3312	Maharashtra	SATARA	JAOLI	Mhate kh.
3313	Maharashtra	SATARA	JAOLI	Mohat
3314	Maharashtra	SATARA	JAOLI	Gondemal
3315	Maharashtra	SATARA	JAOLI	Vengale
3316	Maharashtra	SATARA	JAOLI	Belawade
3317	Maharashtra	SATARA	JAOLI	Rule
3318	Maharashtra	SATARA	JAOLI	Pali t. ategaon
3319	Maharashtra	SATARA	JAOLI	Dodani
3320	Maharashtra	SATARA	JAOLI	Ganje
3321	Maharashtra	SATARA	JAOLI	Apti
3322	Maharashtra	SATARA	JAOLI	Gavadhoshi
3323	Maharashtra	SATARA	JAOLI	Maradmure
3324	Maharashtra	SATARA	JAOLI	Agalavewadi
3325	Maharashtra	SATARA	JAOLI	Saloshi
3326	Maharashtra	SATARA	JAOLI	Uchat
3327	Maharashtra	SATARA	JAOLI	Furus
3328	Maharashtra	SATARA	JAOLI	Kumbhargani
3329	Maharashtra	SATARA	JAOLI	Awalan
3330	Maharashtra	SATARA	JAOLI	Morghar
3331	Maharashtra	SATARA	JAOLI	Mhamulkarwadi
3332	Maharashtra	SATARA	JAOLI	Lamaj
3333	Maharashtra	SATARA	JAOLI	Walne
3334	Maharashtra	SATARA	JAOLI	Tambi t. medha
3335	Maharashtra	SATARA	JAOLI	Morawale
3336	Maharashtra	SATARA	JAOLI	Valawan
3337	Maharashtra	SATARA	JAOLI	Sangvi t. medha
3338	Maharashtra	SATARA	JAOLI	Nivali
3339	Maharashtra	SATARA	JAOLI	Narfdev
3340	Maharashtra	SATARA	JAOLI	Parwat t. wagawale
3341	Maharashtra	SATARA	JAOLI	Ahire
3342	Maharashtra	SATARA	JAOLI	Tetli
3343	Maharashtra	SATARA	JAOLI	Maleshwar
3344	Maharashtra	SATARA	JAOLI	Malchoundi
3345	Maharashtra	SATARA	JAOLI	Nizare
3346	Maharashtra	SATARA	JAOLI	Gadhavali
3347	Maharashtra	SATARA	JAOLI	Dhanakwadi
3348	Maharashtra	SATARA	JAOLI	Akalpe
3349	Maharashtra	SATARA	JAOLI	Karandi t. medha
3350	Maharashtra	SATARA	JAOLI	Kolghar
3351	Maharashtra	SATARA	JAOLI	Sawari
3352	Maharashtra	SATARA	JAOLI	Sayali
3353	Maharashtra	SATARA	JAOLI	Araw

SI No	STATE	DIST	TALUK	Village Name
3354	Maharashtra	SATARA	JAOLI	Morni
3355	Maharashtra	SATARA	JAOLI	Dund
3356	Maharashtra	SATARA	JAOLI	Yekiv
3357	Maharashtra	SATARA	JAOLI	Shindi
3358	Maharashtra	SATARA	JAOLI	Andhari
3359	Maharashtra	SATARA	JAOLI	Kas
3360	Maharashtra	SATARA	JAOLI	Mhavshi
3361	Maharashtra	SATARA	JAOLI	Chakdev
3362	Maharashtra	SATARA	JAOLI	Pimpri t. tamb
3363	Maharashtra	SATARA	JAOLI	Mhalunge
3364	Maharashtra	SATARA	JAOLI	Ravandi
3365	Maharashtra	SATARA	JAOLI	Met shindi
3366	Maharashtra	SATARA	JAOLI	Majare shevandi
3367	Maharashtra	SATARA	JAOLI	Mauje shevandi
3368	Maharashtra	SATARA	JAOLI	Phalani
3369	Maharashtra	SATARA	JAOLI	Adoshi
3370	Maharashtra	SATARA	JAOLI	Madoshi
3371	Maharashtra	SATARA	JAOLI	Khirkhandi
3372	Maharashtra	SATARA	JAOLI	Kusapur
3373	Maharashtra	SATARA	JAOLI	Munawale
3374	Maharashtra	SATARA	JAOLI	Umbarewadi
3375	Maharashtra	SATARA	JAOLI	Kargaon
3376	Maharashtra	SATARA	JAOLI	--NoName--136
3377	Maharashtra	SATARA	JAOLI	Tambi
3378	Maharashtra	SATARA	JAOLI	Vasota
3379	Maharashtra	SATARA	JAOLI	Maldev
3380	Maharashtra	SATARA	JAOLI	--NoName--138
3381	Maharashtra	SATARA	JAOLI	--NoName--139
3382	Maharashtra	SATARA	JAOLI	Deur
3383	Maharashtra	SATARA	JAOLI	--NoName--143
3384	Maharashtra	SATARA	JAOLI	Vele
3385	Maharashtra	SATARA	JAOLI	--NoName--146
3386	Maharashtra	SATARA	JAOLI	--NoName--147
3387	Maharashtra	SATARA	JAOLI	--NoName--150
3388	Maharashtra	SATARA	KOREGAON	Rautwadi
3389	Maharashtra	SATARA	KOREGAON	Gujarwadi
3390	Maharashtra	SATARA	MAHABALESHWAR	Kshetra mahabaleshwar
3391	Maharashtra	SATARA	MAHABALESHWAR	Jaoli
3392	Maharashtra	SATARA	MAHABALESHWAR	Dare
3393	Maharashtra	SATARA	MAHABALESHWAR	Avakali
3394	Maharashtra	SATARA	MAHABALESHWAR	Nakinda
3395	Maharashtra	SATARA	MAHABALESHWAR	Mahabaleshwar (M CI)
3396	Maharashtra	SATARA	MAHABALESHWAR	Ran adva gaund
3397	Maharashtra	SATARA	MAHABALESHWAR	Kumbharoshi
3398	Maharashtra	SATARA	MAHABALESHWAR	Metgutad
3399	Maharashtra	SATARA	MAHABALESHWAR	Haroshi
3400	Maharashtra	SATARA	MAHABALESHWAR	Dudhoshi
3401	Maharashtra	SATARA	MAHABALESHWAR	Petpar
3402	Maharashtra	SATARA	MAHABALESHWAR	Parsond
3403	Maharashtra	SATARA	MAHABALESHWAR	Met taliye
3404	Maharashtra	SATARA	MAHABALESHWAR	Bhekavali
3405	Maharashtra	SATARA	MAHABALESHWAR	Kumthe
3406	Maharashtra	SATARA	MAHABALESHWAR	Parpar
3407	Maharashtra	SATARA	MAHABALESHWAR	Birwadi
3408	Maharashtra	SATARA	MAHABALESHWAR	Shiravali
3409	Maharashtra	SATARA	MAHABALESHWAR	Shindola
3410	Maharashtra	SATARA	MAHABALESHWAR	Navali
3411	Maharashtra	SATARA	MAHABALESHWAR	Malusar
3412	Maharashtra	SATARA	MAHABALESHWAR	Birmani
3413	Maharashtra	SATARA	MAHABALESHWAR	Manghar
3414	Maharashtra	SATARA	MAHABALESHWAR	Tekavali
3415	Maharashtra	SATARA	MAHABALESHWAR	Hatlot
3416	Maharashtra	SATARA	MAHABALESHWAR	Dudhgaon
3417	Maharashtra	SATARA	MAHABALESHWAR	Goroshi
3418	Maharashtra	SATARA	MAHABALESHWAR	Parut
3419	Maharashtra	SATARA	MAHABALESHWAR	Chikhali
3420	Maharashtra	SATARA	MAHABALESHWAR	Yerandal
3421	Maharashtra	SATARA	MAHABALESHWAR	Chaturbet
3422	Maharashtra	SATARA	MAHABALESHWAR	Ghavari
3423	Maharashtra	SATARA	MAHABALESHWAR	Dhardev

SI No	STATE	DIST	TALUK	Village Name
3424	Maharashtra	SATARA	MAHABALESHWAR	Zanzwad
3425	Maharashtra	SATARA	MAHABALESHWAR	Devali
3426	Maharashtra	SATARA	MAHABALESHWAR	Vivar
3427	Maharashtra	SATARA	MAHABALESHWAR	Ghonaspur
3428	Maharashtra	SATARA	MAHABALESHWAR	Kalamgaon
3429	Maharashtra	SATARA	MAHABALESHWAR	Taldev
3430	Maharashtra	SATARA	PATAN	Maloshi
3431	Maharashtra	SATARA	PATAN	Kusavade
3432	Maharashtra	SATARA	PATAN	--NoName--149
3433	Maharashtra	SATARA	PATAN	Kushi
3434	Maharashtra	SATARA	PATAN	--NoName--151
3435	Maharashtra	SATARA	PATAN	Dicholi
3436	Maharashtra	SATARA	PATAN	Nivade
3437	Maharashtra	SATARA	PATAN	Shirshinge
3438	Maharashtra	SATARA	PATAN	Tondoshi
3439	Maharashtra	SATARA	PATAN	Bharsakhale
3440	Maharashtra	SATARA	PATAN	Dhokawale
3441	Maharashtra	SATARA	PATAN	--NoName--152
3442	Maharashtra	SATARA	PATAN	--NoName--153
3443	Maharashtra	SATARA	PATAN	Dhoroshi
3444	Maharashtra	SATARA	PATAN	Nivakane
3445	Maharashtra	SATARA	PATAN	Marloshi
3446	Maharashtra	SATARA	PATAN	--NoName--154
3447	Maharashtra	SATARA	PATAN	Kathi
3448	Maharashtra	SATARA	PATAN	Divashi kh
3449	Maharashtra	SATARA	PATAN	Punvali
3450	Maharashtra	SATARA	PATAN	--NoName--156
3451	Maharashtra	SATARA	PATAN	Mandure
3452	Maharashtra	SATARA	PATAN	Zadoli
3453	Maharashtra	SATARA	PATAN	--NoName--157
3454	Maharashtra	SATARA	PATAN	--NoName--158
3455	Maharashtra	SATARA	PATAN	Nawaja
3456	Maharashtra	SATARA	PATAN	Chafoli
3457	Maharashtra	SATARA	PATAN	--NoName--159
3458	Maharashtra	SATARA	PATAN	Mendhoshi
3459	Maharashtra	SATARA	PATAN	Mirgaon
3460	Maharashtra	SATARA	PATAN	Ghanav
3461	Maharashtra	SATARA	PATAN	--NoName--160
3462	Maharashtra	SATARA	PATAN	Vatole
3463	Maharashtra	SATARA	PATAN	Torane
3464	Maharashtra	SATARA	PATAN	--NoName--161
3465	Maharashtra	SATARA	PATAN	Humbarli
3466	Maharashtra	SATARA	PATAN	Padloshi
3467	Maharashtra	SATARA	PATAN	Ambavane
3468	Maharashtra	SATARA	PATAN	--NoName--162
3469	Maharashtra	SATARA	PATAN	Ghatmatha
3470	Maharashtra	SATARA	PATAN	Ker
3471	Maharashtra	SATARA	PATAN	Kamargaon
3472	Maharashtra	SATARA	PATAN	Dhayati
3473	Maharashtra	SATARA	PATAN	Kharadwadi
3474	Maharashtra	SATARA	PATAN	Gokul tarf helwak
3475	Maharashtra	SATARA	PATAN	Karvat
3476	Maharashtra	SATARA	PATAN	Bondri
3477	Maharashtra	SATARA	PATAN	Gadhav khop
3478	Maharashtra	SATARA	PATAN	Gheradategad
3479	Maharashtra	SATARA	PATAN	Shivandeshwar
3480	Maharashtra	SATARA	PATAN	Nanel
3481	Maharashtra	SATARA	PATAN	Kemase
3482	Maharashtra	SATARA	PATAN	Marul tarf patan
3483	Maharashtra	SATARA	PATAN	Bopoli
3484	Maharashtra	SATARA	PATAN	Rasati
3485	Maharashtra	SATARA	PATAN	Thankal
3486	Maharashtra	SATARA	PATAN	Baje
3487	Maharashtra	SATARA	PATAN	Mastewadi
3488	Maharashtra	SATARA	PATAN	Nechal
3489	Maharashtra	SATARA	PATAN	Helwak
3490	Maharashtra	SATARA	PATAN	Mendheghar
3491	Maharashtra	SATARA	PATAN	Kondhavale
3492	Maharashtra	SATARA	PATAN	Vanzole
3493	Maharashtra	SATARA	PATAN	Waghane

SI No	STATE	DIST	TALUK	Village Name
3494	Maharashtra	SATARA	PATAN	--NoName--163
3495	Maharashtra	SATARA	PATAN	Govare
3496	Maharashtra	SATARA	PATAN	Chafer
3497	Maharashtra	SATARA	PATAN	Kadoli
3498	Maharashtra	SATARA	PATAN	Zakade
3499	Maharashtra	SATARA	PATAN	Taliye
3500	Maharashtra	SATARA	PATAN	Maneri
3501	Maharashtra	SATARA	PATAN	Patharpunj
3502	Maharashtra	SATARA	PATAN	Kolane
3503	Maharashtra	SATARA	PATAN	--NoName--164
3504	Maharashtra	SATARA	PATAN	Risawad
3505	Maharashtra	SATARA	PATAN	Natoshi
3506	Maharashtra	SATARA	PATAN	Gothane
3507	Maharashtra	SATARA	PATAN	Bahe
3508	Maharashtra	SATARA	PATAN	Mala
3509	Maharashtra	SATARA	PATAN	Ambrag
3510	Maharashtra	SATARA	PATAN	Pachgani
3511	Maharashtra	SATARA	PATAN	Atoli
3512	Maharashtra	SATARA	PATAN	Kalkewadi
3513	Maharashtra	SATARA	PATAN	Humbarwadi
3514	Maharashtra	SATARA	PATAN	Kodal
3515	Maharashtra	SATARA	PATAN	Kahir
3516	Maharashtra	SATARA	PATAN	Asawalewadi
3517	Maharashtra	SATARA	PATAN	Humbarne
3518	Maharashtra	SATARA	PATAN	Palashi
3519	Maharashtra	SATARA	PATAN	Paneri
3520	Maharashtra	SATARA	PATAN	Karale
3521	Maharashtra	SATARA	PATAN	Ruale
3522	Maharashtra	SATARA	PATAN	Satar
3523	Maharashtra	SATARA	PATAN	Ghotil
3524	Maharashtra	SATARA	PATAN	Nivi
3525	Maharashtra	SATARA	PATAN	Kasani
3526	Maharashtra	SATARA	SATARA	Chinchani
3527	Maharashtra	SATARA	SATARA	Gogavalewadi
3528	Maharashtra	SATARA	SATARA	Akale
3529	Maharashtra	SATARA	SATARA	Kamathi T.satara
3530	Maharashtra	SATARA	SATARA	Agudewadi
3531	Maharashtra	SATARA	SATARA	Parambe
3532	Maharashtra	SATARA	SATARA	Jotibachiwadi
3533	Maharashtra	SATARA	SATARA	Atali
3534	Maharashtra	SATARA	SATARA	Savali
3535	Maharashtra	SATARA	SATARA	Bhambavali
3536	Maharashtra	SATARA	SATARA	Kurulbaji
3537	Maharashtra	SATARA	SATARA	Yavateshwar
3538	Maharashtra	SATARA	SATARA	Pateghar
3539	Maharashtra	SATARA	SATARA	Katavadi Kh
3540	Maharashtra	SATARA	SATARA	Navali
3541	Maharashtra	SATARA	SATARA	Kelavali
3542	Maharashtra	SATARA	SATARA	Nitral
3543	Maharashtra	SATARA	SATARA	Takawali
3544	Maharashtra	SATARA	SATARA	Kus kh.
3545	Maharashtra	SATARA	SATARA	Khadegaon
3546	Maharashtra	SATARA	SATARA	Sandavali
3547	Maharashtra	SATARA	SATARA	Chalkewadi
3548	Maharashtra	SATARA	SATARA	Thoseghar
3549	Maharashtra	SATARA	SATARA	Raighar
3550	Maharashtra	SATARA	SATARA	Boposhi
3551	Maharashtra	SATARA	WAI	Jambhali
3552	Maharashtra	SATARA	WAI	Gherakelanja
3553	Maharashtra	SATARA	WAI	Yeruli
3554	Maharashtra	SATARA	WAI	Kochalewadi
3555	Maharashtra	SATARA	WAI	Khavali
3556	Maharashtra	SATARA	WAI	Abhepuri
3557	Maharashtra	SATARA	WAI	Duichivadi
3558	Maharashtra	SATARA	WAI	Chorachiwadi
3559	Maharashtra	SATARA	WAI	Kironde
3560	Maharashtra	SATARA	WAI	Jor
3561	Maharashtra	SATARA	WAI	Kondhavale
3562	Maharashtra	SATARA	WAI	Golegaon
3563	Maharashtra	SATARA	WAI	Ulumb

SI No	STATE	DIST	TALUK	Village Name
3564	Maharashtra	SATARA	WAI	Balakavadi
3565	Maharashtra	SATARA	WAI	Asagaon
3566	Maharashtra	SATARA	WAI	Nandgane
3567	Maharashtra	SATARA	WAI	Paratavadi
3568	Maharashtra	SATARA	WAI	--NoName--131
3569	Maharashtra	SINDHUDURG	DEVGAD	Dhalavali
3570	Maharashtra	SINDHUDURG	DEVGAD	Pombhurle
3571	Maharashtra	SINDHUDURG	DEVGAD	Phanasgaon
3572	Maharashtra	SINDHUDURG	DEVGAD	Welgave
3573	Maharashtra	SINDHUDURG	DEVGAD	Waghivare
3574	Maharashtra	SINDHUDURG	DEVGAD	Mahalunge
3575	Maharashtra	SINDHUDURG	DEVGAD	Nad
3576	Maharashtra	SINDHUDURG	DEVGAD	Gadhitamhane
3577	Maharashtra	SINDHUDURG	DEVGAD	Shiravali
3578	Maharashtra	SINDHUDURG	DEVGAD	Shevare
3579	Maharashtra	SINDHUDURG	DEVGAD	Hadpid
3580	Maharashtra	SINDHUDURG	DEVGAD	Nimatwadi
3581	Maharashtra	SINDHUDURG	DEVGAD	Chafed
3582	Maharashtra	SINDHUDURG	DEVGAD	Lingdal
3583	Maharashtra	SINDHUDURG	DEVGAD	Salashi
3584	Maharashtra	SINDHUDURG	DEVGAD	Sherighera Kamte
3585	Maharashtra	SINDHUDURG	DEVGAD	Are
3586	Maharashtra	SINDHUDURG	DEVGAD	Tambaldeg
3587	Maharashtra	SINDHUDURG	DEVGAD	Rembavali
3588	Maharashtra	SINDHUDURG	DEVGAD	Kuvale
3589	Maharashtra	SINDHUDURG	DEVGAD	Khudi
3590	Maharashtra	SINDHUDURG	KANKAVLI	Waingani
3591	Maharashtra	SINDHUDURG	KANKAVLI	Sherpe
3592	Maharashtra	SINDHUDURG	KANKAVLI	Jambhalnagar
3593	Maharashtra	SINDHUDURG	KANKAVLI	Darum
3594	Maharashtra	SINDHUDURG	KANKAVLI	Dhareshwar
3595	Maharashtra	SINDHUDURG	KANKAVLI	Ozaram
3596	Maharashtra	SINDHUDURG	KANKAVLI	Nagsawantwadi
3597	Maharashtra	SINDHUDURG	KANKAVLI	Ghonsari
3598	Maharashtra	SINDHUDURG	KANKAVLI	Koloshi
3599	Maharashtra	SINDHUDURG	KANKAVLI	Phondaghat
3600	Maharashtra	SINDHUDURG	KANKAVLI	Damare
3601	Maharashtra	SINDHUDURG	KANKAVLI	Ayanal
3602	Maharashtra	SINDHUDURG	KANKAVLI	Uttar Bajar Peth
3603	Maharashtra	SINDHUDURG	KANKAVLI	Kondye
3604	Maharashtra	SINDHUDURG	KANKAVLI	Harkul Kh.
3605	Maharashtra	SINDHUDURG	KANKAVLI	Savdav
3606	Maharashtra	SINDHUDURG	KANKAVLI	Main
3607	Maharashtra	SINDHUDURG	KANKAVLI	Bharni
3608	Maharashtra	SINDHUDURG	KANKAVLI	Kumbhavade
3609	Maharashtra	SINDHUDURG	KANKAVLI	Tarandale
3610	Maharashtra	SINDHUDURG	KANKAVLI	Gandhinagar
3611	Maharashtra	SINDHUDURG	KANKAVLI	Rameshwarnagar
3612	Maharashtra	SINDHUDURG	KANKAVLI	Bhiravande
3613	Maharashtra	SINDHUDURG	KANKAVLI	Humbarane
3614	Maharashtra	SINDHUDURG	KANKAVLI	Pise Kamate
3615	Maharashtra	SINDHUDURG	KANKAVLI	Varavade
3616	Maharashtra	SINDHUDURG	KANKAVLI	Natal
3617	Maharashtra	SINDHUDURG	KANKAVLI	Dariste
3618	Maharashtra	SINDHUDURG	KANKAVLI	Digavale
3619	Maharashtra	SINDHUDURG	KANKAVLI	Shiraval
3620	Maharashtra	SINDHUDURG	KANKAVLI	Ranjangaon
3621	Maharashtra	SINDHUDURG	KANKAVLI	Kasavan
3622	Maharashtra	SINDHUDURG	KANKAVLI	Pimpalgaon
3623	Maharashtra	SINDHUDURG	KANKAVLI	Osargaon
3624	Maharashtra	SINDHUDURG	KANKAVLI	Bhairavgaoon
3625	Maharashtra	SINDHUDURG	KANKAVLI	Yevteshwargaon
3626	Maharashtra	SINDHUDURG	KANKAVLI	Nardave
3627	Maharashtra	SINDHUDURG	KANKAVLI	Jambhalgaon
3628	Maharashtra	SINDHUDURG	KANKAVLI	Kalasuli
3629	Maharashtra	SINDHUDURG	KUDAL	Kupavade
3630	Maharashtra	SINDHUDURG	KUDAL	Gavalgaon
3631	Maharashtra	SINDHUDURG	KUDAL	Bhutvad
3632	Maharashtra	SINDHUDURG	KUDAL	Durganagar
3633	Maharashtra	SINDHUDURG	KUDAL	Bhadgaon Bk.

SI No	STATE	DIST	TALUK	Village Name
3634	Maharashtra	SINDHUDURG	KUDAL	Bhadgaon Kh.
3635	Maharashtra	SINDHUDURG	KUDAL	Sonavade Tarf Kalsuli
3636	Maharashtra	SINDHUDURG	KUDAL	Bharani
3637	Maharashtra	SINDHUDURG	KUDAL	Ghotage
3638	Maharashtra	SINDHUDURG	KUDAL	Nirukhe
3639	Maharashtra	SINDHUDURG	KUDAL	Pangrad
3640	Maharashtra	SINDHUDURG	KUDAL	Warde
3641	Maharashtra	SINDHUDURG	KUDAL	Padave
3642	Maharashtra	SINDHUDURG	KUDAL	Kadawal
3643	Maharashtra	SINDHUDURG	KUDAL	Avalegaon
3644	Maharashtra	SINDHUDURG	KUDAL	Kusagaon
3645	Maharashtra	SINDHUDURG	KUDAL	Rumadgaon
3646	Maharashtra	SINDHUDURG	KUDAL	Girgaon
3647	Maharashtra	SINDHUDURG	KUDAL	Kinlos
3648	Maharashtra	SINDHUDURG	KUDAL	Nerur K. Narur
3649	Maharashtra	SINDHUDURG	KUDAL	Hirlok
3650	Maharashtra	SINDHUDURG	KUDAL	Anjivade
3651	Maharashtra	SINDHUDURG	KUDAL	Shivapur
3652	Maharashtra	SINDHUDURG	KUDAL	Narur
3653	Maharashtra	SINDHUDURG	KUDAL	Keravade K.Narur
3654	Maharashtra	SINDHUDURG	KUDAL	Nileli
3655	Maharashtra	SINDHUDURG	KUDAL	Pandur
3656	Maharashtra	SINDHUDURG	KUDAL	Wasoli
3657	Maharashtra	SINDHUDURG	KUDAL	Chafeli
3658	Maharashtra	SINDHUDURG	KUDAL	Gothos
3659	Maharashtra	SINDHUDURG	KUDAL	Nivaje
3660	Maharashtra	SINDHUDURG	KUDAL	Sakirde
3661	Maharashtra	SINDHUDURG	KUDAL	Upavade
3662	Maharashtra	SINDHUDURG	KUDAL	Pulas
3663	Maharashtra	SINDHUDURG	KUDAL	Gandhigram
3664	Maharashtra	SINDHUDURG	KUDAL	Wados
3665	Maharashtra	SINDHUDURG	KUDAL	Walawal
3666	Maharashtra	SINDHUDURG	KUDAL	Amberi
3667	Maharashtra	SINDHUDURG	KUDAL	More
3668	Maharashtra	SINDHUDURG	KUDAL	Mudyacha Kond
3669	Maharashtra	SINDHUDURG	KUDAL	Kanduli
3670	Maharashtra	SINDHUDURG	KUDAL	Madgaon
3671	Maharashtra	SINDHUDURG	KUDAL	Kaleli
3672	Maharashtra	SINDHUDURG	KUDAL	Taligaon
3673	Maharashtra	SINDHUDURG	KUDAL	Munagi
3674	Maharashtra	SINDHUDURG	KUDAL	Bhattgaon
3675	Maharashtra	SINDHUDURG	KUDAL	Tendoli
3676	Maharashtra	SINDHUDURG	KUDAL	Akeri
3677	Maharashtra	SINDHUDURG	SAWANTWADI	Shirshinge
3678	Maharashtra	SINDHUDURG	SAWANTWADI	Amboli
3679	Maharashtra	SINDHUDURG	SAWANTWADI	Gele
3680	Maharashtra	SINDHUDURG	SAWANTWADI	Sawarwad
3681	Maharashtra	SINDHUDURG	SAWANTWADI	Verle
3682	Maharashtra	SINDHUDURG	SAWANTWADI	Sangeli
3683	Maharashtra	SINDHUDURG	SAWANTWADI	Ambegaon
3684	Maharashtra	SINDHUDURG	SAWANTWADI	Ovaliye
3685	Maharashtra	SINDHUDURG	SAWANTWADI	Madkhol
3686	Maharashtra	SINDHUDURG	SAWANTWADI	Kunkeri
3687	Maharashtra	SINDHUDURG	SAWANTWADI	Parpoli
3688	Maharashtra	SINDHUDURG	SAWANTWADI	Nene
3689	Maharashtra	SINDHUDURG	SAWANTWADI	Kegad
3690	Maharashtra	SINDHUDURG	SAWANTWADI	Devsu
3691	Maharashtra	SINDHUDURG	SAWANTWADI	Masure
3692	Maharashtra	SINDHUDURG	SAWANTWADI	Danoli
3693	Maharashtra	SINDHUDURG	SAWANTWADI	Bhom
3694	Maharashtra	SINDHUDURG	SAWANTWADI	Nirukhe
3695	Maharashtra	SINDHUDURG	SAWANTWADI	Charathe
3696	Maharashtra	SINDHUDURG	SAWANTWADI	Kesari
3697	Maharashtra	SINDHUDURG	SAWANTWADI	Chaukul
3698	Maharashtra	SINDHUDURG	SAWANTWADI	Fansavade
3699	Maharashtra	SINDHUDURG	SAWANTWADI	Kariwade
3700	Maharashtra	SINDHUDURG	SAWANTWADI	Bavlat
3701	Maharashtra	SINDHUDURG	SAWANTWADI	Sawantwadi (M Cl)
3702	Maharashtra	SINDHUDURG	SAWANTWADI	Brahmanpat
3703	Maharashtra	SINDHUDURG	SAWANTWADI	Sarmale

SI No	STATE	DIST	TALUK	Village Name
3704	Maharashtra	SINDHUDURG	SAWANTWADI	Dabhil
3705	Maharashtra	SINDHUDURG	SAWANTWADI	Udeli
3706	Maharashtra	SINDHUDURG	SAWANTWADI	Konas
3707	Maharashtra	SINDHUDURG	SAWANTWADI	Gharap
3708	Maharashtra	SINDHUDURG	SAWANTWADI	Majgaon
3709	Maharashtra	SINDHUDURG	SAWANTWADI	Asniye
3710	Maharashtra	SINDHUDURG	SAWANTWADI	Tamboli
3711	Maharashtra	SINDHUDURG	SAWANTWADI	Kumbhavade
3712	Maharashtra	SINDHUDURG	SAWANTWADI	Degave
3713	Maharashtra	SINDHUDURG	SAWANTWADI	Banda
3714	Maharashtra	SINDHUDURG	SAWANTWADI	Padve Majgaon
3715	Maharashtra	SINDHUDURG	SAWANTWADI	Ronapal
3716	Maharashtra	SINDHUDURG	SAWANTWADI	Padve
3717	Maharashtra	SINDHUDURG	SAWANTWADI	Dandeli
3718	Maharashtra	SINDHUDURG	SAWANTWADI	Madura
3719	Maharashtra	SINDHUDURG	SAWANTWADI	Dingne
3720	Maharashtra	SINDHUDURG	SAWANTWADI	Aros
3721	Maharashtra	SINDHUDURG	SAWANTWADI	Galei
3722	Maharashtra	SINDHUDURG	SAWANTWADI	Kondure
3723	Maharashtra	SINDHUDURG	SAWANTWADI	Satarda
3724	Maharashtra	SINDHUDURG	SAWANTWADI	Dongarpal
3725	Maharashtra	SINDHUDURG	SAWANTWADI	Gulduve
3726	Maharashtra	SINDHUDURG	SAWANTWADI	Sateli Tarf Satarda
3727	Maharashtra	SINDHUDURG	VAIBHAVVADI	Tiravade Tarf Soundal
3728	Maharashtra	SINDHUDURG	VAIBHAVVADI	Nerle
3729	Maharashtra	SINDHUDURG	VAIBHAVVADI	Palandewadi
3730	Maharashtra	SINDHUDURG	VAIBHAVVADI	Jambhavade
3731	Maharashtra	SINDHUDURG	VAIBHAVVADI	Akhavane
3732	Maharashtra	SINDHUDURG	VAIBHAVVADI	Mandavkarwadi
3733	Maharashtra	SINDHUDURG	VAIBHAVVADI	Upale
3734	Maharashtra	SINDHUDURG	VAIBHAVVADI	Mounde
3735	Maharashtra	SINDHUDURG	VAIBHAVVADI	Bhom
3736	Maharashtra	SINDHUDURG	VAIBHAVVADI	Ainari
3737	Maharashtra	SINDHUDURG	VAIBHAVVADI	Bhui Bawada
3738	Maharashtra	SINDHUDURG	VAIBHAVVADI	Tiravade Tarf Kharepatan
3739	Maharashtra	SINDHUDURG	VAIBHAVVADI	Kumbharwadi
3740	Maharashtra	SINDHUDURG	VAIBHAVVADI	Ringewadi
3741	Maharashtra	SINDHUDURG	VAIBHAVVADI	Madhaliwadi
3742	Maharashtra	SINDHUDURG	VAIBHAVVADI	Kumbhari
3743	Maharashtra	SINDHUDURG	VAIBHAVVADI	Bhattiwadi
3744	Maharashtra	SINDHUDURG	VAIBHAVVADI	Kumbhavade
3745	Maharashtra	SINDHUDURG	VAIBHAVVADI	Pimpalwadi
3746	Maharashtra	SINDHUDURG	VAIBHAVVADI	Bhuyadewadi
3747	Maharashtra	SINDHUDURG	VAIBHAVVADI	Yedgaon
3748	Maharashtra	SINDHUDURG	VAIBHAVVADI	Karul
3749	Maharashtra	SINDHUDURG	VAIBHAVVADI	Narkarwadi
3750	Maharashtra	SINDHUDURG	VAIBHAVVADI	Navale
3751	Maharashtra	SINDHUDURG	VAIBHAVVADI	Vayamboshi
3752	Maharashtra	SINDHUDURG	VAIBHAVVADI	Sangulwadi
3753	Maharashtra	SINDHUDURG	VAIBHAVVADI	Vabhav
3754	Maharashtra	SINDHUDURG	VAIBHAVVADI	Nim Arule
3755	Maharashtra	SINDHUDURG	VAIBHAVVADI	Mohitewadi
3756	Maharashtra	SINDHUDURG	VAIBHAVVADI	Tembewadi
3757	Maharashtra	SINDHUDURG	VAIBHAVVADI	Sadure
3758	Maharashtra	SINDHUDURG	VAIBHAVVADI	Shirale
3759	Maharashtra	SINDHUDURG	VAIBHAVVADI	Achirne
3760	Maharashtra	SINDHUDURG	VAIBHAVVADI	Kurli
3761	Maharashtra	THANE	JAWHAR	Bopdari
3762	Maharashtra	THANE	JAWHAR	Vavar
3763	Maharashtra	THANE	JAWHAR	Dahul
3764	Maharashtra	THANE	JAWHAR	Dadhari
3765	Maharashtra	THANE	JAWHAR	Ozar
3766	Maharashtra	THANE	JAWHAR	Vangani
3767	Maharashtra	THANE	JAWHAR	Kharonda
3768	Maharashtra	THANE	JAWHAR	Hateri
3769	Maharashtra	THANE	JAWHAR	Morchachapada
3770	Maharashtra	THANE	JAWHAR	Tilonde
3771	Maharashtra	THANE	JAWHAR	Palshin
3772	Maharashtra	THANE	JAWHAR	Kogade
3773	Maharashtra	THANE	JAWHAR	Alyachimet

SI No	STATE	DIST	TALUK	Village Name
3774	Maharashtra	THANE	JAWHAR	Akare
3775	Maharashtra	THANE	JAWHAR	Hade
3776	Maharashtra	THANE	JAWHAR	Garadwadi
3777	Maharashtra	THANE	JAWHAR	Kardhan
3778	Maharashtra	THANE	JAWHAR	Juni Jawhar
3779	Maharashtra	THANE	JAWHAR	Dengachimet
3780	Maharashtra	THANE	JAWHAR	Kaulale
3781	Maharashtra	THANE	JAWHAR	Kadachimet
3782	Maharashtra	THANE	JAWHAR	Dongarwadi
3783	Maharashtra	THANE	JAWHAR	Nandgaon
3784	Maharashtra	THANE	JAWHAR	Chauk
3785	Maharashtra	THANE	JAWHAR	Zap
3786	Maharashtra	THANE	JAWHAR	Aine
3787	Maharashtra	THANE	JAWHAR	Manmohadi
3788	Maharashtra	THANE	JAWHAR	Medhe
3789	Maharashtra	THANE	JAWHAR	Khidse
3790	Maharashtra	THANE	MOKHADA	Ase
3791	Maharashtra	THANE	MOKHADA	Dhamani
3792	Maharashtra	THANE	MOKHADA	Dandwal
3793	Maharashtra	THANE	MOKHADA	Khoch
3794	Maharashtra	THANE	MOKHADA	Dhondmaryachimet
3795	Maharashtra	THANE	MOKHADA	Dolhare
3796	Maharashtra	THANE	MOKHADA	Sayade
3797	Maharashtra	THANE	MOKHADA	Kurlod
3798	Maharashtra	THANE	MOKHADA	Nashera
3799	Maharashtra	THANE	MOKHADA	Botoshi
3800	Maharashtra	THANE	MOKHADA	Kevanale
3801	Maharashtra	THANE	MOKHADA	Gomghar
3802	Maharashtra	THANE	MOKHADA	Suryamal
3803	Maharashtra	THANE	MOKHADA	Pachaghar
3804	Maharashtra	THANE	MOKHADA	Vashind
3805	Maharashtra	THANE	MOKHADA	Wakadpada
3806	Maharashtra	THANE	MOKHADA	Kiniste
3807	Maharashtra	THANE	MOKHADA	Amale
3808	Maharashtra	THANE	MOKHADA	Kochale
3809	Maharashtra	THANE	MOKHADA	Kashti
3810	Maharashtra	THANE	MOKHADA	Sawarde
3811	Maharashtra	THANE	MURBAD	Alawe
3812	Maharashtra	THANE	MURBAD	Talegaon
3813	Maharashtra	THANE	MURBAD	Merdi
3814	Maharashtra	THANE	MURBAD	Shiroshi
3815	Maharashtra	THANE	MURBAD	Fangaloshi
3816	Maharashtra	THANE	MURBAD	Walhivale
3817	Maharashtra	THANE	MURBAD	Kochare Bk.
3818	Maharashtra	THANE	MURBAD	Thitabi Tarf Vaishakhare
3819	Maharashtra	THANE	MURBAD	Nyahadi
3820	Maharashtra	THANE	MURBAD	Diwanpada
3821	Maharashtra	THANE	MURBAD	Fangane
3822	Maharashtra	THANE	MURBAD	Moroshi
3823	Maharashtra	THANE	MURBAD	Sawarne
3824	Maharashtra	THANE	MURBAD	Udaldon
3825	Maharashtra	THANE	MURBAD	Karavale
3826	Maharashtra	THANE	MURBAD	Vaishakhare
3827	Maharashtra	THANE	MURBAD	Sajgaon
3828	Maharashtra	THANE	MURBAD	Pimpalgaon
3829	Maharashtra	THANE	MURBAD	Asose
3830	Maharashtra	THANE	MURBAD	Khutal Bangla
3831	Maharashtra	THANE	MURBAD	Ambele Kh.
3832	Maharashtra	THANE	MURBAD	Inde
3833	Maharashtra	THANE	MURBAD	Hireghar
3834	Maharashtra	THANE	MURBAD	Nandgaon
3835	Maharashtra	THANE	MURBAD	Pendhari
3836	Maharashtra	THANE	MURBAD	Eklahare
3837	Maharashtra	THANE	MURBAD	Mangaon
3838	Maharashtra	THANE	MURBAD	Vidhyanagar
3839	Maharashtra	THANE	MURBAD	Tembhare Bk.
3840	Maharashtra	THANE	MURBAD	Sonavale
3841	Maharashtra	THANE	MURBAD	Sajai
3842	Maharashtra	THANE	MURBAD	Madh
3843	Maharashtra	THANE	MURBAD	Padale

SI No	STATE	DIST	TALUK	Village Name
3844	Maharashtra	THANE	MURBAD	Kheware
3845	Maharashtra	THANE	MURBAD	Ghorale
3846	Maharashtra	THANE	MURBAD	Koloshi
3847	Maharashtra	THANE	MURBAD	Vidhe
3848	Maharashtra	THANE	MURBAD	Shiravali
3849	Maharashtra	THANE	MURBAD	Kalambhe
3850	Maharashtra	THANE	MURBAD	Kalambad Mu
3851	Maharashtra	THANE	MURBAD	Kole
3852	Maharashtra	THANE	MURBAD	Umbroli Kh.
3853	Maharashtra	THANE	MURBAD	Dudhanoli
3854	Maharashtra	THANE	MURBAD	Khopivali
3855	Maharashtra	THANE	MURBAD	Rao
3856	Maharashtra	THANE	MURBAD	Ganeshpur
3857	Maharashtra	THANE	MURBAD	Dehari
3858	Maharashtra	THANE	MURBAD	Uchale
3859	Maharashtra	THANE	MURBAD	--NoName--43
3860	Maharashtra	THANE	MURBAD	Sidhgad
3861	Maharashtra	THANE	MURBAD	Mohaghar
3862	Maharashtra	THANE	MURBAD	Khanivare
3863	Maharashtra	THANE	MURBAD	Kachakoli
3864	Maharashtra	THANE	MURBAD	Mohghar
3865	Maharashtra	THANE	MURBAD	Jambhurde
3866	Maharashtra	THANE	MURBAD	Dongar Nhave
3867	Maharashtra	THANE	MURBAD	Patgaon
3868	Maharashtra	THANE	SHAHAPUR	Vihigaon
3869	Maharashtra	THANE	SHAHAPUR	Dapur
3870	Maharashtra	THANE	SHAHAPUR	Tembhe
3871	Maharashtra	THANE	SHAHAPUR	Ajnup
3872	Maharashtra	THANE	SHAHAPUR	Belwad
3873	Maharashtra	THANE	SHAHAPUR	Dand
3874	Maharashtra	THANE	SHAHAPUR	Umbravane
3875	Maharashtra	THANE	SHAHAPUR	Ambivali
3876	Maharashtra	THANE	SHAHAPUR	Dahigaon
3877	Maharashtra	THANE	SHAHAPUR	Fugale
3878	Maharashtra	THANE	SHAHAPUR	Palshin
3879	Maharashtra	THANE	SHAHAPUR	Vashala Bk
3880	Maharashtra	THANE	SHAHAPUR	Vaveghar
3881	Maharashtra	THANE	SHAHAPUR	Vashala Kh
3882	Maharashtra	THANE	SHAHAPUR	Kothale
3883	Maharashtra	THANE	SHAHAPUR	Veluk
3884	Maharashtra	THANE	SHAHAPUR	Jarandi
3885	Maharashtra	THANE	SHAHAPUR	Ghanepada
3886	Maharashtra	THANE	SHAHAPUR	Khardi
3887	Maharashtra	THANE	SHAHAPUR	Aghai
3888	Maharashtra	THANE	SHAHAPUR	Dhakane
3889	Maharashtra	THANE	SHAHAPUR	Kalbhonde
3890	Maharashtra	THANE	SHAHAPUR	Vaghivali
3891	Maharashtra	THANE	SHAHAPUR	Umbarkhand
3892	Maharashtra	THANE	SHAHAPUR	Patol
3893	Maharashtra	THANE	SHAHAPUR	Pingalwadi
3894	Maharashtra	THANE	SHAHAPUR	Kalamgaon
3895	Maharashtra	THANE	SHAHAPUR	Kashti
3896	Maharashtra	THANE	SHAHAPUR	Hinglud
3897	Maharashtra	THANE	SHAHAPUR	Lahe
3898	Maharashtra	THANE	SHAHAPUR	Palheri
3899	Maharashtra	THANE	SHAHAPUR	Nevare
3900	Maharashtra	THANE	SHAHAPUR	Julawani
3901	Maharashtra	THANE	SHAHAPUR	Roadvahal
3902	Maharashtra	THANE	SHAHAPUR	Pendhari
3903	Maharashtra	THANE	SHAHAPUR	Nandgaon
3904	Maharashtra	THANE	SHAHAPUR	Mohili
3905	Maharashtra	THANE	SHAHAPUR	Chondhe Kh.
3906	Maharashtra	THANE	SHAHAPUR	Tanasa
3907	Maharashtra	THANE	SHAHAPUR	Kothare
3908	Maharashtra	THANE	SHAHAPUR	Taharpur
3909	Maharashtra	THANE	SHAHAPUR	Bhavse
3910	Maharashtra	THANE	SHAHAPUR	Vehlonde
3911	Maharashtra	THANE	SHAHAPUR	Jambhulwad
3912	Maharashtra	THANE	SHAHAPUR	Kanvinde
3913	Maharashtra	THANE	SHAHAPUR	Chondhe Bk.

SI No	STATE	DIST	TALUK	Village Name
3914	Maharashtra	THANE	SHAHAPUR	Vedvahal
3915	Maharashtra	THANE	SHAHAPUR	Gandulwad
3916	Maharashtra	THANE	SHAHAPUR	Savaroli Kh.
3917	Maharashtra	THANE	SHAHAPUR	Sakharoli
3918	Maharashtra	THANE	SHAHAPUR	Khoste
3919	Maharashtra	THANE	SHAHAPUR	Atgaon
3920	Maharashtra	THANE	SHAHAPUR	Sajivali
3921	Maharashtra	THANE	SHAHAPUR	Sakurli
3922	Maharashtra	THANE	SHAHAPUR	Khor
3923	Maharashtra	THANE	SHAHAPUR	--NoName--36
3924	Maharashtra	THANE	SHAHAPUR	Savaroli Bk.
3925	Maharashtra	THANE	SHAHAPUR	Dehene
3926	Maharashtra	THANE	SHAHAPUR	Piwali
3927	Maharashtra	THANE	SHAHAPUR	Mahuli
3928	Maharashtra	THANE	SHAHAPUR	Saralambe
3929	Maharashtra	THANE	SHAHAPUR	Khutadi
3930	Maharashtra	THANE	SHAHAPUR	Pundhe
3931	Maharashtra	THANE	SHAHAPUR	Chandroti
3932	Maharashtra	THANE	SHAHAPUR	Mamnoli
3933	Maharashtra	THANE	SHAHAPUR	Kharade
3934	Maharashtra	THANE	SHAHAPUR	--NoName--38
3935	Maharashtra	THANE	SHAHAPUR	Vandre
3936	Maharashtra	THANE	SHAHAPUR	BHINAR
3937	Maharashtra	THANE	SHAHAPUR	Lingayate
3938	Maharashtra	THANE	SHAHAPUR	Awale
3939	Maharashtra	THANE	SHAHAPUR	Gunde
3940	Maharashtra	THANE	SHAHAPUR	Katbao
3941	Maharashtra	THANE	SHAHAPUR	Adivali
3942	Maharashtra	THANE	SHAHAPUR	Ambekhor
3943	Maharashtra	THANE	SHAHAPUR	Dahagaon
3944	Maharashtra	THANE	SHAHAPUR	Asangaon
3945	Maharashtra	THANE	SHAHAPUR	MALEGAON
3946	Maharashtra	THANE	SHAHAPUR	Narayangaon
3947	Maharashtra	THANE	SHAHAPUR	Lavale
3948	Maharashtra	THANE	SHAHAPUR	Khativali
3949	Maharashtra	THANE	SHAHAPUR	Kudshet
3950	Maharashtra	THANE	SHAHAPUR	Borsheti Kh
3951	Maharashtra	THANE	SHAHAPUR	Bedisgaon
3952	Maharashtra	THANE	SHAHAPUR	Pashane
3953	Maharashtra	THANE	SHAHAPUR	Umbhrai
3954	Maharashtra	THANE	SHAHAPUR	Lenad Bk.
3955	Maharashtra	THANE	SHAHAPUR	Sane
3956	Maharashtra	THANE	SHAHAPUR	Ambivali
3957	Maharashtra	THANE	SHAHAPUR	Kharivali
3958	Maharashtra	THANE	SHAHAPUR	Palsoli
3959	Maharashtra	THANE	SHAHAPUR	Bhagdai
3960	Maharashtra	THANE	VADA	Akhada
3961	Maharashtra	THANE	VADA	Virhe
3962	Maharashtra	THANE	VADA	Ujjaini
3963	Maharashtra	THANE	VADA	Pinjal
3964	Maharashtra	THANE	VADA	Dabhon
3965	Maharashtra	THANE	VADA	Pachghar
3966	Maharashtra	THANE	VADA	Satronde
3967	Maharashtra	THANE	VADA	Shilottar
3968	Maharashtra	THANE	VADA	Pik
3969	Maharashtra	THANE	VADA	Mandava
3970	Maharashtra	THANE	VADA	Khodade
3971	Maharashtra	THANE	VADA	Ogada
3972	Maharashtra	THANE	VADA	Parali
3973	Maharashtra	THANE	VADA	Dahivali Kumbhiste
3974	Maharashtra	THANE	VADA	Amgaon
3975	Maharashtra	THANE	VADA	Kumdal
3976	Maharashtra	THANE	VADA	Ambhai
3977	Maharashtra	THANE	VADA	Tilmal
3978	Maharashtra	THANE	VADA	KARANJPADA
3979	Maharashtra	THANE	VADA	Devali
3980	Maharashtra	THANE	VADA	Kolim Sarovar
3981	Maharashtra	THANE	VADA	Posheri
3982	Maharashtra	THANE	VADA	Shele
3983	Maharashtra	THANE	VADA	Guhir

SI No	STATE	DIST	TALUK	Village Name
3984	Maharashtra	THANE	VADA	Harosale
3985	Maharashtra	THANE	VADA	Kanchad
3986	Maharashtra	THANE	VADA	Dhapad
3987	Maharashtra	THANE	VADA	Vaghote
3988	Maharashtra	THANE	VADA	Dhadhare
3989	Maharashtra	THANE	VADA	Balivali
3990	Maharashtra	THANE	VADA	Galtare
3991	Maharashtra	THANE	VADA	Vaveghar
3992	Maharashtra	THANE	VADA	Nane
3993	Maharashtra	THANE	VADA	Sange
3994	Maharashtra	THANE	VADA	Kalambhe
3995	Maharashtra	THANE	VADA	Sonale Kh.
3996	Maharashtra	THANE	VADA	Nishet
3997	Maharashtra	THANE	VADA	Pimparoli
3998	Maharashtra	THANE	VADA	Moj
3999	Maharashtra	THANE	VADA	Bilghar
4000	Maharashtra	THANE	VADA	Tuse
4001	Maharashtra	THANE	VADA	Varai Bk.
4002	Maharashtra	THANE	VADA	Sonale Bk.
4003	Maharashtra	THANE	VADA	Varai Kh.
4004	Maharashtra	THANE	VADA	Avandhe
4005	Maharashtra	THANE	VADA	Chikhale
4006	Maharashtra	THANE	VADA	Savarkhand
4007	Maharashtra	THANE	VADA	Asnas
4008	Maharashtra	THANE	VADA	Abitghar
4009	Maharashtra	THANE	VADA	Gaurapur
4010	Maharashtra	THANE	VADA	Goleghar
4011	Maharashtra	THANE	VADA	Kalambhai
4012	Maharashtra	THANE	VADA	Devghar
4013	Maharashtra	THANE	VADA	Devgaon
4014	Maharashtra	THANE	VADA	Ambarbhui
4015	Maharashtra	THANE	VADA	Budhavali
4016	Maharashtra	THANE	VADA	Bilavali
4017	Maharashtra	THANE	VADA	Kati
4018	Maharashtra	THANE	VADA	Gunj
4019	Maharashtra	THANE	VADA	Khaire Ambivali
4020	Maharashtra	THANE	VADA	Varnol
4021	Maharashtra	THANE	VADA	Dongaste
4022	Tamil Nadu	COIMBATORE	COIMBATORE NORTH	Thadagam R.F.
4023	Tamil Nadu	COIMBATORE	COIMBATORE NORTH	Anaikatti (North)
4024	Tamil Nadu	COIMBATORE	COIMBATORE NORTH	Anaikatti (South)
4025	Tamil Nadu	COIMBATORE	COIMBATORE NORTH	Veerapandi
4026	Tamil Nadu	COIMBATORE	COIMBATORE SOUTH	Boluvampatti (Block I)
4027	Tamil Nadu	COIMBATORE	COIMBATORE SOUTH	Booluvampatti(BlockII)
4028	Tamil Nadu	COIMBATORE	METTUPALAYAM	Odanthurai R.F.
4029	Tamil Nadu	COIMBATORE	METTUPALAYAM	Jaganarai Slopes R.F.
4030	Tamil Nadu	COIMBATORE	METTUPALAYAM	Kallar R.F.
4031	Tamil Nadu	COIMBATORE	METTUPALAYAM	Hulical Drug R.F.
4032	Tamil Nadu	COIMBATORE	METTUPALAYAM	Pillur Slope R.F.
4033	Tamil Nadu	COIMBATORE	METTUPALAYAM	Nellithurai and Sundapatti R.F
4034	Tamil Nadu	COIMBATORE	METTUPALAYAM	Kandiyur R.F.
4035	Tamil Nadu	COIMBATORE	METTUPALAYAM	Nilgiri Eastern Slope R.F.
4036	Tamil Nadu	COIMBATORE	METTUPALAYAM	Melur Slope R.F.
4037	Tamil Nadu	COIMBATORE	METTUPALAYAM	Anaikatti North R.F.
4038	Tamil Nadu	COIMBATORE	UDUMALAIPETTAI	Anamalai R.F.
4039	Tamil Nadu	COIMBATORE	UDUMALAIPETTAI	Anamalai R.F.
4040	Tamil Nadu	COIMBATORE	UDUMALAIPETTAI	--NoName--1201
4041	Tamil Nadu	COIMBATORE	UDUMALAIPETTAI	Amaravathi R.F.
4042	Tamil Nadu	COIMBATORE	UDUMALAIPETTAI	Kudiraiar & Kukkal R.F.
4043	Tamil Nadu	COIMBATORE	UDUMALAIPETTAI	--NoName--1212
4044	Tamil Nadu	COIMBATORE	UDUMALAIPETTAI	Manjampatti R.F.
4045	Tamil Nadu	COIMBATORE	VALPARAI	--NoName--1183
4046	Tamil Nadu	COIMBATORE	VALPARAI	Valparai (TP)
4047	Tamil Nadu	COIMBATORE	VALPARAI	--NoName--1194
4048	Tamil Nadu	COIMBATORE	VALPARAI	Valparai (TP)
4049	Tamil Nadu	COIMBATORE	VALPARAI	--NoName--1199
4050	Tamil Nadu	COIMBATORE	VALPARAI	Valparai (TP)
4051	Tamil Nadu	COIMBATORE	VALPARAI	Valparai (TP)
4052	Tamil Nadu	DINDIGUL	DINDIGUL	Kannivadi (TP)
4053	Tamil Nadu	DINDIGUL	DINDIGUL	Adalur

SI No	STATE	DIST	TALUK	Village Name
4054	Tamil Nadu	DINDIGUL	DINDIGUL	--NoName--1207
4055	Tamil Nadu	DINDIGUL	DINDIGUL	Erukkaimalai R.F.
4056	Tamil Nadu	DINDIGUL	DINDIGUL	Sirumalai
4057	Tamil Nadu	DINDIGUL	KODAIKANAL	Pachalur
4058	Tamil Nadu	DINDIGUL	KODAIKANAL	Vadagouchi
4059	Tamil Nadu	DINDIGUL	KODAIKANAL	Periyur
4060	Tamil Nadu	DINDIGUL	KODAIKANAL	Kilakkuchettipatti
4061	Tamil Nadu	DINDIGUL	KODAIKANAL	Kookkal
4062	Tamil Nadu	DINDIGUL	KODAIKANAL	Thandigudi
4063	Tamil Nadu	DINDIGUL	KODAIKANAL	Kamanur
4064	Tamil Nadu	DINDIGUL	KODAIKANAL	Adukkam
4065	Tamil Nadu	DINDIGUL	KODAIKANAL	Vellagavi
4066	Tamil Nadu	DINDIGUL	ODDANCHATRAM	Vadagadu
4067	Tamil Nadu	KANNIYAKUMARI	AGASTHEESWARAM	Thekkumalai RF.(West and East)
4068	Tamil Nadu	KANNIYAKUMARI	KALKULAM	Veerapuli R.F.
4069	Tamil Nadu	KANNIYAKUMARI	KALKULAM	Veerapuli Extn. (Old Kulasekarapuram)
4070	Tamil Nadu	KANNIYAKUMARI	KALKULAM	--NoName--1414
4071	Tamil Nadu	KANNIYAKUMARI	KALKULAM	Velimalai Forest
4072	Tamil Nadu	KANNIYAKUMARI	THOVALA	Veerapuli R.F.
4073	Tamil Nadu	KANNIYAKUMARI	THOVALA	Asambu R.F.
4074	Tamil Nadu	KANNIYAKUMARI	THOVALA	Poigaimalai R.F.
4075	Tamil Nadu	KANNIYAKUMARI	THOVALA	Azhagiapandiapuram (TP)
4076	Tamil Nadu	KANNIYAKUMARI	THOVALA	--NoName--1420
4077	Tamil Nadu	KANNIYAKUMARI	THOVALA	--NoName--1421
4078	Tamil Nadu	KANNIYAKUMARI	THOVALA	--NoName--1423
4079	Tamil Nadu	KANNIYAKUMARI	THOVALA	Velimalai R.F.
4080	Tamil Nadu	KANNIYAKUMARI	THOVALA	Thadagamalai R.F.
4081	Tamil Nadu	KANNIYAKUMARI	THOVALA	Chiramadam
4082	Tamil Nadu	KANNIYAKUMARI	THOVALA	Aralvaimozhi (TP)
4083	Tamil Nadu	KANNIYAKUMARI	THOVALA	--NoName--1443
4084	Tamil Nadu	KANNIYAKUMARI	THOVALA	Thekkumalai West
4085	Tamil Nadu	KANNIYAKUMARI	THOVALA	Thekkumalai East
4086	Tamil Nadu	KANNIYAKUMARI	VILAVANCODE	Kilamalai R.F.
4087	Tamil Nadu	THE NILGIRIS	COONOOR	Burliyar
4088	Tamil Nadu	THE NILGIRIS	COONOOR	Coonoor
4089	Tamil Nadu	THE NILGIRIS	GUDALUR	Mudumalai
4090	Tamil Nadu	THE NILGIRIS	GUDALUR	Nellakotta
4091	Tamil Nadu	THE NILGIRIS	GUDALUR	Srimadurai
4092	Tamil Nadu	THE NILGIRIS	GUDALUR	Gudalur (TP)
4093	Tamil Nadu	THE NILGIRIS	GUDALUR	O' Valley (TP)
4094	Tamil Nadu	THE NILGIRIS	KOTAGIRI	Nilgiri Eastern Slopes
4095	Tamil Nadu	THE NILGIRIS	KOTAGIRI	Nandipuram
4096	Tamil Nadu	THE NILGIRIS	KOTAGIRI	Aracode
4097	Tamil Nadu	THE NILGIRIS	KOTAGIRI	--NoName--1142
4098	Tamil Nadu	THE NILGIRIS	KOTAGIRI	Kadinamala
4099	Tamil Nadu	THE NILGIRIS	KOTAGIRI	Kengarai
4100	Tamil Nadu	THE NILGIRIS	KOTAGIRI	Jackanarai
4101	Tamil Nadu	THE NILGIRIS	KUNDAH	Mulligoor
4102	Tamil Nadu	THE NILGIRIS	KUNDAH	Kilkunda (TP)
4103	Tamil Nadu	THE NILGIRIS	KUNDAH	Melkundah
4104	Tamil Nadu	THE NILGIRIS	KUNDAH	Kinnakkorai
4105	Tamil Nadu	THE NILGIRIS	KUNDAH	Kilkunda (TP)
4106	Tamil Nadu	THE NILGIRIS	PANTHALUR	--NoName--1140
4107	Tamil Nadu	THE NILGIRIS	UDHAGAMANDALAM	--NoName--1139
4108	Tamil Nadu	THE NILGIRIS	UDHAGAMANDALAM	Ebbanad
4109	Tamil Nadu	THE NILGIRIS	UDHAGAMANDALAM	Kukka
4110	Tamil Nadu	THE NILGIRIS	UDHAGAMANDALAM	Sholur (TP)
4111	Tamil Nadu	THE NILGIRIS	UDHAGAMANDALAM	Naduvattam (TP)
4112	Tamil Nadu	THENI	ANDIPATTI	--NoName--1262
4113	Tamil Nadu	THENI	BODINAYAKANUR	Ahamalai
4114	Tamil Nadu	THENI	BODINAYAKANUR	Bodi Hill North
4115	Tamil Nadu	THENI	BODINAYAKANUR	Kottagudi
4116	Tamil Nadu	THENI	UTHAMAPALAYAM	Erasakkanayackanur Hills
4117	Tamil Nadu	THENI	UTHAMAPALAYAM	Suruli RF
4118	Tamil Nadu	THENI	UTHAMAPALAYAM	Kootheratchiyar RF
4119	Tamil Nadu	THENI	UTHAMAPALAYAM	--NoName--1271
4120	Tamil Nadu	THENI	UTHAMAPALAYAM	Vannathiparai RF
4121	Tamil Nadu	THENI	UTHAMAPALAYAM	Pandarathurai RF
4122	Tamil Nadu	THENI	UTHAMAPALAYAM	Melagudalur RF
4123	Tamil Nadu	TIRUNELVELI	AMBASAMUDRAM	Papanasam R.F.

SI No	STATE	DIST	TALUK	Village Name
4124	Tamil Nadu	TIRUNELVELI	AMBASAMUDRAM	Dharmapuramatam
4125	Tamil Nadu	TIRUNELVELI	AMBASAMUDRAM	Singampatti Zamindar Forest
4126	Tamil Nadu	TIRUNELVELI	AMBASAMUDRAM	--NoName--1379
4127	Tamil Nadu	TIRUNELVELI	AMBASAMUDRAM	Therku Viravanallur R.F.
4128	Tamil Nadu	TIRUNELVELI	NANGUNERI	Kalakadu(R.F)
4129	Tamil Nadu	TIRUNELVELI	NANGUNERI	Vadagarai
4130	Tamil Nadu	TIRUNELVELI	SHENKOTTAI	--NoName--1350
4131	Tamil Nadu	TIRUNELVELI	SHENKOTTAI	Puliyarai R.F (Part)
4132	Tamil Nadu	TIRUNELVELI	SHENKOTTAI	--NoName--1353
4133	Tamil Nadu	TIRUNELVELI	SHENKOTTAI	Achampudur (TP)
4134	Tamil Nadu	TIRUNELVELI	SHENKOTTAI	Puliyarai R.F.(Part)
4135	Tamil Nadu	TIRUNELVELI	SIVAGIRI	Sivagiri Reserve Forest
4136	Tamil Nadu	TIRUNELVELI	TENKASI	Krishnapuram R.F.
4137	Tamil Nadu	TIRUNELVELI	TENKASI	Vairavankulam R.F.
4138	Tamil Nadu	TIRUNELVELI	TENKASI	Kadayanallur Upper Slopes
4139	Tamil Nadu	TIRUNELVELI	TENKASI	--NoName--1354
4140	Tamil Nadu	TIRUNELVELI	TENKASI	Courtallam Slopes R.F.
4141	Tamil Nadu	VIRUDHUNAGAR	RAJAPALAYAM	--NoName--1281
4142	Tamil Nadu	VIRUDHUNAGAR	RAJAPALAYAM	Sappaniparambu (R.F)
4143	Tamil Nadu	VIRUDHUNAGAR	RAJAPALAYAM	Kollankondan R.F.
4144	Tamil Nadu	VIRUDHUNAGAR	RAJAPALAYAM	Kothankulam RF
4145	Tamil Nadu	VIRUDHUNAGAR	RAJAPALAYAM	Settur RF
4146	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	Khansabpuram (Unnipath RF)
4147	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	--NoName--1275
4148	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	Khansabpuram(Khansapuram RF)
4149	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	Pudupatti R.F
4150	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	Sundarapandiyam(R.F)
4151	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	Srivilliputtur R.F.
4152	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	--NoName--1277
4153	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	Venkateswarapuram R.F.
4154	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	Pillaiyarnatham R.F.
4155	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	--NoName--1279
4156	Tamil Nadu	VIRUDHUNAGAR	SRIVILLIPUTHUR	Valaikkulam R.F.

No.1/1/2010- RE (ESZ) Pt.
Government of India
Ministry of Environment & Forests
(RE Division)

Paryavaran Bhavan,
CGO Complex, Lodi Road,
New Delhi – 110 003
Dated: 17th August 2012

OFFICE ORDER

Sub: Constitution of High Level Working Group to study the preservation of the ecology, environmental integrity and holistic development of the Western Ghats in view of their rich and unique biodiversity

Preamble

Western Ghats are an important geological landform of peninsular India. It is the origin of Godavari, Krishna, Kaveri and a myriad of rivers which are life line for the people of southern India. On its ecological health depends livelihoods of millions of people belonging to the six Western Ghats states of Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala.

Western Ghats is one of the identified hotspots of biological diversity globally and is a treasure trove of biological diversity. Western Ghats harbour many endemic species of flowering plants, endemic fishes, amphibians, reptiles, birds, mammals and invertebrates.

It is also notable center of evolution of economically important domesticated plant species such as pepper, cardamom, cinnamon, mango and jackfruit. The forests harboured by the Western Ghats play a significant and important ecological function in sequestration of atmospheric CO₂ and hence have an important role in climate change.

Western Ghats have many unique habitats which are home to a variety of endemic species of flora and fauna. The lower elevations of the southern Western Ghats harbour remarkable relic habitat termed as Myristica swamps. Myristica swamps are the only remaining habitat for Myristicaceae which is one of the most primitive plant family among the flowering plants. Apart from southern Western ghats, these swamps are reported from New Guinea, Venezuela and Amazon basin only. Similarly, the flat-topped lateritic plateaus of northern Western ghats harbour unique and rich endemic herbaceous flora which comes to bloom in the post-monsoon season. Southern Western Ghats feature a unique tropical vegetation type, viz. stunted montane evergreen forests interspersed with grasslands – the shola vegetation. Approximately 80 % of all endemic frog species are restricted to evergreen forests of Western Ghats. The wetland and aquatic habitats of Western Ghats are also unique in terms the rich diversity of species they support.

It is because of this rich biodiversity which is endemic to the region and the fact that Western Ghats are a Centre of origin of many species and hence a cradle for biological

evolution, the UNESCO included parts of Western Ghats in the UNESCO World Natural Heritage List.

The Western Ghats are not only home to the rich biodiversity, but also include areas of high human population density. In the past, major transformations of the landscape have affected the habitat integrity of the Western Ghats.

In recent decades the Government has taken serious measures to conserve the fast declining biological diversity with the establishment of Protected Area network, tiger reserves and biosphere reserves. More recently a significant new initiative has been added to the conservation efforts in the form Ecologically Sensitive Areas. These areas are not just about regulation of development but are also intimately linked to positive promotion of environment-friendly and socially inclusive development.

Keeping this in view the Ministry of Environment & Forests had constituted the Western Ghats Ecology Expert Panel (WGEEP) under the Chairmanship of Prof Madhav Gadgil on 4th March 2010 to, *inter alia*, (i) demarcate ecologically sensitive areas in Western Ghats, (ii) recommend measures for management of these ecologically sensitive areas, (iii) recommend measures for preservation, conservation and rejuvenation of this environmentally sensitive and ecologically significant region and (iv) recommend modalities for the establishment Western Ghats Ecology Authority under the Environment (Protection) Act, 1986. The tenure of the Panel expired on 31st August 2011 and the Panel has since submitted its report to the Ministry.

The Western Ghats have complex interstate character and the recommendations of WGEEP involve demarcation of Ecologically sensitive zones and zonal regulation of important sectors of activity such as agriculture, land use, mining, industry, tourism, water resources, power, roads and railways. Therefore, the Ministry sought comments/views of the concerned six State Governments and eleven Central Ministries on the report. Further, the Ministry also made the report available in public domain for seeking comments/views from all concerned stakeholders on the report on 23rd May 2012 within a period of 45 days. The Ministry has since received comments/views from some of the concerned State Governments and Central Ministries and also from a large number of stakeholders.

In order to examine the Western Ghats Ecology Expert Panel Report in a holistic and multidisciplinary fashion keeping in view the comments received from the concerned State Governments/Central Ministries/Stakeholders and other related important aspects such as preservation of precious biodiversity, needs and aspirations of the local and indigenous people, sustainable development and environmental integrity of the region, climate change and constitutional implications of centre-state relations, the Ministry constitutes a High Level Working Group with the following composition and Terms of Reference:

S.No.	Name of Expert	Status
1	Dr. K. Kasturirangan Member (Science), Planning Commission, New Delhi	Chairman
2	Professor C.R. Babu Professor Emeritus, University of Delhi & Ex Pro-Vice Chancellor, University of Delhi, Delhi	Member
3	Shri J.M. Mauskar Ex-Special Secretary Ministry of Environment and Forests Government of India, New Delhi	Member
4	Professor Kanchan Chopra Ex-Director, Institute of Economic Growth, Delhi	Member
5	Dr. Jagdish Kishwan In his personal capacity and posted at present as Additional Director General of Forests (Wildlife) Ministry of Environment and Forests Government of India, New Delhi	Member
6	Shri Darshan Shankar Chairman, Institute of Ayurveda and Integrative Medicine, Bengaluru	Member
7	Ms. Sunita Narain Director General Centre for Science and Environment, New Delhi	Member
8	Dr. P.S. Roy Director Indian Institute of Remote Sensing, Dehradun	Member
9	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India, New Delhi	Member Convenor

Special Invitee

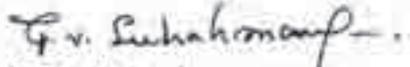
Dr. Indrani Chandrasekhran, Advisor (E&F)
Planning Commission, New Delhi

1. Terms of Reference

- I. To examine the Western Ghats Ecology Expert Panel Report in a holistic and multidisciplinary fashion in the light of the comments received from the concerned State Governments/Central Ministries/Stakeholders considering the following important aspects:
 - a) the imperatives of equitable economic and social growth of the region in the most sustainable manner with special attention and importance to the preservation of the precious biodiversity, wildlife, flora and fauna of the Western Ghats and to prevent further degradation of the same;
 - b) the rights, needs and development aspirations of local and indigenous people, tribals, forest dwellers and the most disadvantaged sections of the local community recognizing

the importance of equitable economic and social growth being harmoniously balanced with sustainable development and environmental integrity;

- c) the effects and challenges of climate change in the ecologically significant Western Ghats region;
 - d) the implications of the UNESCO heritage site recognition of some parts of the Western Ghats; and
 - e) the constitutional implications of Centre-State relations with respect to conservation and sustainable development of the Western Ghats region.
- II. To engage in comprehensive discussions with the representatives of the six states of the Western Ghats region as well as other stakeholders especially environmentalists and conservation specialists.
 - III. To recommend further course of action to the Government with respect to Western Ghats Ecology Expert Panel Report
 - IV. Any other relevant matter that may be referred to it by the Central Government in the Ministry of Environment and Forests.
2. The Committee will submit an Action Plan to implement the WGEEP report in the most effective and holistic manner within a period of two months from the date of issue of this order.
 3. The Committee may meet as often as necessary in Delhi or elsewhere in the country as required.
 4. The Committee may co-opt Members and/or special invitees as and when required.
 5. The non-official expert members would be paid TA/DA as per their entitlements under Government of India rules. The admissibility of sitting fee to non-official expert members would be as per OM of Integrated Finance Division (1-15/2011-IFD, dated 14.6.2012). The quantum of sitting fee to non-official expert members would be Rs. 1000/day/member till specific instruction is received from Ministry of Finance. The non-official co-opted members would also be paid sitting fee and TA /DA as per rules.
 6. This issues with the approval of competent authority and with the concurrence of IFD vide their Dy. No. Dir (IFD)/2238 dated 17.8.2012.


(G.V. Subrahmanyam)
Scientist "G"

Copy to:-

1. The Chairman & All Members (by name)
2. PS to MoS (I/C) E & F
3. PPS to Secretary (E&F)
4. PPS to AS (NC)
5. PPS to AS & FA

No.1/1/2010- RE (ESZ) Pt.
Government of India
Ministry of Environment & Forests
(RE Division)

Paryavaran Bhavan,
CGO Complex, Lodi Road,
New Delhi - 110 003

Dated: October 17, 2012

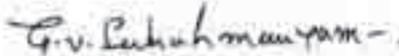
OFFICE ORDER

Sub: Constitution of High Level Working Group to study the preservation of the ecology, environmental integrity and holistic development of the Western Ghats in view of their rich and unique biodiversity – Extension of tenure. reg

The High Level Working Group to study the preservation of the ecology, environmental integrity and holistic development of the Western Ghats in view of their rich and unique biodiversity had been constituted by the Ministry vide order of even no. dated 17th August 2012. The tenure of the Working Group has now been extended by another four months till 16th February 2013.

The membership of the High Level Working Group, Terms of Reference and other terms and conditions remain the same as given in the said original order.

This issue with the approval of the Competent Authority and with the concurrence of the Integrated Finance Division of this Ministry, vide their Dy. No. 1345/IFD/E/2012 dated 17-10-2012.


(Dr. G.V. Subrahmanyam)
Adviser (RE)

To
All Members

Copy to:

1. Pay & Accounts Officer, Principal Pay & Accounts Office, Ministry of Environment & Forests, New Delhi.
2. IFD/B& A Section, Ministry of Environment & Forests.
3. PS to MOS (I/C), E&F. New Delhi
4. PPS to Secretary (E&F)
5. PPS to AS (NC).
6. Guard File.
7. Spare Copies (10).

S.No.	Name of Expert	Status
1	Dr. K. Kasturirangan Member (Science), Planning Commission, New Delhi	Chairman
2	Professor C.R. Babu Professor Emeritus, University of Delhi & Ex Pro-Vice Chancellor, University of Delhi, Delhi	Member
3	Shri J.M. Mauskar Ex-Special Secretary Ministry of Environment and Forests Government of India, New Delhi	Member
4	Professor Kanchan Chopra Ex-Director, Institute of Economic Growth, Delhi	Member
5	Dr. Jagdish Kishwan Ex-Additional Director General of Forests (Wildlife) Ministry of Environment and Forests Government of India, New Delhi	Member
6	Shri Darshan Shankar Chairman, Institute of Ayurveda and Integrative Medicine, Bengaluru	Member
7	Ms. Sunita Narain Director General Centre for Science and Environment, New Delhi	Member
8	Dr. P.S. Roy Ex-Director Indian Institute of Remote Sensing, Dehradun	Member
9	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India, New Delhi	Member Convenor

Special Invitee

Dr. Indrani Chandrasekharan, Advisor (E&F)
Planning Commission, New Delhi

No.1/1/2010- RE (ESZ) Pt.
Government of India
Ministry of Environment & Forests
(RE Division)

Paryavaran Bhavan,
CGO Complex, Lodi Road,
New Delhi – 110 003

Dated: February 15, 2013

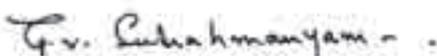
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The membership of the High Level Working Group, Terms of Reference and other terms and conditions remain the same as given in the said original order.

This issues with the approval of the Competent Authority and with the concurrence of the Integrated Finance Division of this Ministry, vide their Dy. No. 386/Dir (IFD) dated 15.2.2013.


(Dr. G.V. Subrahmanyam)
Adviser (RE)

To
All Members.

Copy to:

1. Pay & Accounts Officer, Principal Pay & Accounts Office, Ministry of Environment & Forests, New Delhi.
2. IFD/B& A Section, Ministry of Environment & Forests.
3. PS to MOS (I/C), E&F, New Delhi
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9	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India, New Delhi	Member Convenor
10	Dr. Indrani Chandrasekhran, Ex-Advisor (E&F), Planning Commission, New Delhi	<i>Special Invitee</i>

No.1/1/2010- RE (ESZ) Pt.
Government of India
Ministry of Environment & Forests
(RE Division)

Paryavaran Bhavan,
CGO Complex, Lodi Road,
New Delhi – 110 003

Dated: March 28, 2013

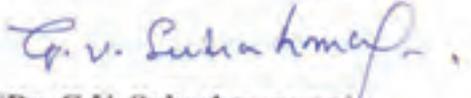
OFFICE ORDER

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The High Level Working Group to study the preservation of the ecology, environmental integrity and holistic development of the Western Ghats in view of their rich and unique biodiversity had been constituted by the Ministry vide order of even no. dated 17th August 2012. The tenure of the Working Group has now been extended till 15th April 2013.

The membership of the High Level Working Group, Terms of Reference and other terms and conditions remain the same as given in the said original order.

This issues with the approval of the Competent Authority and with the concurrence of the Integrated Finance Division of this Ministry, vide their Dy. No. 596/IFD/AS:FEA dated 28.3.2013.


(Dr. G.V. Subrahmanyam)
Adviser (RE)

To
All Members

Copy to:

1. Pay & Accounts Officer, Principal Pay & Accounts Office, Ministry of Environment & Forests, New Delhi.
2. IFD/B& A Section, Ministry of Environment & Forests.
3. PS to MOS (I/C), E&F, New Delhi
4. PPS to Secretary (E&F)
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9	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India, New Delhi	Member Convenor
10	Dr. Indrani Chandrasekhran, Ex-Advisor (E&F), Planning Commission, New Delhi	<i>Special Invitee</i>

MINUTES OF THE FIRST MEETING HELD ON 28.8.12 IN NEW DELHI OF THE HIGH LEVEL WORKING GROUP TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY

1. List of participants is annexed. Leave of absence was given to Shri J.M. Mauskar, who could not attend the meeting on account of other pressing engagements.

2. At the outset, Dr. K. Kasturirangan, Chairman of the High Level Working Group (HLWG) welcomed all the Members of the Group. In the opening remarks, he apprised the Members about the background for setting up the HLWG. He informed that HLWG was constituted on 17th August, 2012 with the main objective of examining the Western Ghats Ecology Expert Panel (WGEEP) Report in a holistic and multidisciplinary fashion in the light of comments received from the concerned State Governments/Central Ministries/Stakeholders. Drawing attention of the Members to the Terms of Reference of the HLWG, he stated that the Group has been asked to recommend further course of action to the Government with respect to WGEEP. The Chairman stated that while the Group will have consultations with various stakeholders as per the Terms of Reference, attempt shall be made to not to repeat the process already followed by WGEEP. The task of this Group should be seen as a continuum, acknowledging the richness and value of the WGEEP report and enabling the understanding and implementation of its recommendations.

3. Thereafter, the Chairman requested Dr. G.V. Subramaniam, Advisor, MoEF and Ex-Member Secretary of WGEEP, to make a brief presentation

on the recommendations of the WGEEP report and the comments received thereupon from different stakeholders.

4. Dr. Subramaniam in his presentation highlighted the main features of the report and brought out the recommendations relating to:

- i. Demarcation and delimitation of Western Ghats
- ii. Demarcation of ecologically sensitive zones in Western Ghats,
- iii. Development of broad sectoral guidelines for the ecologically sensitive zones,
- iv. Measures for management of these ecologically sensitive zones, including recommended modalities for the establishment of Western Ghats Ecology Authority under the Environment (Protection) Act, 1986.
- v. Gundia Hydroelectric Power Project, Karnataka , Athirapally Hydroelectric Power Project, Kerala, Iron ore mining in Goa and Industrial projects and iron ore mining in Ratnagiri and Sindhudurg districts of Maharashtra.

He also briefly presented the comments received from the State Governments (Maharashtra, Kerala, Goa and Gujarat) and Central Ministries (Power, Steel, Agriculture, Urban Development and Commerce & Industry), bringing out their concerns. As regards the comments of other stakeholders he stated that MoEF had received about 700 emails and about 500 comments through post. The same are being compiled.

5. The Group felt that WGEEP report is a comprehensive report on the ecology and environmental aspects of Western Ghats and has been finalized

after wide consultations with various stakeholders. The report should be examined in the light of aspirations of the States and the local people of the Western Ghats with a view to balancing the needs of ecological preservation, rural livelihood and biodiversity conservation vis-à-vis economic development of the region. Defining the Western Ghats area in an objective and clear manner is critical for policy making, planning, management and implementation for regional plans and programmes in the region. There is a need for more clarity on the criteria for categorizations of ecological sensitive zones vis-à-vis protected areas. The recommended demarcated area and the suggested degree of protection to be granted to various ESZs need to be closely examined with respect to the ground realities and the comments of various stakeholders.

6. Thereafter, the Group deliberated at length on the way forward and the methodology to be followed for firming up its report. The gist of the discussion held and decisions taken in respect of the way forward and methodology to be adopted by HLWG is as follows:

I. Consultations with six State Governments

Before having meetings with individual State Governments, it would be useful to obtain their specific comments on the following points:

1. The recommendations of the Western Ghats Ecology Expert Panel (WGEEP), could be categorized as (i) State specific recommendations; and (ii) Recommendations applicable to all States in the Western Ghats area. Under each of these categories, the States may further categorize the recommendations into following categories and give their comments:

- (a) The recommendations which are acceptable to the State Government.
 - (b) The recommendations which are acceptable with modifications along with suggested modifications and reasons for suggesting the modifications.
 - (c) The recommendations which are not at all acceptable, along with detailed reasons for not finding them acceptable.
2. What are the existing legislative and regulatory measures taken by the State Government, as also the status of existing institutions in the State relating to ecology and environment preservation, and:
- (a) Whether they are adequate to deal with the issues brought out in WGEEP report?
 - (b) Do they need improvement / strengthening ? What are State Government's suggestions in this regard?
3. What are State Government's views on the adequacy of the existing Central Government legislations and regulatory systems relating to ecology and environment in the context of the issues brought out in the WGEEP report? State Government's views on the need for their improvement / strengthening.
4. What is the implication of UNESCO heritage site recognition of some part of the Western Ghats as also of international commitments relating to biodiversity and other environment related areas?
5. State Government's comprehensive analysis on economic implications of implementing the recommendations of WGEEP.

Such an analysis may take into account all the pros and cons of implementing the recommendations.

6. Does the State Government have any regional planning process which takes into account the ecology and environment preservation of Western Ghats while considering the developmental and livelihood issues in planning? How can the recommendations of WGEEP help in improving this planning process?

It was decided that the Chairman may write to the Chief Secretaries of all these States asking them to send their comments within 10 days.

II. Consultations with Central Government Ministries and MoEF

1. It was decided that the Chairman may write to the Secretaries of eleven Central Government Ministries, i.e., Power, Steel, Agriculture, Commerce & Industry, Urban Development, Railways, Rural Development (Department of Land Resources), Tribal Affairs, Tourism, Mines & Surface Transport and seek their comments on the recommendations of the WGEEP within 10 days.
2. The following Divisions of MoEF may make presentation before the HLWG:
 - i. Climate Change Division on the effects and challenges of climate change in the ecologically significant Western Ghats region.
 - ii. Impact Assessment Division on the existing practices of impact assessment particularly for hydro power projects and mining activities in Western Ghats region; need for

cumulative impact assessment and strengthening of monitoring mechanisms.

- iii. Forest Conservation Division on the issue of status of clearances accorded / pending for the projects in the region.
- iv. Forest Policy Division on the livelihood issues of the indigenous people, tribals and forest dwellers residing in the area.
- v. Wildlife Division on the issues of eco-tourism and buffer zone development
- vi. Division dealing with CRZ issues on efficacy of the existing regulatory structure
- vii. Research and Education Division on the functioning of High Level Monitoring Committees (HLMCs) in charge of eco-sensitive zones.

The dates for these presentations would be conveyed in due course.

3. The concerned division of Planning Commission may make a presentation on the existing scheme of Planning Commission on Western Ghats development. The date for this presentation would be conveyed in due course.
4. MoEF's comments may also be obtained on the following within 10 days :

within ten days. During the discussions, it was realized that there would be a need to have further consultations with stakeholders on socio-economic issues, especially those relating to use of biodiversity and forests. It was decided that the Members may identify such groups / institutions / NGOs, etc., who are working on the socio-economic aspects of ecology, environment and forestry in the Western Ghats region and such groups / institutions / NGOs could then be invited for having interaction with HLWG. This suggested methodology of interacting with the stakeholders may be brought out clearly in a transparent manner on the website of HLWG (to be created) so as to clarify the position to all concerned.

2. It was decided that HLWG may have a meeting with the Ex-Chairman and Ex-Members of WGEEP.

IV. Technical and Legal inputs

1. It was decided to invite / hire appropriate institutions / individuals to give inputs on the following technical matters:
 - (i) River valley / hydro power projects, existing and proposed, in Western Ghats – need for cumulative impact assessment studies and hydrological analysis.
 - (ii) Wind power projects, existing and proposed, in Western Ghats – impact assessment
 - (iii) Mining of minerals including riverbed mining – impact assessment issues

- (iv) Mapping and zonation methodology adopted by WGEEP. It was decided that this study could be handled by Dr. P.S. Roy, Member, HLWG with the help of ISRO. This study may further include the issues like inclusion of ecological zoning in regional planning; mapping of other thematic layers, e.g. settlements, industries, mining, agriculture, etc., over ecological zoning; developing satellite based monitoring mechanisms and suggesting an appropriate inter-state mechanism in the Western Ghats region which could provide assistance on monitoring, modeling and decision support system based on remote sensing technology. It was decided that the Chairman may write to Chairman, ISRO, seeking their support for this purpose
2. As regards the need to have a legal consultant or to have consultations on other matters, appropriate view would be taken later.

V. Field visit

1. Goa has developed an innovative regional planning process which takes into account the eco-sensitive zones. With a view to having a better understanding of the local planning process and also to understand the issues relating to mining in Goa, it was decided that HLWG may visit Goa. The visit could be for two days – one day for the meeting with the State Government officials and the second day for visiting mining areas and other sites. It was decided that tentatively this visit could be on 20th – 21st September, 2012.
2. As regards the visit to other States, appropriate view would be taken in due course.

It was decided that Member Convener of HLWG will attempt to draft appropriate timelines for above activities with the aim to meet the deadline of 17th October, 2012 for submitting the report to the Government.

7. The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 28-08-2012

List of Members / Special invitees present:

- | | |
|--|-----------------|
| 1. Dr. K. Kasturirangan | In Chair |
| 2. Ms. Sunita Narain, Centre for Science & Environment | Member |
| 3. Shri Jagdish Kiswan, ADG(WL), Ministry of Environment | Member |
| 4. Prof. Darshan Shankar, FRLHT | Member |
| 5. Prof. C.R. Babu, University of Delhi | Member |
| 6. Prof. P.S.Roy, IIRS, Dehradun | Member |
| 7. Ms. Kanchan Chopra , Former Director (IEG) | Member |
| 8. Shri Ajay Tyagi, Joint Secretary, Ministry of Environment | Member Convener |
| 9. Dr. Ranjan Chatterji, Consultant, Planning Commission | Special Invitee |
| 10. Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission | Special Invitee |

MINUTES OF THE SECOND MEETING HELD ON 18.9.12 IN NEW DELHI OF THE HIGH LEVEL WORKING GROUP TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY

List of participants is annexed. Leave of absence was given to Shri Darshan Shankar, who could not attend the meeting on account of other pressing engagements.

At the outset, Dr. K. Kasturirangan, Chairman of the High Level Working Group (HLWG) welcomed all the Members of the Group. In the opening remarks, Dr. Kasturirangan highlighted the need for arriving at time-bound targets after focussed discussions on the agenda items.

Item 2: Confirmation of the minutes of the 1st meeting of the HLWG

Minutes of the first meeting of HLWG were confirmed.

Item 3: Action taken on the minutes of the previous meeting.

The Chairman, requested Shri Ajay Tyagi, Joint Secretary and Member Convenor, HLWG to inform the members about the follow-up actions following the first meeting of HLWG. Shri Ajay Tyagi informed that the item-wise Action Taken Report has been circulated to the members along with the agenda papers (Annexure 1). Shri Tyagi explained the item-wise actions taken. He informed the members the status of responses received from the concerned State Government and Central Ministries including the Ministry of Environment and Forests.

With reference to the presentations which are to be made to the HLWG by the relevant Divisions of the Ministry and the concerned Division of the Planning Commission handling the Western Ghats Development programme it was decided that both these presentations would be taken up in the third meeting of the HLWG. It was also decided that Secretaries of “North-East Council” and “Inter-State Council” would be called for presentation by the HLWG after the consultation of HLWG with State Governments.

Shri Ajay Tyagi also informed the Working Group that the comments received from the stakeholders both by post and email have been segregated, and the copies of detailed comments received from stakeholders covering various sectors have been provided to the members for their perusal. The HLWG decided that the comments may also be categorized in a sector-wise fashion, and their summary be given to the members of HLWG.

Item 4: Identification and Clustering of work elements for HLWG Report

Item 4.1. Zonation Criteria - (i) Disturbance factor, (ii) Extent of spread of endemic elements, (iii) Watershed

Item 4.2. Zonation - PA, ESZ1, ESZ2 and ESZ3

The Chairman requested Professor CR Babu to provide his views on the abovementioned items. Professor Babu opined that there is a need for rationalization of the Report of the Western Ghats Ecology Expert Panel (WGEEP) submitted to the Ministry of Environment and Forests, Government of India. The following issues were discussed and elaborated upon:

- (i) existence of a gap between the aspirations of conservationists and sustainable developmental needs of people;
- (ii) the zonation methodology is largely based on biodiversity values, with limited information on a few taxa, lack of clarity on the distribution of endemics, rarity of species, resilience and relationships of altitude and slope with biodiversity values;
- (iii) the methodology has not factored in disturbance regime, watersheds, livelihoods of people and their socio-economic needs; and
- (iv) inadequate focus on the sustainable development approach for natural resource conservation.

The Chairman also requested Dr. P.S. Roy to present the mapping exercise undertaken by the ISRO with respect to Western Ghats. Dr. P.S. Roy presented the outputs generated by ISRO for mapping of endemic species and the cultural landscape.

This was followed by detailed discussion on the zonation criteria and the zonation methodology. It was felt that the 9 km x 9 km resolution used by the WGEEP is coarse resolution and has not been able to pick up the cultural landscape. After detailed deliberations, it was decided that Professor C.R. Babu and Dr. P.S. Roy would prepare a

note on the zonation criteria and zonation methodology after addressing the concerns of the members which include use of finer resolution of maps, integration of cultural landscapes including mapping of human settlements and disturbance factors, extent and spread of endemic elements and watershed boundaries.

This note would also provide detailed requirements for generation of outputs using the modified zonation criteria and methodology for specific areas in Western Ghats as a pilot study, for each state one area or an example of applying the methodology. The modified zonation criteria and methodology would *inter alia* include mapping of human settlements and disturbance factors, extent and spread of endemic elements and watershed boundaries. The note would also provide the methodology for development of a GIS based decision support system. This note would be prepared within 15 days. The datasets available with ISRO would be used to implement the methodology. The Group felt that there should be a focus on the zonation criteria, development features within the zone and administrative mechanism for the management of ecosensitive zones.

Item 4.3. Institutional Mechanism for monitoring, undertaking carrying capacity studies and Cumulative Environmental Impact Assessment of development projects

The need for an institutional mechanism for effective monitoring was recognized by the Working Group. The Chairman requested Dr. P.S. Roy to develop a proposal on institutional mechanism which would act as a central repository of data, act as a networking centre and utilize technology to the fullest for undertaking monitoring, carrying capacity and cumulative environmental impact assessment studies of development project studies relevant to the Western Ghats.

Item 4.4. Examination of Issues relating to Conservation of natural resources across Western Ghats- activities, projects referred; (a) Athirappily Hydel Project, (b) Gundia Hydel Project,(c) Mining, power production and polluting industries in Ratnagiri and Sindhudurg projects, (d) Mining in Goa

Professor CR Babu summarized the salient issues related to abovementioned projects. After detailed discussion, it was decided that these issues would be dealt with in greater detail after consultations with concerned State Governments.

Item 4.5. Centre - State relations with respect to environmental regulations regulatory authorities and resource utilization.

It was decided that Professor Kanchan Chopra and Ms. Sunita Narain would jointly develop a concept note on 'Development in the Western Ghats states with a focus on centre-state relations etc.' in 10 days.

Item 4.6. Recommendations / Guidelines -(i) Sectoral, (ii) Applicable across Western Ghats

It was decided that the members of HLWG would give their item-wise specific comments on the sectoral guidelines given in Table 6 of WGEEP report to the Member Convenor.

Item 5. Discussion on proposed Goa Visit on 26th – 27th September, 2012

It was decided that the trip to Goa may be postponed to a later date, and on the same dates, HLWG may visit Karnataka i.e. on 26th and 27th September 2012. Accordingly, it was felt that an official communication may be sent to Chief Secretary, Government of Karnataka.

Item 6. Approval of draft note on consultation process with stakeholders, to be hosted on HLWG's website, and layout of website

The HLWG considered the draft consultation note and layout of website for HLWG. The Working Group approved the consultation note laying down the methodology to be adopted by the Panel for consultation with stakeholders with the suggestion that a line should be added in the note at the end stating explicitly that all the minutes of the Working Group would be put on the website of HLWG.

Item 7. Any other item with the permission of the Chair.

It was decided that the next meeting of the HLWG would be held on 8th October 2012 in New Delhi.

The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 18-09-2012

List of Members / Special invitees present:

- | | | |
|-----|---|-----------------|
| 11. | Dr. K. Kasturirangan | In Chair |
| 12. | Ms. Sunita Narain, Centre for Science & Environment | Member |
| 13. | Shri Jagdish Kiswan, ADG(WL), Ministry of Environment | Member |
| 14. | Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India | Member |
| 15. | Prof. C.R. Babu, University of Delhi | Member |
| 16. | Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun | Member |
| 17. | Ms. Kanchan Chopra , Former Director Institute of Economic Growth | Member |
| 18. | Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India | Member Convener |
| 19. | Dr. Ranjan Chatterji, Consultant, Planning Commission | Special Invitee |
| 20. | Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission | Special Invitee |

MINUTES OF THE THIRD MEETING OF HIGH LEVEL WORKING GROUP (HLWG) TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY HELD ON 8.10.12 IN NEW DELHI

List of participants is annexed.

At the outset, Dr. K. Kasturirangan, Chairman of the High Level Working Group (HLWG) welcomed all the Members of the Group. In the opening remarks, Dr. Kasturirangan provided an overview on the agenda items listed for the meeting. The Chairman highlighted the fact that the Working Group needs to move towards taking a final view on the agenda items listed and link them up to time bound action.

Item 2: Confirmation of the minutes of the 2nd meeting of the HLWG

Minutes of the second meeting of HLWG were confirmed after incorporating minor typographical amendment suggested by Prof Kanchan Chopra wherein the topic of the concept note under item 4.5 should read as “Development in the Western Ghats states with a focus on centre-state relations etc.”.

Item 3: Presentations by officials of MoEF and Planning Commission

a) Ecologically Sensitive Zones

In his talk, Dr. G.V. Subrahmanyam, Advisor (RE), Ministry of Environment and Forests covered (a) definition of ecosensitive zone, (b) purpose of declaring ecosensitive zone, (c) statutory provisions under which ESZs are notified, (d) the objective of declaring ESZs, (e) types of proposals received by the Ministry for declaration of ESZs, (f) ecosensitive zones declared by the Ministry to date, and (g) role and functions of High Level Monitoring Committees (HLMCs). After the presentation, the following issues were deliberated upon by the HLWG (i) criteria for adopted by the Ministry for identifying the ecologically sensitive zones, (ii) role and functioning of HLMCs, (iii) how does declaration of ESZ impinge upon peoples right in the designated areas, and (iv) list of activities which are regulated or prohibited in the ESZs as per the Ministry’s guidelines.

HLWG requested Dr. G.V. Subrahmanyam to provide a note on ecologically Sensitive Zones covering the following aspects - the chronological sequence of the ESZs notified

till date, functioning of HLMCs, adequacy of institutional mechanism for administering ESZs, and guidelines developed by the Wildlife Division for ESZs around Protected Areas.

b) Ecotourism, buffer zones and World Heritage Sites

Dr. S.K. Khanduri, Inspector General (Wildlife), Ministry of Environment and Forests covered ecotourism guidelines prepared by the National Tiger Conservation Authority and the recent Supreme Court directions in the matter. He highlighted the fact that the WGEEP has adopted these ecotourism guidelines in ESZs in Western Ghats. Dr. Khanduri also covered the concept of buffer zone as per the section 38 V (3) of the Wildlife Protection Act. Dr. Khanduri elaborated on the declaration of ESZs around Protected Areas as per the National Board for Wildlife Resolution of 2002 and the subsequent Supreme Court directions. He also provided an overview of the recognition of some of the sites of Western Ghats as World Heritage Sites.

After the presentation, the Working Group deliberated on the following issues (i) World Heritage Sites in Western Ghats vis-a-vis ESZ 1 areas demarcated by WGEEP, (ii) rationale for selecting certain sites of Western Ghats for designation as World Heritage Sites, (iii) India's international commitment with respect to World Heritage Sites in Western Ghats.

HLWG requested Dr. S.K. Khanduri to provide a background note on World Heritage Sites along with dossier submitted to the UNESCO on the subject. He was requested to provide the information regarding the percentage of Western Ghats area covered by the World Heritage sites and Protected Areas. He was also requested to provide the present status of declaration of ESZs around Protected Areas and the recent CEC guidelines in the matter which have been submitted to the Supreme Court.

c) Scheme on Western Ghats Development Program (WGDP)

Dr. B.D. Viridi, Advisor, Planning Commission provided an overview to the Hill Areas Development Programme (HADP) and Western Ghats Development programme (WGDP) covering the *inter alia* background, allocation of special central assistance, difference between HADP and WGDP, states covered under HADP and WGDP, Allocations to WGDP from Vth to XIth plan, and major activities covered under WGDP. After the presentation the following issues were discussed in detail (i) nature of assistance provided under the programme, (ii) type of activities supported under the programme, (iii) what the kind of development adopted in Western Ghats?, and (iv) how to incentivize such development activities?

d) Environmental Impact Assessment

Dr. B. B. Burman, Director (Impact Assessment – River valley projects), Ministry of Environment and Forests, provided an overview of the impact assessment process and procedures. Dr. Burman explained the various steps involved in the Environmental Impact assessment studies. He also provided detailed information on an example of cumulative impact assessment study supported by the Ministry in the North east region of the country.

The Working Group specifically sought the chronology of events with respect to the Athirappily hydro-power project in Kerala and Gundia Hydroelectric Power Project in Karnataka and the details of court cases, if any, from the IA Division of the Ministry.

e) Climate change and Western Ghats

Dr. Sathpathy, Director (Climate Change), Ministry of Environment and Forests, gave a presentation on Effects and Challenges of Climate Change in the Ecologically Significant Western Ghats”. Dr. Sathpathy provided the climate projections for 2030 in the Western Ghats region and its impacts on agriculture, forests, human health, water resources. He elaborated upon the 4x4 assessment undertaken by the Ministry dealing with different sectors and 4 important regions of the country which includes Western Ghats. Dr Sathpathy also provided an overview to the policy framework to address climate change concerns and listed out the challenges which need to be addressed with respect to climate

change. The Working Group deliberated upon potential impacts of the projected climate change scenarios. The Working Group requested Dr. Sathpathy to provide a note climate change adaptation action and the state action plans with specific reference to Western Ghats.

Item 4: Progress made on the minutes of the 2nd Meetings and Action taken

The Chairman, requested Shri Ajay Tyagi, Joint Secretary and Member Convenor, HLWG to inform the members about the follow-up actions following the second meeting of HLWG. Shri Ajay Tyagi informed the members that the item-wise Action Taken Report has been circulated along with the agenda papers (Annexure 1).

Item 5. Work plan to generate Geospatial data to support High Level Working Group on Western Ghats

As a follow up to the discussions in the 2nd meeting of HLWG, Dr. PS Roy prepared a detailed proposal to generate Geospatial data to support High Level Working Group on Western Ghats with inputs from Prof C.R. Babu. The proposal was circulated to all the members in advance. The proposal relates to landscape level characterizations of existing land use /land cover, biodiversity characterization at landscape level for Disturbance, endemism and watershed to provide supporting information to HLWG. It will also overlay cultural and natural landscape on ESZ1, ESZ2 and ESZ3. The data requirements, expected outputs, timelines, facilities and budgetary support.

Dr. PS Roy presented the proposal for generation of fine resolution GIS maps for the HLWG. After detailed deliberations the Working Group finalized the expected outcomes from the generation of GIS maps (i) potential sites which could be recommended as ESZs, (ii) differences between the WGEEP maps and maps generated for the study, and (iii) methodology for future planning. It was decided that Dr. PS Roy would be able to show interim results in one month time, while the complete outputs could be made available in two months time period.

The HLWG decided that keeping in view the nature and scope of work the National Remote Sensing Centre, Indian Space Research Organization (ISRO) would be the most appropriate institution to undertake geospatial analysis of Western Ghats region. As

ISRO has agreed to partner with the HLWG in this very important endeavour, the Ministry would write to Director, NRSC in this regard. It was also decided that the Ministry would write to all concerned Government Departments/Organizations/Institutions/Agencies and individuals requesting them to provide relevant geospatial data to HLWG for analysis.

It was also decided that a team comprising of Dr. PS Roy, Prof CR Babu and Dr. Indrani Chandrasekharan would visit NRSC to have discussion on the proposal with their scientists and to initiate the project work. Further, it was also decided that the data requirements as mentioned by Prof Kanchan Chopra in her note would also be generated under this study. The Working Group also enquired from Dr. PS Roy about the financial implications of undertaking such a study, it was informed that the cost of the study would be limited to the air travel expenditure of the team members as the geospatial data is available with ISRO/Government agencies. The Working Group recommended that the expenditure for the study be supported by the MoEF.

Item 6: Institutional Mechanism for monitoring, undertaking carrying capacity studies and Cumulative Environmental Impact Assessment of development projects – Centre for Environmental Policies, Research and Advisories for Western Ghats

As a follow up to the discussions in the 2nd meeting of HLWG, Dr. PS Roy prepared a detailed note on the concept of a Centre for Environmental Policies, Research and Advisories for Western Ghats which was circulated to the members of the HLWG. Dr. Roy gave presentation of the proposed Centre. He mentioned that the proposed Centre provided a framework for systematic utilization of the existing data and knowledge for preparation of policies to conserve rich biodiversity in the Western Ghats. He elaborated upon the main objectives of the Centre, the data and services providers, the network of scientific institutions which could be associated with the Centre, the methodology for field data collection and development of spatial decision support system.

The Working Group discussed the various options for providing an appropriate institutional mechanism for such a Centre. It was felt that this Centre could be supported under the Western Ghats Development Programme of the Planning Commission as it

would be dealing with cross-cutting issues across different Central Ministries and different State Governments.

Item 7. Centre - State relations and environmental regulations, regulatory authorities and resource utilization - Prof. Kanchan Chopra and Dr Sunita Narain

As a follow up to the discussions in the 2nd meeting of HLWG, Prof. Kanchan Chopra prepared a detailed note on “Development in Western Ghats States: Nuanced, Inclusive and Sustainable”. Prof Kanchan Chopra provided an overview of different development scenarios for Western Ghats which were nuanced to address the needs of the local people while conserving the ecological uniqueness of ESZs in Western Ghats. Prof Chopra highlighted the issues related to environmental governance, decision making procedure and the deliberative process which may be adopted in the Western Ghats. She also highlighted the data requirements for analyzing different development scenarios in the Western Ghats. She mentioned that the relevant data may be collected as part of the consolidated project for generation of geospatial data for the Working Group.

The Working Group deliberated at length on the type of development which should be undertaken in the Western Ghats region. The Working group also discussed the relevance of nuanced approach to development in ESZ areas of Western Ghats.

Item 8. Comments received from States- Maharashtra, Tamil Nadu, Gujarat

Item 9. Comments received from Central Ministries/ Departments (Land Resources, Tourism, Agriculture and Cooperation, Power, Commerce, Railways)

Item 10. Reflections on WGEEP report- Vijnana Bharathi , Maharashtra Chamber of Commerce, Codagu Planters Association, Codagu Small Planters Association, Western Ghats Task Force, Government of Karnataka

Shri Ajay Tyagi, Member Convenor, informed the members of HLWG that hard copies of the comments have been provided to each member for their perusal as part of Agenda papers. The members said that they would go through the comments and deliberate on the same at appropriate stage, if required.

Item 11. Review of comments received on the WGEEP report and action taken

Shri Ajay Tyagi, Member Convenor, informed the Working Group that summary of stakeholder comments on WGEEP report has been given to all members HLWG for their perusal. The members said that they would go through the comments and deliberate on the same at appropriate stage, if required.

Item 12 & 13. Comments on the Recommendations/Guidelines of the WGEEP (i) Sectoral and (ii) Applicable across Western Ghats and Responses of the Members to the decisions taken during the 2nd meeting

As a follow up to the discussions in the 2nd meeting of HLWG, Prof Babu provided detailed inputs on the sectoral guidelines. Prof Babu categorized the sectoral guidelines given by WGEEP into recommendations which could be accepted with little or no modifications and recommendations which need substantial modifications.

Further, in continuation of the deliberations of the 2nd meeting of HLWG, Prof CR Babu also provided a further note giving detailed analysis of the zonation methodology adopted by the WGEEP. Prof Babu also provided a note on the Western Ghats boundary adopted by WGEEP report. Prof provided an overview of the different definitions of Western Ghats including those adopted by Western Ghats Development programme (WGDP), WGEEP and geological definition of the area.

Shri JM Mauskar also provided detailed comments on the WGEEP report covering *inter alia* the following issues - boundary of Western Ghats, criteria used to arrive at ecological sensitivity, grid size, recommendations on hydropower and industry sector and Western Ghats Authority.

The Working Group deliberated at length on various issues highlighted above.

Item 14 Any other matter with the permission of the Chair

Shri Ajay Tyagi informed the members of HLWG about status of the cases pending with respect to the Western Ghats Ecology Expert Panel report in the National Green Tribunal and the Bombay High Court.

Shri Ajay Tyagi also mentioned that as the two month tenure of the Working Group would expire on 16th October 2012, a view may have to be taken by the HLWG in this regard. The members of HLWG reviewed the progress of work and the further tasks left out. Keeping in view, the wide scope work assigned to the Working Group including holding official consultations with State governments/Central Ministries and Stakeholders, it was decided by the Working Group that an extension of 4 months may be sought from the Ministry to meaningfully address the ToRs given to the Group.

It was also decided that Dr. K. Kasturirangan, Chairman, HLWG would write a detailed letter to the Hon'ble MEF apprising Hon'ble MEF on the activities undertaken by the HLWG with a request to extend the tenure of the HLWG by 4 months.

The Working Group also decided that Dr. Indrani Chandrasekharan and Ms. Sunita Narain would prepare a draft structure of the HLWG report and circulate to members for their comments/suggestions.

The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 8-10-2012

List of Members / Special invitees present:

21.	Dr. K. Kasturirangan	In Chair
22.	Ms. Sunita Narain, Centre for Science & Environment	Member
23.	Shri Jagdish Kiswan, ADG(WL), Ministry of Environment	Member
24.	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India	Member
25.	Prof. C.R. Babu, University of Delhi	Member
26.	Shri Darshan Shankar, Chairman, Indian Institute of Ayurveda Research	Member
27.	Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun	Member
28.	Ms. Kanchan Chopra , Former Director Institute of Economic Growth	Member
29.	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
30.	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee
31.	Dr. G.V. Subrahmanyam, Advisor, Ministry of Environment and Forests	Special Invitee
32.	Dr. B.D. Viridi, Advisor, Planning Commission	Special Invitee
33.	Dr. S.K. Khanduri, IG (WL), Ministry of Environment and Forests	Special Invitee
34.	Dr. Indu Patnaik, Joint Advisor, Planning Commission	Special Invitee
35.	Dr. S.C. Garkoti, Director, Ministry of Environment and Forests	Special Invitee
36.	Dr. S. Sathpathy, Director, Ministry of Environment and Forests	Special Invitee
37.	Dr. B.B. Burman, Director, Ministry of Environment and Forests	Special Invitee
38.	Dr. Sonu Singh, Deputy Director, Ministry of Environment and Forests	Special Invitee
39.	Dr. P.V. Subba Rao, Sc 'B'	Special Invitee

MINUTES OF THE FOURTH MEETING OF HIGH LEVEL WORKING GROUP (HLWG) TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY HELD ON 20.11.12 IN MUMBAI

List of participants is annexed. Leave of absence was given to Prof Kanchan Chopra, who could not attend the meeting on account of other pressing engagements.

At the outset, Dr. K. Kasturirangan, Chairman, High Level Working Group (HLWG) welcomed all Members of the Group. In the opening remarks, Dr. Kasturirangan mentioned about the in depth discussion with the State Government of Maharashtra on the Western Ghats Ecology Expert panel Report. The Chairman also mentioned that the Working Group needs to move towards finalization of the report in a time bound manner.

Item 1: Confirmation of the minutes of the 3rd meeting of the HLWG

Minutes of the third meeting of HLWG were confirmed.

Item 2: Action Taken Report on the minutes of the 3rd meeting.

Shri Ajay Tyagi informed the Working Group that the item-wise Actions Taken Report has been circulated to the members along with the agenda papers (Annexure 1).

Item 3: Discussion on the geospatial analysis carried out at NRSC, Hyderabad by Dr. PS Roy, Prof CR Babu and Dr. Indrani Chadrasekharan and finalization of criteria for demarcation of Western Ghats area and ecologically sensitive areas

It was informed to the Working Group that the report on the visit of the team to NRSC, Hyderabad has already been circulated to the members. This was followed by a detailed presentation by Dr. PS Roy on geospatial analysis carried out at NRSC, Hyderabad (Annexure 2). In his presentation Dr. Roy explained the new methodology developed for identification and demarcation of ecologically sensitive areas in the Western Ghats. He also elaborated upon the variables used for identification and demarcation of ecologically sensitive areas which included forest fragmentation, biodiversity richness, watershed boundaries, and human population density. Dr Roy informed the Working Group that a pilot study for identification for ecologically sensitive areas using the new methodology

was carried out for the following three districts in Western Ghats viz. (i) Uttara Kannada District, Karnataka, (ii) Idduki District, Kerala and Ratnagiri District, Maharashtra.

The Working Group scrutinized in detail the outputs generated from the pilot study. After detailed discussion the Working Group approved the criteria used for demarcation of ecologically sensitive areas. It was also decided that information on existing wildlife corridors would also be incorporated in the demarcation of ecologically sensitive areas so that the issue of habitat continuity may also be addressed. Accordingly, Dr. PS Roy, Prof CR Babu and Dr. Indrani Chandrasekharan would visit Wildlife Institute of India, Dehradun to incorporate the information of Wildlife Corridors in the current geospatial analysis. It was decided that as part of the geospatial analysis a sensitivity analysis would be carried out with respect to the size of the grid used for mapping.

Prof CR Babu informed the Working Group about the progress in demarcation of the Western Ghats boundary. The Working Group decided that a meeting be convened under the Chairmanship of Dr. Kasturirangan, wherein, Dr. Valdiya, Jawaharlal Nehru Centre for Advanced Scientific Research, and Director, NRSC and other identified experts may be called to finalize the definition of Western Ghats. It was also suggested that a tabular chart may be prepared for the existing definitions adopted for the Western Ghats so that a logical decision could be arrived at.

Item 4. Comments on the draft structure of the HLWG report suggested by Dr. Indrani Chandrasekharan

The draft structure of the report prepared by Dr. Indrani Chandrasekharan is given at Annexure 3. Dr Sunita Narain presented the draft structure of the report. Various sections which could be included in the report were deliberated upon. It was suggested that a section on the working of the HLWG and the activities undertaken could also be included. The modified proposed draft structure is given at Annexure 4. The Working Group resolved that a draft structure of the report should be made ready latest by 15th January 2013 so that the final report can be made ready within the stipulated time.

Item 5. Reflections on the interaction with State Government of Maharashtra

The members expressed satisfaction on the interaction with the Government of Maharashtra. The summary record of the discussion is given at Annexure 5. The concerns of the Government of Maharashtra regarding the WGEEP report were noted including those regarding the current moratorium on Ratnagiri and Sindhudurg Districts. It was felt that the follow up suggestions given by Chairman, HLWG to Government of Maharashtra for identifying a nodal person to interact with HLWG and to constitute a Committee of Secretaries to provide views of the State Government on the specific issues raised by the HLWG be done expeditiously.

Item 6. Way forward for consultations with concerned State government of Western Ghats region and further stakeholder consultations

The Working Group discussed the plan for holding consultations with the State Governments. It was felt that keeping in view the tenure of the Working Group the State visits of the Working Group may be completed by mid January 2013. It was also decided by the Working Group that selected Stakeholders may be called for interaction with the Working group as per the methodology put up on the website of the Working Group. It was decided that Dr. Indrani chandrsekharan and Shri Ajay Tyagi would draft the time table for consultations of HLWG, discuss with the members of the HLWG and finalize the same.

Item 7. Proposed meetings with the Inter State Council Secretariat and North Eastern Council; Way forward in firming views on the proposed Centre for Environmental Policies

It was felt by the Working Group that meetings with the Inter State Council Secretariat and North Eastern Council would be done after the interactions with the State Governments are completed. It was decided that Dr. Indrani chandrsekharan and Shri Ajay Tyagi would finalize an appropriate date for meeting with Inter State Council Secretariat and North Eastern Council as per the approved time table for consultation of HLWG.

The meeting ended with a vote of thanks to and from the Chair.

Meeting of the High Level Working Group (HLWG) held on 20-11-2012

List of Members / Special invitees present:

40.	Dr. K. Kasturirangan	In Chair
41.	Dr. Sunita Narain, Centre for Science & Environment	Member
42.	Shri Jagdish Kiswan, ADG(WL), Ministry of Environment	Member
43.	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India	Member
44.	Prof. C.R. Babu, University of Delhi	Member
45.	Shri Darshan Shankar, Chairman, Indian Institute of Ayurveda Research	Member
46.	Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun	Member
47.	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
48.	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee

MINUTES OF THE FIFTH MEETING OF HIGH LEVEL WORKING GROUP (HLWG) TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY HELD ON 11.2.13 IN GOA

List of participants is annexed. Leave of absence was given to Prof Kanchan Chopra and Dr. Darshan Shankar who could not attend the meeting on account of other pressing engagements.

At the outset, Dr. K. Kasturirangan, Chairman, High Level Working Group (HLWG) welcomed all Members of the Group. Dr. Kasturirangan briefed the HLWG about his meeting with Hon'ble Chief Minister of Goa. The Chairman mentioned that it was a very useful meeting. Some of the major reservations expressed by the CM were that (i) WGEEP report is biased towards biodiversity preservation, (ii) common man's issues and the economic impact of recommendations on a small state like Goa have been completely ignored in the report, (iii) the recommendation relating to setting up of Western Ghats Ecology Authority in WGEEP report has serious impact on the state autonomy and federal structure of the country, and (iv) implementation of WGEEP report would lead to chaotic situation in the state of Goa. CM also highlighted the rich legacy of environmental protection in Goa.

Item 1: Confirmation of the minutes of the 4th meeting of the HLWG

Minutes of the fourth meeting of HLWG were confirmed.

Item 2: Action Taken Report on the minutes of the 4th meeting.

Shri Ajay Tyagi, Member Convenor, HLWG informed about the actions taken since the last meeting of the Working Group.

Item 3: Geospatial analysis of Western Ghats carried out at NRSC, Hyderabad for identification of ecologically sensitive zones

Dr. CS Jha, Group Head, Forestry and Ecology Group, National Remote Sensing Centre, Hyderabad, gave a presentation on the geospatial analysis for identification of ecologically sensitive zones in Western Ghats. Dr. Jha explained the methodology used for the geospatial analysis for identification of ecosensitive zones. Based upon the

discussions, the HLWG decided that elephant and tiger corridors would be mapped as potential ESZ and the concerned State Governments may take a final view on the matter to include the corridors as part of ESZ or not. Further, the change in forest cover of Western Ghats states would be calculated by NRSC based upon two cycles of forest mapping done by Forest Survey of India after 2005. The relative change in forest cover would provide an indication to any significant impact of data acquisition date on geospatial analysis. The Working Group also finalized and approved the procedure for demarcation of the ecologically sensitive zones in Western Ghats.

The Working Group deliberated in detail the issue of delineation and demarcation of Western Ghats boundary.

HLWG observed that till date there is no accurate and acceptable definition of the Western Ghat boundary. Hence, there is no consensus on what constitutes the Western Ghats. The problem is further compounded by the fact that there are a number of eastern and western spurs, which originate from the main mountain chain thus making it difficult to arrive at a precise boundary.

As the natural boundaries of a landform generally arise out of its geology and geomorphology, the Working Group noted the outcome of the brainstorming organized by the Working Group on 17th December 2012 at NRSC, Hyderabad, wherein experts in Geomorphology, Geology, Ecology and representatives of some Western Ghats States were invited to deliberate upon the methods/approaches available for demarcating Western Ghats. The experts at the brainstorming session concluded that given the heterogeneous geological origin and geomorphology of Western Ghats it would be practically difficult to accurately and precisely demarcate Western Ghats boundary on the basis of geology and geomorphology alone.

Further, to get the perspective of the State Governments of the Western Ghats region, the High Level Working Group had requested the State Governments to share with the HLWG any exercise done by them to demarcate Western Ghats region in their respective jurisdiction. The HLWG noted that no information has been received except from the State Government of Karnataka. The Karnataka Forest Department had used (i) forest and land use pattern, (ii) rainfall and (iii) elevation as variables to define the Western

Ghats in Karnataka. The Group felt that the Karnataka methodology is very specific to the State and the criteria adopted may not apply to the other States.

Further, HLWG also noted that Planning Commission had constituted a Technical Committee under the Chairmanship of Surveyor General of India (1978) to delineate the Western Ghat region. This Committee debated the technical criteria (forest/land use pattern, elevation, rainfall pattern, geology and physiography) to delineate the Western Ghat region. They were unable to reach a conclusion on the demarcation of the Western Ghat scientifically.

The High Level Working Group also noted that the Planning Commission initiated the Western Ghat Development Programme (WGDP) way back in May, 1972, wherein, taluks with at least 20% of their area at an altitude of 600 meters or above were included in the Western Ghat Development Program for special assistance. The Planning Commission has been using 175 taluks delineated and assigned by the States to support the developmental activities in Western Ghats region of the 5 States viz., Maharashtra, Karnataka, Kerala, Tamilnadu and Goa.

HLWG also noted that various organization/agencies/committees have tried to define the boundaries of Western Ghats in case specific manner keeping in view specific objectives for the programmes under which the exercise was carried out .

Based upon the existing body of knowledge, data availability and constraints of time HLWG was of the opinion that it would be practically not feasible to undertake accurate and precise demarcation of Western Ghats. However the Working Group felt that to provide a proper perspective to the ESZ delimitation exercise in the Western Ghats, it would need to broadly indicate the Western Ghats region.

In the view of the above the Working Group decided to use the Planning Commission definition of Western Ghats with the addition of 7 talukas of Gujarat below Tapti river divide as an option to define the Western Ghats region. The 7 talukas of Gujarat below the Tapti River divide were added as it is known that Western Ghats start below the Tapti river. However, this broad agreement should be subject to the caveat that it is only an indicative assessment of the Western Ghat region and may not be used by any agency/Government for any development activities and/or regulatory prescriptions.

Item 4: Responses from various State Governments

At the outset the Group expressed its satisfaction at the delegation level meetings held with the State Government of Kerala, Karnataka, Maharashtra and Goa. The Working Group also took stock of the responses received from the State Governments of the Western Ghats region. It was noted that Government of Kerala and Maharashtra have provided a response to the questionnaire sent by the HLWG. It was decided by the Working Group that the Ministry would send reminder to the Government of Karnataka for expediting their response as also a reminder to Government of Kerala to provide additional inputs as decided in the NRSC meeting held on 4th and 5th February 2013. Similarly, A request may also be sent to Government of Goa to send their response in writing within one week. The Working Group also decided that the Chairman, HLWG would write to the Chief Ministers of Tamil Nadu and Gujarat for seeking their intervention so as to expedite the comments from their States.

Item 5: Field Visits and delegation level meetings with the State Government of Tamil Nadu and Gujarat

The Working group noted that meetings with the Government of Tamil Nadu and Gujarat are still to be undertaken and field visits to Idukki and Wayanad also need to be done. Working Group decided that visit to Idukki and Wayanad could be taken up after the meetings with the State Governments of Tamil Nadu and Gujarat.

Item 6: Responses from the Central Ministries

The Working Group noted that formal responses have yet to be received from the Ministry of Water Resources and Ministry of Mines. It was decided that the Chairman, HLWG would write to the Union Ministers for their kind intervention in expediting comments from their respective Ministries.

Item 7: Meeting with the Interstate council secretariat

It was felt by HLWG that as it was interacting with each State of the Western Ghats region separately and understanding their views/concerns as such there is no specific need for a separate interaction with the interstate council.

Item 8: Status of court cases

The Working Group was informed about the status of various court cases pending in Bombay High Court and National Green Tribunal.

Item 9: Implication of World Heritage Site status with particular reference to Western Ghats

Working Group decided that IG (WL) MoEF may be requested to provide a note on the general and specific commitments of India with reference to the World Heritage site status.

Item 10: Climate Change and Western Ghats

It was decided that Dr. S.K. Sharma, Advisor, (CC), MoEF may be requested to provide a note detailing the impact of climate change on Western Ghats region.

Item 11: Referred projects/issues to WGEEP – Athirappily hydropower project, Gundia Hydropower project, Mining in Goa, development projects and mining in Ratnagiri and Sindhurug Districts

The Working Group assessed the inputs received from the State Governments as also other stakeholders with respect to projects/issues referred to WGEEP. The Working Group felt that inputs/data provided by the State Governments and other stakeholders needs to be further analyzed.

Item 12: Deadline for submission of final report of HLWG

The members reviewed the progress of work and the future course of action to address the terms of reference given to the Group. The Working Group noted the following: (i) consultation with the State Governments of Tamil Nadu and Gujarat are yet to be done, (ii) all political parties of Kerala have sought time to provide their detailed inputs to HLWG, (iii) Chief Minister of Kerala has also requested that the Working Group visit Idukki and Wayanad districts, (iv) inputs still have to be received from Ministry of Water resources and Ministry of Mines. Keeping in view the reasons stated above, the Working Group resolved that to meaningfully finalize the report, the Ministry may be requested to extend of tenure of HLWG beyond 16th February 2013 upto 31st March 2013.

The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 11.2.2013

List of Members / Special invitees present:

1	Dr. K. Kasturirangan	In Chair
2	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests	Member

	Government of India	
3	Dr. Sunita Narain, Centre for Science & Environment	Member
4	Shri Jagdish Kiswan, ADG(WL), Ministry of Environment	Member
5	Prof. C.R. Babu, University of Delhi	Member
6	Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun	Member
7	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
8	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee

MINUTES OF THE SIXTH MEETING OF HIGH LEVEL WORKING GROUP (HLWG) TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY HELD ON 2nd AND 3rd MARCH 2013 IN NEW DELHI

2nd March 2013

List of participants is annexed.

At the outset, Dr. K. Kasturirangan, Chairman, High Level Working Group (HLWG) welcomed all Members of the Group and initiated the proceedings of the meeting as per the Agenda.

Item 1: Confirmation of the minutes of the 5th meeting of the HLWG

Minutes of the fifth meeting of HLWG were confirmed.

Item 2: Presentation on Geospatial analysis of Western Ghats carried out at NRSC, Hyderabad for identification of ecologically sensitive zones

Dr. CS Jha, Group Head, Forestry and Ecology Group, National Remote Sensing Centre, Hyderabad, gave a presentation on the geospatial analysis for identification of ecologically sensitive zones in Western Ghats.

The following decisions were taken by the HLWG after the presentation:

(i) Only one ecologically sensitive zone would be identified in the Western Ghats region,

(ii) the data sources used in the geospatial analysis would be recorded explicitly along with their year of generation, terminologies used in the geospatial analysis would be explicitly defined, and latest available dataset for talukas with NIC and village dataset available with Survey of India would be used for the geospatial analyses,

(iii) The Western Ghats region as identified by HLWG would include 175 talukas from the Western Ghats Development Programme of Planning Commission, 7 talukas of Gujarat below Tapti river and 6 talukas of Nilgiri district covered under Hill Area Development Programme

Item 3: Presentation by Dr. CD Thatte, Ex-Secretary, Ministry of Water Resources, Government of India

Dr. CD Thatte presented his appraisal of the Western Ghats Ecology Expert Panel report. He mentioned that water sector has been condemned in the report. Further, he added that the WGEEP report contains sweeping recommendations such as decommissioning of dams and no interbasin water transfer, without undertaking any proper analysis on these aspects. He also mentioned that WGEEP did not consult any experts from water sector. Dr. Thatte pointed out Western Ghats cannot be viewed in isolation in terms of water resources because east flowing rivers originating from the Ghats support the major part of peninsular India. He highlighted the importance of interbasin water transfer and hydel power as a source of clean energy. He also criticized the arbitrary recommendation of WGEEP with respect to the decommissioning of dams. Finally, Dr. Thatte said that to achieve sustainability with respect to water resources sector a rationale mix of top-down and bottom-up approaches would be required.

3rd March 2013

Item 5: Discussion on draft HLWG report

The Working Group discussed in detail the draft HLWG report. The Working Group also analyzed and scrutinized the geospatial analysis using GIS platform.

It was decided that (i) inputs from Advisor (Water), Planning Commission would be taken with respect to water sector, (ii) inputs would also be taken from Dr. Nalini Bhat, Advisor, MoEF. The Working Group also decided that in case of the proposed Athirappily and Gundia Hydroelectric Power projects an analytical note would be developed.

The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 2nd and 3rd March 2013

List of Members / Special invitees present:

1	Dr. K. Kasturirangan	In Chair
2	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India	Member
3	Dr. Sunita Narain, Centre for Science & Environment	Member
4	Shri Jagdish Kiswan, ADG(WL), Ministry of Environment	Member
5	Prof. C.R. Babu, University of Delhi	Member
6	Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun	Member
7.	Prof Kanchan Chopra Ex-Director, Institute of Economic Growth, Delhi	Member
8	Shri Darshan Shankar Chairman, Institute of Ayurveda and Integrative Medicine, Bangalore	Member
9	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
10	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee

MINUTES OF THE SEVENTH MEETING OF HIGH LEVEL WORKING GROUP (HLWG) TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY HELD ON 13th MARCH 2013 IN NEW DELHI

List of participants is annexed.

At the outset, Dr. K. Kasturirangan, Chairman, High Level Working Group (HLWG) welcomed all Members of the Group and initiated the proceedings of the meeting as per the Agenda.

Item 1: Confirmation of the minutes of the 6th meeting of the HLWG

Minutes of the sixth meeting of HLWG were confirmed.

Item 2: Discussion on draft HLWG report

The various proposed chapters of the draft report were tabled for discussion. A brief summary of the major discussions is given below.

Prof Babu and Dr. PS Roy gave a brief presentation on the contents of the chapters dealing with the Western Ghats boundary and demarcation ecologically sensitive areas. This was followed by detailed discussion on these chapters. The members also sought explanations on various aspects of the ESA demarcation exercise. It was suggested that the methodology adopted by HLWG for demarcation of Western Ghats and delineation of Ecologically Sensitive Areas would be subjected to peer-review by 2-3 experts. The chapter dealing Decision Support and Monitoring Centre for Western Ghats was also discussed. The issues relating to proposed Athirappily and Gundia Hydropower projects as also Moratorium in Ratnagiri and Sindhudurg districts and Mining in Goa were discussed in detail.

The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 13th March 2013

List of Members / Special invitees present:

1	Dr. K. Kasturirangan	In Chair
2	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India	Member
3	Dr. Sunita Narain, Centre for Science & Environment	Member
4	Prof. C.R. Babu, University of Delhi	Member
5	Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun	Member
6.	Prof Kanchan Chopra Ex-Director, Institute of Economic Growth, Delhi	Member
7	Shri Darshan Shankar Chairman, Institute of Ayurveda and Integrative Medicine, Bangalore	Member
8	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
9	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee

MINUTES OF THE EIGHTH MEETING OF HIGH LEVEL WORKING GROUP (HLWG) TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY HELD ON 19th MARCH 2013 IN NEW DELHI

List of participants is annexed.

At the outset, Dr. K. Kasturirangan, Chairman, High Level Working Group (HLWG) welcomed all Members of the Group and initiated the proceedings of the meeting as per the Agenda.

Item 1: Confirmation of the minutes of the 7th meeting of the HLWG

Minutes of the seventh meeting of HLWG were confirmed.

Item 2: Discussion on draft HLWG report

The various proposed chapters of the draft report were tabled for discussion. A brief summary of the major discussions is given below.

The Working group took up the proposed chapter on paradigm of sustainable and inclusive growth for discussion. The Working Group deliberated on the salient contents of the chapter with focus on the possible sectoral development restrictions for the Ecologically Sensitive Areas demarcated by the HLWG.

The proposed chapter dealing with the evaluation of comments of State Governments/Central Ministries/and stakeholders was discussed. The Committee was informed that a large proportion of stakeholders have sent the same comments, with a common text repeated in them. It was also informed that the comments sent by the stakeholders have been considered and evaluated.

The Working Group discussed the proposed chapter on climate change. The Committee felt that the aspects related to the predictability of current models, grid size, adaptation strategies may be addressed in the chapter. The section on declaration of World Heritage Sites in Western Ghats was also discussed.

The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 19th March 2013

List of Members / Special invitees present:

1	Dr. K. Kasturirangan	In Chair
2	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India	Member
3	Dr. Sunita Narain, Centre for Science & Environment	Member
4	Shri Jagdish Kiswan, ADG(WL), Ministry of Environment	Member
5	Prof. C.R. Babu, University of Delhi	Member
6	Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun	Member
7.	Prof Kanchan Chopra Ex-Director, Institute of Economic Growth, Delhi	Member
8	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
9	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee

MINUTES OF THE NINTH MEETING OF HIGH LEVEL WORKING GROUP (HLWG) TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY HELD ON 23rd MARCH 2013 IN NEW DELHI

List of participants is annexed.

At the outset, Dr. K. Kasturirangan, Chairman, High Level Working Group (HLWG) welcomed all Members of the Group and initiated the proceedings of the meeting as per the Agenda.

Item 1: Confirmation of the minutes of the 8th meeting of the HLWG

Minutes of the eighth meeting of HLWG were confirmed.

Item 2: Discussion on draft HLWG report

The various proposed chapters of the draft report were tabled for discussion. A brief summary of the major discussions is given below.

The chapter on demarcation of ecologically sensitive areas was taken up for discussion. The Committee felt that it is important to have an assessment of the total human population living in the proposed Ecologically Sensitive Areas (ESA) and non-ESA areas in Western Ghats region. Accordingly, it was decided that a table providing data on (i) area, (ii) total population, (iii) number of villages and (iv) population density in ESA and non-ESA areas of Western Ghats region would be included in the report. The Committee also went through the maps and tables which would be included in the report.

The issue of Wildlife Corridors was discussed in detail. The Group felt that the wildlife corridors present in the proposed ESA may be depicted. Further, the State Governments may involve local people in firming up their proposals relating to wildlife corridors.

The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 23rd March 2013

List of Members / Special invitees present:

1	Dr. K. Kasturirangan	In Chair
2	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India	Member
3	Dr. Sunita Narain, Centre for Science & Environment	Member
4	Shri Jagdish Kiswan, ADG(WL), Ministry of Environment	Member
5	Prof. C.R. Babu, University of Delhi	Member
6	Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun	Member
7.	Prof Kanchan Chopra Ex-Director, Institute of Economic Growth, Delhi	Member
8	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
9	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee

MINUTES OF THE TENTH MEETING OF HIGH LEVEL WORKING GROUP (HLWG) TO STUDY THE PRESERVATION OF THE ECOLOGY, ENVIRONMENTAL INTEGRITY AND HOLISTIC DEVELOPMENT OF THE WESTERN GHATS IN VIEW OF THEIR RICH AND UNIQUE BIODIVERSITY HELD ON 5th APRIL 2013 IN NEW DELHI

List of participants is annexed.

At the outset, Dr. K. Kasturirangan, Chairman, High Level Working Group (HLWG) welcomed all Members of the Group and initiated the proceedings of the meeting as per the Agenda.

Item 1: Confirmation of the minutes of the 9th meeting of the HLWG

Minutes of the ninth meeting of HLWG were confirmed.

Item 2: Final Discussion on draft final HLWG report

The various proposed chapters of the draft final report were tabled for discussion. The chapter on Summary of Recommendations and Action Plan was discussed point-by-point. The introductory chapter was also discussed. The members also went through the other chapters of the report.

After detailed deliberations on the contents of the draft final report, the Working Group members adopted the draft final report of High Level Working Group and authorized the Chairman to submit the final report to the Ministry.

The meeting ended with a vote of thanks to and from the Chair.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 5th April 2013

List of Members / Special invitees present:

1	Dr. K. Kasturirangan	In Chair
2	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India	Member
3	Dr. Sunita Narain, Centre for Science & Environment	Member
4	Shri Jagdish Kiswan, ADG(WL), Ministry of Environment	Member
5	Prof. C.R. Babu, University of Delhi	Member
6	Prof. P.S.Roy, Ex-Director, Indian Institute of Remote Sensing, Dehradun	Member
8	Shri Darshan Shankar Chairman, Institute of Ayurveda and Integrative Medicine, Bangalore	Member
9	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
10	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee

Minutes of the discussion held on 20/11/2012 between High Level Working Group with Hon'ble Chief Minister, Hon'ble Ministers and Secretaries of the State Government.

Sr. No.	Recommendations made by the WGEEP	Discussions Held
1	2	3
1	WGEEP has recommended for constituting a Separate Western Ghat Ecology Authority (WGEA) having 24 members from different domains, as a statutory authority appointed by the MOEF enjoying powers u/s 3 of the Environment Protection Act 1986.	<p>The State Government made submission that the proposed mechanism will operate parallel to existing environmental agencies and can have divergent approaches. Such a heavy bureaucratic setup will result in bottlenecks in clearance of developmental projects, which are otherwise permissible under existing laws. Existing legal authorities viz. Maharashtra Regional Town Planning Act, Maharashtra Municipal Corporation Act, Maharashtra Land Revenue Code and CRZ guidelines are sufficient to take care of environmental concerns. Separate authority is therefore not desired.</p> <p>The HLWG appreciated the concerns raised by the State Government and assured that due consideration shall be given while finalising its report.</p>
2	<p>WGEEP has defined the western ghat from the environmental angle. Entire Taluka has been proposed to be included.</p> <p>Entire Western Ghat Tract has been brought under the ambit of Ecologically Sensitive Area</p> <p>ESZ-1 Regions of highest sensitivity</p> <p>ESZ-2 Regions of high sensitivity</p> <p>ESZ-3 Regions of moderate sensitivity.</p>	<p>State Government submitted that this would mean that even the Taluka towns which may not fulfill the criteria of steep slope or forest cover will fall under the ESZ-1. Instead, only those pockets which fulfill the criteria of ESZ-1 should be classified so. Hence recommendation not acceptable. While delineating the ESZ-1, 2, and 3 areas, grids of 9kmx9km has been taken by the WGEEP, which becomes too big area for sampling and results in including areas which do not qualify to be kept in ESZ areas. Since the recommendations envisage the developmental restrictions, therefore it will be more appropriate to keep village as the basic unit for delineating the ESZ areas.</p> <p>Total 32 talukas in Maharashtra under the ESZ-1. Karnataka and Kerala have 26 and 15. Maharashtra will therefore be affected most adversely. In general, the recommendations for ESZ-1 should be acceptable for forest areas, protected areas and eco-sensitive zone around the protected areas.</p> <p>The HLWG appreciated the submissions and requested that the State Government to provide the map of Western Ghat clearly showing the limits of reserve/ protected forests, protected areas and identified forest areas.</p>
3	Wind Mills (Complete prohibition in ESZ-1)	<p>Complete prohibition in ESZ-1 area will be counterproductive because sites of windmills are highly site specific. Complete prohibition will result in condemning the people to use fuel wood for years to come.</p> <p>Issue raised by the State Government was noted by the HLWG.</p>
4	No new thermal power station	<p>State of Maharashtra is having 3500 to 4000 MW power shortage presently. Mahagenco Company has proposed 3 X 660MW coal based thermal power project at Dhopave, Dist. Ratnagiri based on super critical technology. Super critical technology boilers are having higher efficiency than convention boilers and less pollution to atmosphere. Mahagenco Company is taking all required steps to fulfill all environmental & statutory provisions and clearances from MOEF.</p>

Due consideration shall be given to environmental aspects while erecting Dhopave Project. Only 1980 MW Thermal Power project is proposed by Mahgenco /Mahavitaran company as per UMPP guidelines from Central Government in Western Ghat Area and it is need of hour. At present at Western Ghat area other private thermal power project are not under consideration.

The HLWG appreciated the concern but at the same time it pointed out that the State Government should review its policy of having maximum number of thermal power stations in a given locality, when the demand is satisfied by lesser number of plants with optimal capacity.

5 Complete Ban on Mining

Recommendations not acceptable to the State Government. In case of site specific mineral e.g. bauxite and iron. Mining of such minerals may be considered outside forest and protected areas with strict mining mitigation measures. Besides, the lateritic stone mining in Sindhudurg and Ratnagiri districts are done at a micro level by local people for construction of small houses on bonafide basis. Hence complete ban on mining will bring unrest among them.

The HLWG suggested the State Government that it should move a Petition before Hon'ble Supreme Court to review its decision of February 2012, regarding the clearance of micro level mining by the authorities at State Level.

6 Transport Projects
Prohibition on new railway lines, new highways , major roads

The State Government submitted that the transport sector is closely connected with port sector. Recommendations are not therefore conducive for port sector. Moreover, the Railway projects reaching ports which are essential either due to connectivity to important economic centers or due to geographic factors may be approved with environment impact mitigation measures. Same should be applicable for roads too.

The issue raised by the State Government was appreciated by the HLWG.

7 Irrigation and Hydropower
Inter-basin diversion of rivers not allowed

The State Government submitted that only 2-3% agricultural land of Konkan is dependent on irrigation through dams, while rest is rain fed. Thus, the dams in Konkan area are for non-irrigation purposes. The State will be put to huge irreparable loss particularly in respect of substantial power generation to the tune of 3900 Million Units through Koyna Hydroelectric Project.

The HLWG noted the point.

Western Ghat Region receives heavy rains during monsoon. It is having surplus water resources. Hence in the interest of the human development inter basin diversions/transfers of river water should be allowed within the existing framework of laws.

8 No new licenses for quarry and sand mining.

The State Government submitted that the financial viability of water resources projects will be hampered if the sand is required to be brought from far away sites because of the ban on new quarry and sand mining. It will increase the construction cost of the Dams and Canals. Thus it needs to be rejected in entirety.

The HLWG noted the point.

9 (ESZ-1) New small hydropower projects (below 10 MW)

The State Government submitted that the recommendation is objectionable. Hydro power has advantages over other

10 ESZ-2
No new dams above 15 m or no new thermal power plants admissible

alternatives of power generation namely thermal, nuclear, diesel generators etc. hydro power is renewable, non-polluting and environmentally friendly source of energy. Attractive and techno-economically feasible sites are available in the Western Ghat region. Large hydropower projects having optimal sizes and which are techno-economically viable should be allowed within existing framework of law. The Hydropower projects being comparatively low in cost than other non-conventional energy projects, they cannot be restricted.

Restrictions should not be without logic. Large hydropower projects having optimal sizes and which are techno-economically viable should be allowed within existing framework of law. The State Government strongly opposes the restrictions.

11 Dams and Thermal Power Projects which have crossed their viable life span to be de-commissioned in phased manner

The State Government submitted that the recommendation is not based on technical reasoning and deserves to be rejected in its entirety because the lifespan of any irrigation project is considered to be 100 years and the safety aspect of the structures is taken care of the department, the recommendation is not acceptable.

Mahagenco company has already taken decision as per MERC guidelines to close down Thermal Power Station which have exhausted their viable life span as below.

- 1) Koradi 4 X 120 MW = 480 MW
- 2) Nashik 2X 140 MW = 280 MW
- 3) Paras 1 X 79 MW = 79 MW
- 4) Uran State (I) 4X 60 MW = 240 MW G. T. Units

All above plants are already closed down by Mahagenco Company.

Mahagenco has implementing schedule to replace above closed down projects with super critical technology plants having less environmental pollution as below

- ❖ 3 X 660 MW Expansion Project at Koradi
- ❖ 1 X 660 MW replacement Project at Nashik
- ❖ 1 X 250 MW replacement Project at Paras
- ❖ 1200 MW gas based project at Uran (Its work kept pending till 2015-16 as per directive from Minister of Power as gas is not available)

12 Restriction on New Industry (Red and Orange)

It was submitted that 37 MIDC areas are falling in the ESZs. If the complete ban on red and orange industry is imposed, the whole of Lote Parashuram Industrial Area in Chiplun Taluka of Ratnagiri District shall be closed. Thus it was suggested that stringent pollution control norms should be imposed and monitored scrupulously instead of complete ban.

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Environment Department

Minutes of the discussion held on 20/11/2012 between High Level Working Group with Hon'ble Chief Minister, Hon'ble Ministers and Secretaries of the State Government

Sr. No.	Title	Recommendations made by the WGEEP	Comments of the Environment Department to be added
1	2	3	4
1	Change of Land Use	1) E.S.Z. does not permit change of land use from forest to non-forest use or agricultural to non-agricultural, except agriculture to forest (or tree crops) except when extension of existing village settlement areas to accommodate increase in population of local residents. 2) Change in land use not permitted from forest to non-forest uses or agricultural to non-agricultural, except agriculture to forest (or tree crops) except when extension of existing village settlement areas to accommodate increase in population of local residents.	The State Government put on record its disagreement with this provision since that would affect land use change for all infrastructure projects to be taken up in future.
2	WGEA	Setting up of separate Western Ghat Ecology Authority (WGEA).	Apart from this, existing bodies like State biodiversity board can be empowered as nodal agency for conservation and protection of Eco-sensitive zones.

3	New Hill Stations not to be allowed.	<p>For all settlements and built areas /to be developed areas, certain types of areas would be no-go areas, including water courses, water bodies, special habitats, geological formations, biodiversity rich areas, and sacred groves</p> <p>Special Economic Zones should not be permitted New hill stations should not be allowed</p> <p>Public lands should not be converted to private lands.</p>	<p>The State Government has submitted that hill stations in Western Ghats should not be banned. In fact new hill stations should be encouraged with stringent norms. Conversion of public land into private land should also be allowed for Government/ Infrastructural projects leading to sustainable developments of the area.</p>
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Observations:

Sr. No.	Title		Comments of the Environment Department
1	Methodology of Study	Grid size of 9 km X 9 km. Scientific basis	<p>Grid size of 9 km X 9km is too large to identify the administrative boundaries.</p> <p>No scientific basis and linkages provided for regulating activities in ESZ areas.</p> <p>Scientific studies or carrying capacity or latest technologies in the field have not been considered while deciding the activities in ESZ areas.</p> <p>The State Government observed that the</p>

			Western Ghat Panel has not given adequate attention to the most important aspect of Western Ghats-human habitation.
2	Ratnagiri & Sindhudurg	Moratorium enforce by the Ministry of Environment & Forests	Ratnagiri and Sindhudurg- Only 10 Talikas are in Western Ghats areas from this districts. However, moratorium have been imposed on environmental clearance for the entire district which is not proper and needs to be reexamined.

Before concluding the discussion, the State Government and the HLWG were in total agreement that the Development and conservation measures should be evenly balanced and neither of the two can be sacrificed at the cost of other. It was emphasized by the HLWG that in order to motivate and encourage the local people for ecology conservation, innovative incentives like Tree Credits should be implemented by the State Government.

Thereafter meeting ended with a vote of thanks to the Hon'ble Chair and the members of the High Level Working Group.

List of Dignitaries present in the discussion

1. Shri Sunil Tatkare, Hon'ble Minister, Water Resources, Maharashtra State
2. Shri Sanjay Devtale Hon'ble Minister, Environment, Maharashtra State
3. Shri Rajesh Tope Hon'ble Minister, Energy, Maharashtra State
4. Shri Bhaskar Jadhav, Hon'ble Minister of State, Forests, Maharashtra State
5. Dr. K. Kasturirangan, Chairman High Level Working Group
6. Shri C.R. Babu, Member, High Level Working Group
7. Shri J.M. Mauskar, Member, High Level Working Group
8. Shri Jagdish Kishwan, Member, High Level Working Group
9. Ms. Sunita Narain, Member, High Level Working Group
10. Prof. Kanchan Chopra, Member, High Level Working Group
11. Shri Darshan Shankar, Member, High Level Working Group
12. Dr. P.S. Roy, Member, High Level Working Group
13. Shri Ajay Tyagi, Member-Convenor, High Level Working Group
14. Shri Jayant Kumar Banthia, Chief Secretary, Maharashtra State
15. Shri Ajit Kumar Jain, Principal Secretary to CM
16. Shri Praveen Pardeshi, Principal Secretary (Forests), Maharashtra State
17. Shri Shailesh Sharma, Principal Secretary (Ports), Maharashtra State
18. Shri Arvind Singh, Principal Secretary (Energy), Maharashtra State
19. Shri Manu Kumar Shrivastava, Principal Secretary (Industries), Maharashtra State
20. Shri V. Giriraj, Principal Secretary (CADA), Maharashtra State
21. Shri E.B. Patil, Principal Secretary (Water Resources), Maharashtra State
22. Shri Shyamal Kumar Mukherji, Secretary (Public Works Dept.), Maharashtra State
23. Shri Nitin Karir, Secretary to CM, Maharashtra State
24. Shri Ashish Singh, Secretary to CM, Maharashtra State
25. Smt. Walsa Nair Singh, Secretary, (Environment), Maharashtra State.

CONCEPT OF WESTERN GHAT

1. WGEEP has defined the western ghat from the environmental angle. Entire Taluka has been proposed to be included.
 1. This would mean that even the Taluka towns which may not fulfill the criteria of steep slope or forest cover will fall under the ESZ-1. Instead, only those pockets which fulfill the criteria of ESZ-1 should be classified so. Hence recommendation not acceptable.
2. Entire Western Ghat Tract has been brought under the ambit of Ecologically Sensitive Area
 - ESZ-1 Regions of highest sensitivity
 - ESZ-2 Regions of high sensitivity
 - ESZ-3 Regions of moderate sensitivity.
2. The methodology defined is complex and need to be reviewed.
 - ESZ-1 and ESZ-2 definition needs more careful review as it covers comparatively larger areas.

ECO-SENSITIVE ZONE (ESZ-1)

Strict restrictions have been proposed. Restrictions are well intended with the objective of fragile eco-system. However some of them are based on one or two field examples and not based on thorough social cost-benefit exercise.

In general, the recommendations for ESZ-1 should be acceptable for forest areas, protected areas and eco-sensitive zone around the protected areas.

Wind Mills (Complete prohibition in ESZ-1)
Complete prohibition in ESZ-1 area will be counterproductive because sites of windmills are highly site specific. Complete prohibition will result in condemning the people to use fuel wood for years to come.

CONSTITUTION OF WESTERN GHAT ECOLOGY AUTHORITY

1 WGEA should be a statutory authority appointed by the MOEF enjoying powers u/s 3 of the Environment Protection Act 1986.

1 The proposed mechanism will operate parallel to existing environmental agencies and can have divergent approaches.

Such a heavy bureaucratic setup will result in bottlenecks in clearance of developmental projects, which are otherwise permissible under existing laws.

2 WGEA will comprise of 24 members from different domains and will be chaired by Retired judge of Supreme Court
or

An eminent ecologist from the Western Ghat Region

2 Existing legal authorities viz. Maharashtra Regional Town Planning Act, Maharashtra Municipal Corporation Act, Maharashtra Land Revenue Code and CRZ guidelines are sufficient to take care of environmental concerns.
Separate authority therefore not desired.

ECO-SENSITIVE ZONE (ESZ-1)

Energy Sector	Total 32 talukas in Maharashtra under the ESZ-1. Karnataka and Kerala have 26 and 15. Maharashtra will therefore be affected most adversely.
No new thermal power station	Drastic recommendation for a State having deficit of about 4000 MW.
Complete Ban on Mining	Not acceptable in case of site specific mineral e.g. bauxite and iron. Mining of such minerals may be considered outside forest and protected areas with strict mining mitigation measures. Mining of stones/sand which are non-site specific may be banned.

ESZ-1

Transport Projects

Prohibition on new railway lines, new highways , major roads

Transport sector is closely connected with power sector. Recommendations are not therefore conducive for power sector.

The Railway projects reaching ports which are essential either due to connectivity to important economic centers or due to geographic factors may be approved with environment impact mitigation measures. Same should be applicable for roads too.

IRRIGATION AND HYDROPOWER

The State will be put to huge irreparable loss particularly in respect of substantial power generation to the tune of 3900 Million Units through Koyna Hydroelectric Project.

The financial viability of water resources projects will be hampered. Needs to be rejected in entirety.

Recommendation objectionable. Large hydropower projects having optimal sizes and which are techno-economically viable should be allowed within existing framework of law.

Restrictions should not be without logic. Large hydropower projects having optimal sizes and which are techno-economically viable should be allowed within existing framework of law.

1. Inter-basin diversion of rivers not allowed

2. No new licenses for quarry and sand mining.

3 (ESZ-1) New small hydropower projects (below 10 MW)

4 ESZ-2
No new dams above 15 m or no new thermal power plants admissible
Hydroelectric projects 10-15MW permissible

HYDROPOWER

Dams and Thermal Power Projects which have crossed their viable life span to be de-commissioned in phased manner

Recommendation is not based on technical reasoning and deserves to be rejected in its entirety.

Hydroelectric Power Project.

May be considered in non-forest areas and outside protected areas if they fulfill the criteria in the existing legal framework. Entire Hydropower potential available through projects proposed in this region should be harnessed fully to cope with ever-growing demand of power.

Summary Record of discussions held between the Government of Karnataka and the High Level Working Group on 11th January 2013 at Bangalore

At the outset, Principal Secretary (Environment) welcomed Chairman and members of the High Level Working Group. Principal Secretary (Environment) also welcomed the Chief Secretary, Chairman and members of Western Ghats Task Force and Senior Officers of the Government of Karnataka.

Shri R. Sridhar, Principal Secretary (Environment) and Shri Luhtra, Additional PCCF (HQ) gave a presentation (Annexure I) on the response of Government of Karnataka to the questionnaire sent by HLWG.

The following were major comments of the Government of Karnataka

- State Government had serious objections to the constitution of Western Ghats Ecology Authority (WGEA). The proposed WGEA as it interferes with the state's sphere of authority and would lead to duplication of existing institutional structures.
- Western Ghats boundary delimitation and demarcation of ecologically sensitive areas in Western Ghats done by WGEEP needs to be improved.
- Declaring the entire Western Ghats region as Eco-sensitive as per WGEEP is not correct, the already developed areas in Western Ghats need separate treatment.
- The WGEEP has used taluka as a unit of demarcation which is a big administrative unit with large area. The better unit which could be used for demarcation is at the village level.
- Local community consultation needs to be done for demarcating eco-sensitive zones.
- The demarcation of ecologically sensitive zones in Western Ghats should be done with a holistic perspective taking into account larger interests of the society.
- It was pointed out that there needs to be certainty in definition boundaries keeping in view regulation of activities are proposed in the identified region

- It was also pointed out that the process for consultation with the local communities needs to be developed after careful thought.
- The complete ban on agricultural chemicals such as fertilizers, weedicides and pesticides in one go, may not be possible as the availability of organic manure may not be adequate for the purpose of this change.
- The Government of Karnataka does not agree with the recommendation that Joint Forest Management (JFM) should be converted Community Forest Management under Forest Rights Act as JFM has been working very successfully in Karnataka.
- The need and status of the proposed Gundia Hydropower project was explained

The details of the sectoral level comments are covered in the presentation given in the section of State Government comments.

There was also a discussion between the members of the High Level Working Group and Shri Anant Hegde, Chairman, Western Ghats Task Force and Dr. TV Ramachandra, Member, Western Ghats Task Force on various issues relating to Western Ghats Ecology as also the proposed Gundya Hydropower project.

After the presentation Dr. K. Kasturirangan, Member (Science), Planning Commission and Chairman, High level Working Group (HLWG) opined that the presentation made by the Government of Karnataka was focused and has been able to succinctly provide the comments of Government of Karnataka. He said that the HLWG has gained further insights into specific issues brought out by the State Government as also the reservations of the State Government on the WGEEP report. Dr Kasturirangan further mentioned that the HLWG would take cognizance of the issues raised by the Government of Karnataka while examining the WGEEP report.

The meeting ended with a vote of thanks to and from the Chair.



JAMES VARGHESE
PRINCIPAL SECRETARY TO GOVERNMENT



21.03.2013

D.O. Letter No.3527/A2/11/Envt.

Dear *Smt Chandrasekhar*,

Kindly recall the discussions the High Level Working Group on WGEEP report had during its visit to Kerala on 19.01.2013. Following minutes are enclosed herewith for kind information and favourable consideration.

1. Discussion with Hon'ble Chief Minister and other Ministers
2. Discussion with Government Secretaries and Heads of Department
3. Discussion with the All Party Delegation

With regards,

Yours sincerely

Smt.Indrani Chandrasekhar,
Advisor,
Planning Commission,
Yojana Bhavan, New Delhi-110 001

MINUTES OF THE DISCUSSION HELD BY THE HON'BLE CHIEF MINISTER, KERALA
WITH THE HIGH LEVEL WORKING GROUP REVIEWING THE REPORT OF THE
WESTERN GHATS ECOLOGY EXPERTS PANEL (WGEEP)

Date: 19-1-2013

Time: 8.30 A.M

Venue: Hotel Taj Vivanta, Thiruvananthapuram

List of participants enclosed.

Chief Minister welcomed the members of the High Level Working Group appointed by the Ministry of Environment (MoEF), Government of India. Chief Minister briefed the Working Group of the action taken by the State Government on the report of the WGEEP and recited the history of settlements in Idukki and Wayanad districts and the anxiety created in the minds of the settlers in the High Ranges due to the recommendations. The resolution unanimously passed by the Kerala Legislative Assembly on the report of the WGEEP was read over. The decisions in the all party meeting called by Chief Minister on 18-1-2012 in the subject were also explained, and said that the parties have agreed to uphold the spirit of the resolution.

Chief Minister maintained that there is a great apprehension for the Government and among the people at large that implementation of WGEEP in the present form will be a road block to the various activities such as agriculture, tourism, infrastructure, energy and thereby on the economic development of a small geographic area like Kerala. As Kerala depends mostly on hydroelectric power, the Athirappally Hydel Project need be implemented with least possible environmental impacts, particularly when the Gundiya Project is accepted eventually. It is even more evident with the comment by Sri. Jaïram Ramesh that Kerala is ahead of Forest conservation compared to other states and needs special consideration. The WGEEP recommendations may be modified to be farmer friendly as has been envisaged in the M. S. Swaminathan report on Idukki package. The WGEEP

report recommends against monoculture in the Western Ghats. The foreign exchange revenue for the state and country is enormous from the crops of the Western Ghats of Kerala. However, the Government are committed to stop the monoculture of exotic invasive plants like Accasia and Eucalyptus and to reduce and eventually replace the use of insecticide, weedicides and pesticides, turn to organic farming and to encourage ecotourism. The approach of the Government will be to "protect biodiversity for development and not biodiversity versus development".

Chief Minister requested the Working Group to visit Idukki and Wayanad to understand the ground level realities. Chief Minister has expressed Government's resolve to protect nature and the Western Ghats and requested the Working Group to take a practical and comprehensive approach to the whole issue.

Sri. K. M. Mani, Hon'ble Minister for Finance & Law

Sri. K. M. Mani, Hon'ble Minister for Finance & Law exposed the mandates of the WGEEP to identify the ecologically sensitive zones in consultation with the states and with comprehensive involvement of the people. If the recommendations are implemented as such, normal agricultural and human activities would become impossible. Though there are a few good suggestions majority are adverse. Those have no legal standing. The report is on the assumption that the entire Idukki / Wayanad districts are forested areas. The areas are fully agricultural areas, with cash crops. If it is stopped, we will lose foreign exchange. Such recommendations are against the interest of Kerala and need to be reviewed. The Working Group may take a balanced approach.

Conservation of Agriculture is also conservation of Biodiversity. Consequently destruction of Agriculture is not conducive to environmental

protection. Of the 22000Km² of forests, half is reserved forests. If the recommendations are accepted entire plantation areas will be affected and agricultural operations would be disrupted.

Sri. K. B. Ganeshkumar, Hon'ble Minister for Forests & Sports

Hon'ble Minister for Forests & Sports referred to the remarks in the WGEEP regarding the good performance of the State Forest Department. But the WGEEP does not seem to have considered the performance of the State in the legislative sector for protection of the Western Ghats such as the Kerala Forest Act (1961) and Amendments, the Kerala Private Forests (Vesting and Assignment) Act, 1971, the Kerala Preservation of Trees and Kerala Forest (Vesting and Management of Ecologically Fragile Lands) Act, 2003.

The three tier system for management of the Ecologically Sensitive Areas as prepared by the WGEEP cannot manage the Forests and in the present circumstances it would be a duplication of regulatory and administrative mechanism for forests. Hon'ble Minister opined that some proposals are not practical. He described the protection and eco-conservative measures adopted in forest areas such as ban and removal of plastics, and special protection measures adopted for prevention of man-animal conflict. Construction of check dams in rivers in forest has been found to be very effective in confining wild animals to the forests. Invasive Alien Species in forest areas have been removed. The concept of urban forests is also gaining ground and private persons are coming up for preserving a portion of their land as forests. The Minister was of the view that the existing laws would suffice for protection of forests in the state. Government of India has not taken the final decision on the WGEEP report. The report though not having the legal status for implementation, the Green Tribunal on a petition has

issued interim orders for adhering to the recommendations in the WGEEEP report.

Sri. K. Kasthurirangan, Chairman (HLWG).

The Chairman gave a brief account of the interaction of the Working Group at Maharashtra and Karnataka. He commented the interest being evinced on the WGEEEP report in the State generally and by the State Government in particular. The Working Group has visited Athirappally on 18-1-2013 and the dialogues will continue. As far as the WGEEEP report is concerned, it is a technically authentic one. The Working Group is aware of the sensitivities of Kerala, and the cultural aspects involved will also have to be looked into. The Working Group has taken note of the common cause as evidenced by the resolution passed by Kerala Legislative Assembly and the anxieties expressed in the all party meeting called by the Chief Minister.

Chairman reflected that the WGEEEP report is the result of an outstanding work that has considered all parameters. However the issues surrounding the human activities in the areas also need to be considered. The Working Group has received a number of representations from NGOs and stakeholders. Kerala leads in terms of response and that the Working Group likes to share the sensitivities of the state in these matters. As for zonation, it is proposed to improve the 9 x 9km zonation as in the WGEEEP report. Now 30mx30m resolution measurement is possible. Also ground situation will be looked in to, with features special to each state, in the light of the inputs supplied by State Governments. The recommendations and remarks thereon will be examined sector wise. The State Government have provided significant inputs. The working Group will try to make recommendations acceptable to all states. He assured that the team will try to visit Idukki and Wayanad as suggested by the Chief Minister.

The expert members of the Working Group elicited information and details regarding the environmental conservation activities initiated by State Government. They opined that the BMCs should be further empowered for biodiversity conservation. There was general opinion that if not the proposed WGEA, there must be some institutional arrangement, in conformity with constitutional provision to look after the biodiversity of the Western Ghats. The proposed National Innovative Council for Biodiversity Resources propounded by Dr. Sam Pitroda was also referred to as a bold conservation and livelihood oriented initiative. The need to protect agriculture as a means of conservation of native biodiversity was also stressed. Inclusive forest management also requires to be attended to. There must be a system of incentivisation of good development paradigms and compensation for protection. The economic and agricultural sectors need to become environmental friendly. Paddy lands being rechargers of ground water, paddy cultivation shall be incentivised. As regards Athirappally the expert members observed that the environmental as well as Science & Technological aspects will be looked in to.

Concluding the discussion Chief Minister reiterated Government's concerns over the zonation, which is the major problem with the report of the WGEEP. Chief Minister expressed satisfaction that the HLWG has agreed to address the problem seriously. Declaring the SEZs first and excluding there from later as proposed, would not be a feasible and acceptable approach. He thanked the Chairman and members of the HLWG and senior State Government officials participated.

The meeting ended at 9.30 a.m.

**THE DISCUSSION BY THE HIGH LEVEL WORKING GROUP WITH
SECRETARIES TO GOVERNMENT OF KERALA ON THE
RECOMMENDATIONS OF THE WESTERN GHATS ECOLOGY
EXPERTS PANEL (WGEEP)**

List of participants

Chairman & Members of the High Level Working Group on WGEEP

Shri.Oommen Chandy, Hon'ble Chief Minister

Shri.K.M.Mani, Hon'ble Minister for Finance & Law

Shri.K.B.Ganesh Kumar, Hon'ble Minister for Forest & Sports

MINUTES OF THE DISCUSSION BY THE HIGH LEVEL WORKING GROUP WITH SECRETARIES TO GOVERNMENT OF KERALA ON THE RECOMMENDATIONS OF THE WESTERN GHATS ECOLOGY EXPERTS PANEL (WGEEP)

Date: 19.01.2013.

Time: 10.30 a.m.

Venue: Hotel Taj Viventa, Vazhuthacaud, Thiruvananthapuram.

List of participants enclosed.

Sri. James Varghese, Principal Secretary (Environment) welcomed the High Level Working Group under the Chairmanship of Sri. K. Kasthurirangan, Member, Planning Commission and the participants. He referred to the consultations at Athirappally on 18.01.2013 and the meeting with Chief Minister and the other Ministers earlier on the day.

Environment Department:

Principal Secretary, Environment flagged the hasty manner in which the WGEEP conducted and concluded its works. Criteria adopted for demarcation of SEZs were not thrashed out in due consultation with stake holders. The decision of the HLWG to have a fresh look at the SEZ under the proposed 30m x 30m spread was welcomed. Areas not required being included in ESZ for the purpose of the Western Ghats now proposed for regulation as per WGEEP report have to be released especially in the light of the interim order of the Green Tribunal to adhere to the WGEEP recommendations. Even as there is no difference of opinion that the Western Ghats as a whole need be protected, the interests of those migrated to the regions prompted by Government at that time also needs to be addressed. Also financial implication of the recommendations to the farmers, and the state as a whole merits special consideration of the HLWG. Adequate compensation corresponding to the financial loss or economic fall out of such recommendations shall be provided to

Individuals for loss being incurred and to the State for the arrangements made.

Science & Technology Department

State Government has a working Science & Technology policy. How the Science & Technology inputs are to be used for protection of environment is to be looked into. The entire 'green aspects' to be looked into as recommended in to WGEEP report and specific points for Science & Technology aspects in the WGEEP report shall be given due consideration. There shall be awareness creation on eco-system services. Kerala is a model for biodiversity conservation.

Water Resources Development

Principal Secretary drew the attention of the Working Group to the memorandum submitted by Government. He specifically dwelt on the recommendation on decommissioning of dams. All the dams in the State are in ESZs. The topography of the State which is very steep and within 40-100 kms from the Western Ghats, does not permit storage of water at places other than at Western Ghats areas. If the recommendations are accepted the State which gets good monsoons would be water deficient and that will be a disaster affecting irrigation and drinking water requirements. No new dams could be put up. State's projects under Kaveri Tribunal awards cannot also be taken up. The recommendations shall not hamper the new projects envisaged. The State shall not be punished for being a late comer in the scene of Irrigation projects. Desiltation of reservoirs which would only increase its capacity shall be allowed.

Members of the Working Group enquired about the status of river sand mining regulations and enforcement whether up stream projects would not affect availability down streams for agriculture, ecosystem services of forests and paddy lands, for water security etc. Principal Secretary explained the

problems arising out of shortage of construction grade river sand and the legal and executive measures for regulation of river sand mining. He also stressed the need for inter basin transfer of water within the State. He also mentioned the utility of the proposed Athirappally project of KSEB for Irrigation as well use of the tail race water for the proposed Thumboormoozhi Project. Impounding of water upstream would only facilitate agricultural activities, power generation and drinking water requirements. There is pretty long summer season in the State, for which strategies have to be adopted and implemented in Western Ghats areas. To the queries of the Working Group on water quality at Kuttanad areas, the present situation of rice farming, shortage of labour, minimum support price, major schemes under Kuttanad Package, problems due to Thanneermukkom bund etc was explained.

Smt. Indrani Chandrasekharan mentioned the need for restoration of Vembanad Lake and the status of implementation of the Wetland Conservation Rules.

Principal Secretary, Water Resources Department explained the ongoing activities under 'Kuttanad Package' as per Dr. M. S. Swaminathan's report. Pollution issues can be addressed linked to the operation of the Thanneermukkom Bund. Cofferdam is proposed to be removed facilitating entry of saline water and flow of pollutants to the sea. Also an action plan is being readied for 6 rivers debauching in to the lake. He also informed that there is no reclamation of the lake since 1960, but pesticide issue is to be addressed.

Power Department

Secretary to Government, Power Department and Chairman KSEB explained the three major concerns of the State's power generation sector due to the WGEEP report.

20 out of 32 dams of KSEB will be adversely affected and the Board will be virtually left 'power less' if the recommendations accepted as such. The reservoirs provide unique ecosystem services of their own. There are no thermal plants in the State, and cost of hydro power was cheap. Now 35% is hydal and 65% thermal including central share. Power now costs ₹ 10-11 per unit. Average price is ₹ 5.5. If it was hydal it would have been less than ₹ 2.00. The only option of the Board is to buy power from market. Bringing man power from national grid is not feasible due to transmission grid not being integrated with rest of the country. There is no immediate solution. There is limitation for micro projects though a few may be put up in two or three years. The option of gas based power plants is possible but is costly. LNG storage facility is being arranged. Only the MSES power plant in private sector can now use it. Since Kerala's power utilization is 90% for domestic, 52% by gas based generation will impact the domestic consumers severally. Whichever hydal projects to be set up, will be without affecting the biodiversity. At Athirappally loss of biodiversity will be extremely low. It has had prior environmental clearance three times. Tenders had been floated and awarded. Total poundage is limited. Biodiversity is not a substantial issue there. As for wind power generation wide roads would be needed and the Board has no plan for substantial investment therein.

Member, Generation (Projects) KSEB added that effective discussion on Athirappally has taken place on 18.01.2013 on site visit by the Working Group. Recommendation not to allow diversion of river/stream for any power projects will prejudice the Board's proposals for certain hydal projects. Diversion for intra state power generation may be considered. There are projects for renovation at 7 hydal generating station, but capacities could be enhanced only at Neryamangalam and Sabarigiri. Techno-economic feasibility of the proposed hydal projects have been examined by the Central Electricity Authority several times.

Revenue Department

The SEZ classification as attempted by WGEEP would affect Government's policy initiative to distribute Pattayam to occupants of forests prior to 01.01.1977. This would be problematic in the proposed ESZ1 and ESZ2 areas. Government has a proposal called 'zero landless' which if the SEZs are fixed as recommended would be thwarted. In Idukki and Wayanad land related human issues cannot be settled.

Chairman HLWG enquired about the recent decision of the State Government for utilization of 5% of the leased land construction of resorts and tourism projects. It was clarified that only 5% of the leased land would be permitted to be used for other purposes of which 90% as per the conditions shall be for horticulture and such other activities and 10% of the 5% leased land shall be used for tourism purposes. The recommendations will be prejudicial also for utilization of the 10% as permitted by State Government. There is the Protection of River Banks and Regulation of River Sand Mining Act 2001 to regulate sand mining from rivers. Constitution of the Western Ghats Ecology Authority as recommended would derogate from the authority of the Department in these sectors.

Local Self Government Department

Additional agencies as recommended would create problems at ground level. Suitable institutional arrangements may be thought of for strengthening the LSGIs falling within the Western Ghats area. Local Self Government Institutions have local level plan which they implement. Town planning regulations are there. The authority preparing the Master Plan can take note of the recommendations in the report of the WGEEP and factor them in the Master Plan rather than under the jurisdiction of a new overriding Authority. Now 25 towns have Master Plans. Others are underway, and are expected to be

completed in 18 months. Ad hoc development strategies as recommended may have to be discouraged. Also there are district level plans, to be formulated and approved. That for Kollam has been completed. That apart, Western Ghats Development Programme as a separate centrally sponsored scheme is also being executed. The Working Group wanted details of Taluks, to be furnished.

Agriculture

Agriculture is ineffect biodiversity conservation. Farmers shall be provided with incentives for conservation of cultivars to ensure their livelihood. The NREGP scheme is to be utilized for farming activities facilitating biodiversity conservation and traditional practices. Recommendation on control of Genetically Modified crops is welcome. As regards control of pesticides, the State Government have approved an organic farming policy. But farmers get misguided on GM crops and hybrid variety. Hybrid varieties are permitted and can be promoted. Application of agro-chemicals and pesticides is not within the limits prescribed. Nutrients are required to be provided by way of chemical fertilizers, to correct the imbalance, but not at the cost of environment. The Kerala Agricultural University is developing a package of practice. Integrated Pest Management Practices are to be developed by the KAU. Thereafter ban on pesticides as recommended in the WGEEP can be thought of. Fertilizer ban is also not to be blanket ban. For organic inputs the basic raw materials are to be ensured and its quality assured. The State has enacted the Paddy Land and Wetland Conservation Act 2008. Data Bank there under in respect of all villages is ready. The State is providing the highest minimum support price for paddy. Recommendations on control of Invasive Alien Species, preservation of traditional knowledge on species, water conservation etc need to be accepted. He also referred to the pollution issues related to Sabarimala (as Secretary, Devaswom Department) and the actions being taken for setting up of Sewage Treatment Plants, and also the efforts being made to keep river Pampa pollution free. As to the query on release of forest land for Plantation Corporation, 5% of

which could be diverted for other activities it was clarified that it applies only for private estates. As regards exotic monocrops, and environmental impacts of oil palm as against coconut, the areas planted with the former having seen drier and without under growth, it was explained that it was in 1980, when there was no EIA process that oil palm started to be planted in large numbers and its plantation is not expanding.

Smt. Sunitha Narain categorically raised the issue of water conservation and expansion of rubber cultivation in Western Ghats areas especially in Kasargod where cashew was the standing crop. She also referred to withdrawal of the incentives of the Ministry of Agriculture for organic farming. She stressed the need to conserve the tanks and ponds and other local water resources to fight draught, for drinking water and irrigation. The River Restoration Programmes of the Water Resources Department, RKVY and similar schemes must converge to have an integrated action plan to be executed to protect the water bodies pollution free. Exotic species, posing threat to water bodies, native biodiversity and even health problems shall be dealt with, to avoid the threat. Dr. Darshan Shankar specifically queried about the extent of forest that would be inundated, the uniqueness of the location and the way out to minimize the impacts and optimize the cost.

Dr. C. Pandurangan of TBGRI explained the points. Submergible area is only 1.04Km² out of 26.5 Km² of reservoir area in the Vazhachal Forest Division. The entire extent of the Forest Division and the entire data thereof are being quoted against the project as that of Athirappally. As per the EIA procedure only the project area need be considered. It has a gradient to the west. 40% of submergible area is river bed. 28% is its riparian areas. Rest is teak plantation. It is mainly secondary growth. The 28 ha required is also not very unique. Tree density and allied matters have been worked out. It is a deciduous forest having 130 tree/ha. Most are non merchantable. There are 12

RFT species, out of which only 6 is in submergible area. For that, a rehabilitation package has been proposed.

Representatives of KSEB supported the views and added that four competent scientific studies on the project had been done.

Dr. Sajeer of KFRI expressed a different view. Biodiversity of the location has been well documented. It is unique. It is the only area where all species of horn bills of Kerala Forests are found. The birds need tall trees. The study was with reference to Athirappally, within Vazhachal Forest Division. It is a single system. All these species together are found only in these riparian areas. The view was however refuted by Dr. Pandurangan who held the view that except one, other species have better distribution outside Athirappally.

As regards flow variation in the river, it was mentioned that the dam will be near to Vazhachal falls, but the water will reach again to Chalakkudy river 7 Km downwards. The DPR ensures 24 hour discharge even during summer. Generation will be for 3 hours. No such species of fish whose migration will be impeded by the dam are there in the river. No such cases have been reported though the Poringalkuthu dam was there since 1959. Due to Athirappally no variation is expected in the biodiversity aspects of the river. The design is such that variation in flow is avoided. Utilisation of water will be optimum due to the design.

Forest Department.

The project had been recommended in 1995. Government of India had given the Stage II clearance as well. Forest Department abide by that stand. The department welcomes the spirit of conservation highlighted in the report. About 60% of the Western Ghat areas would be SEZ1 whereby very little area would be available for development activities. The grid size as proposed need to be scaled

down. The proposed WGE Authority need not be set up as additionality. Process of identification of ESZ around Protected Areas is under way. Similar restrictions will be imposed in such buffer areas also. As regards monoculture plantations of alien trees those may be stopped subject to contractual obligation. The JFM programme may co-exist with the conservation proposals as recommended. As regards Forest Conservation, Kerala may be seen on a different footing taking in to account of the track records.

Centre for Water Resources Development & Management

Details of water conservation programmes under the Western Ghats Development Programme were explained. Soil and water conservation measures are needed to fight the draught condition in Western Ghats areas. Pilot projects in water conservation as community projects. Organic Farming to be prompted in Western Ghats areas. Changes in cropping pattern, land use and use of agro-chemicals have had adverse impact on the environment and public health sectors in Western Ghats areas.

Irrigation Department

Peculiarities of river systems in Kerala were explained. There are no big dams. Rain water needs to be stored for summer. Climate change aspects have affected rain pattern. There is considerable decrease in ground water table. The dams are in ESZs. Water harvesting would be impossible if the recommendations are implemented.

Kerala Forest Research Institute

The report supports environmental governance. Environment concern of the Western Ghats have been duly incorporated in the report. The new

institutional structures proposed are welcome, Kerala is becoming a draught hit state and such conservation measures would support water availability.

Department of Ecotourism

The Department welcomes the recommendation. Tourists come to see the floral wealth and nature's bounties of Kerala. The ecotourism activities are mainly in the Western Ghats areas. Those are in conformity with international ecotourism policy and guidelines of Government of India.

Kerala State Biodiversity Board

All aspects towards conservation of Biodiversity of Western Ghats have been adequately addressed in the report. But the concern of 3.4 lakhs of inhabitants of the Western Ghat areas also needs consideration. The people also need to be taken along with. Conservation as proposed requires to be a participatory process. There are Biodiversity Management Committees in all Grama Panchayats of the State. Farm tourism shall be with organic farming. Conservation of native breeds need to be incentivised. Biodiversity Management Committees need to be involved in all biodiversity conservation programmes at Grama Panchayat level. Chairman also explained the progress of preparation of People's Biodiversity Register and the need to incentivise native biodiversity conservation.

Dr. Amt Love , Deputy Director made enquiries about heritage sites and impediments if any on implementation of conservation projects therefor. It was explained that no impediments have been confronted and it is accepted as a recognition. It improves eco-tourism prospects as well.

Revenue Department

Almost all major schemes of the State come within the ESZ as identified. Also the recommendations tend to affect development prospects adversely. Now majority of the activities sought to be regulated are governed by strict laws and regulations. Further statutory authorities may not be necessary.

Concluding the discussions, Chairman thanked the Secretaries to Government and others for the feed back and reiterated that the concerns expressed will be duly considered by the Working Group. The Working Group wanted the reports and maps available with the Departments and agencies concerned to be made available for reference.

The meeting concluded at 1.30 p.m.

**THE DISCUSSION BY THE HIGH LEVEL WORKING GROUP WITH
SECRETARIES TO GOVERNMENT OF KERALA ON THE
RECOMMENDATIONS OF THE WESTERN GHATS ECOLOGY
EXPERTS PANEL (WGEEP)**

List of participants

1.	Prof.V.N.Rajasekharan Pillai	Executive Vice President (Kerala State Council for Science, Technology & Environment and Ex-officio Principal Secretary, Science & Technology)
2.	Sri.V.J.Kurien	Principal Secretary (Water Resources)
3.	Sri.Sivasankar	Secretary (Power) & Chairman, KSEB (i/c)
4.	Sri.James Varghese	Principal Secretary, Environment Department
5.	Smt.Annamma John	Member (Generation-Projects), KSEB
6.	Sri.Kamalavardhana Rao	Secretary (Revenue)
7.	Sri.V.S.Senthil	Principal Secretary (Local Self Government Department)
8.	Sri.K.R.Jyothilal	Secretary (Agriculture & General Administration)
9.	Dr.Pandurangan	Senior Scientist, Tropical Botanic Garden & Research Institute
10.	Dr.Oommen.V.Oommen	Chairman, Kerala State Biodiversity Board
11.	Dr.K.P.Laladhas	Member Secretary, Kerala State Biodiversity Board
12.	Sri.Triᵠēdi Babu	Principal Forest Conservator (Dev)
13.	Sri.T.D.Narayanan Kutty	Director, Eco Tourism Department
14.	Sri.K.P.Ouseph	Chief Conservator of Forests
15.	Dr.Sajeev.T.V	Scientist, Kerala Forest Research Institute
16.	Sri.Eapen Varghese	Chief Town Planner
17.	Smt.T.M.Sudha	Additional Chief Town Planner
18.	Sri.G.Anil Kumar	Superintending Engineer, Irrigation Department
19.	Sri.Sudheer Babu	Chief Environmental Engineer, Kerala State Pollution Control Board

**MINUTES OF THE MEETING OF THE HIGH LEVEL WORKING GROUP
ON WGEEP REPORT WITH THE ALL PARTY DELEGATION FROM THE
STATE OF KERALA**

Date: 19.01.2013

Time: 3.30 pm

Venue: Hotel Taj Vivanta, Vazhuthacaud, Thiruvananthapuram

List of participants: enclosed

Shri.K.Kasthurirangan, Chairman of the High Level Working Group welcomed the delegates and briefed the details of the discussions the committee had with Hon'ble Chief Minister, Hon'ble Ministers Government Secretaries and Department Heads concerned in the previous sessions of the day. He also made a reference to the visit of the committee to the proposed Athirapally hydroelectric project area on 18.01.2013. Representatives of political parties were requested to express their views in the matter.

Shri.Elamaram Kareem-Communist Party of India (Marxist)

He pointed out that the Gadgil committee did not give an opportunity for the political parties as has been made now. He sought one month's time for submitting written response on the WGEEP (Gadgil Committee) report. There ample legislative protection for the Western Ghat areas of the state. The recommendations will adversely affect not only the farmers of the areas but also the entire population of the State. Power scenario of the State is grim. State is looking for other power sources but chiefly depends on hydroelectric projects for power generation. The Expert Committee of Ministry of Environment & Forests has given approval for the Gundia project in Karnataka but Athirapally project was not given the same consideration. He appreciated the holistic approach given in the WGEEP report. He said that the CPI(M) is not against the recommendations as a whole. But most of the recommendations are impractical. Population density and developmental aspects have to be considered. Kerala Legislative Assembly has discussed the report and unanimously adopted a resolution. The House has also opposed the Gadgil report as such but was of the view that the conservation activities shall not affect the livelihood, agriculture and development of the areas. Owing to unscientific zonation adopted by the committee 56% of the land area falls in various zones. Entire area of some Taluk is included in zone ESZ1, ESZ2 or ESZ3. There was no Kerala model project for Udumbanchola Biodiversity conservation as commended in WGEEP Report. People's representatives were not consulted while preparing that project. Though there was a meeting in this regard no such decision had been taken to implement the project. Recommendations regarding the decommissioning of dams are also not acceptable. Developmental activities including construction of roads would not be possible in any of the ESZs. 95% of quarries are located in Zone-1, Banning of quarrying may result in shortage of building materials especially for house construction. Recommendations regarding the monoculture practices and use of pesticides are not practicable. Teak, Coffee and Rubber plantations which

earns foreign exchange may have to be phased out. Possible hindrances in the issuance of pattayam to settlers were also mentioned.

The representative of CPI(M) requested the High Level Working Group to consider the opinion of political parties at Local Self Government Institution level and farmers, visit Idukki and Wayanad districts to understand the issues of people and also to defer all further actions on the WGEEP recommendations.

Shri.C.Divakaran-Communist Party of India

Kerala is a state that is vigilant in protecting environment. Without any such recommendations, as contained in the WGEEP report, Silent Valley and Athirapally are well protected. Kerala Legislative Assembly has passed more than a dozen legislation aiming to protect the environment. People of Kerala who have strong environmental concern are proud about the Western Ghats. He endorsed most of the Government views contained in the memorandum submitted to the High Level Working Group. Without human activities there is no relevance for nature care. The recommendations shall be People oriented as well. Kerala will face acute shortage of electricity if the recommendations on decommissioning of dams are implemented. Kerala cannot be compared with other Western Ghats states where plenty of vacant land is available. Density of population should be taken into account before any decision is taken to impose restrictions or regulations. Without any such recommendations for regulated conservation Kerala ranks first in environment protection.

He stated that his party will co-operate with the efforts to protect the precious biodiversity but requested the High Level Working Group to feel the pulse of Kerala before implementing the WGEEP report since most of the recommendations are against the interest of the state and common people.

Shri.Francis George-Kerala Congress (M)

He appreciated former Minister of State Shri.Jairam Ramesh for appointing the WGEEP Panel with good intentions. However functioning of the panel was not in conformity with the Terms of Reference. No on the spot study except a visit to Athirapally, no meaningful consultations with stakeholders other than a discussion with the MPs at Delhi, and no consultation with the 3 tier Local Self Government Institutions concerned had been made. Settlements in the areas affected were not given any consideration. He emphasized the need to visit the Idukki and Wayanad districts as most of the settlers are in these districts. Conversion of public land into private land is not accepted in the report. If recommendations regarding monoculture is accepted all the plantations like Teak/Coffee/Cardamom/Rubber etc have to be phased out. The grid scale of 9X9 km adopted for zonation is unacceptable, and human activities would not be possible if the zonation is accepted as such. The Panel itself has admitted that all the relevant criteria as proposed by Pranab Kumar Zen Committee were not considered for zonation due to lack of time. The suggestion of Gadgil report that the WGEA will rectify the anomaly, if any, in the provisional notification of Ecologically Sensitive Zone is not a sound reasoning. Unlike other states, Kerala is unique in land use, social economic aspects, population etc. Development works would not be possible in the

state, where 56% of the land is recommended to be included in ESZs. Majority of the dams are located in ESZ1 and the state mainly depends on hydroelectric projects for power generation. Facts being so, if the recommendation on decommissioning of dams is accepted, it is to be clarified as to how the energy needs of the state would be met. He expressed doubts regarding the authority of National Green Tribunal in passing an interim order to adhere to the recommendations of WGEEP, which is not yet accepted by any Governments.

He requested the High Level Working Group to look into above issues and aspects objectively and make modifications accordingly.

Dr.Sooranad Rajasekharan, Indian National Congress (I)

The recommendations of the WGEEP report that are detrimental to the state are not acceptable. Kerala Legislative Assembly has expressed its views on this report and unanimously adopted a resolution. Gadgil committee defined Western Ghats only from an environmental point of view. Apart from six Central Acts, Kerala Legislative Assembly has enacted 14 unique laws for the protection of environment. The High Level Working Group should visit Idukki/Wayanad districts. Elaborate study and detailed discussions are required on the WGEEP report.

Sri.PMA Salam, Indian Union Muslim League

Kerala Legislative Assembly has passed a unanimous resolution on the Gadgil report. It signals the concern of the entire state. The report will affect the livelihood of the common people. One fourth of the state is forest. Due to unscientific zonation, 56% of the land is recommended to be included in ESZs whereby these areas cannot be appropriated for human activity. Western Ghats need to be protected but at the same time interests of inhabitants may also be considered. Gadgil committee never considered the needs of the inhabitants of Western Ghat areas. High Level Working Group may consider all these aspects and apprehensions of the people of Kerala for redressal.

Adv.Padma Kumar-Bharathiya Janatha Party

Party is not opposing the WGEEP report in its entirety, but the genuine concerns of the people shall be taken into consideration. Further clarifications on zonation is essential. The proposed WGEA might become a super authority. People and environment friendly recommendations shall be implemented.

Concluding the discussions Chairman informed that similar views were expressed by other states also. The committee will bring these comments together and these will be rightly appreciated and duly reflected in the recommendations of the Working Group. He also consented to visit Idukki district to assess the ground situation.

The Principal Secretary, Environment Department delivered vote of thanks on behalf of Government.

The meeting ended at 4.45 pm.

**Meeting of the High Level Working Group on WGEEP Report with the
All Party Delegation from the State of Kerala**

List of participants

1.	Sri.Elamaram Karim	M.L.A, CPI(M)
2.	Sri.C.Divakaran	M.L.A, (CPI)
3.	Adv.R.Satheesh Kumar	Kerala Congress
4.	Sri.C.Mohanan Pillai	Kerala Congress (Jacob), State General Secretary
5.	Sri.V.S.Manoj Kumar	General Secretary, Kerala Congress (B), State Committee
6.	Adv.Padma Kumar	State Secretary, BJP, Kerala
7.	Sri.Vellanchira Somasekharan	BJP Karshaka Morcha, State General Secretary, Kerala
8.	Dr.Sooranad Rajasekharan	General Secretary, KPCC, Indira Bhavan, Thiruvananthapuram
9.	Sri.K.Francis George	M.P.General Secretary, Kerala Congress (M)
10.	Sri.Mathew Stephen	Ex.M.L.A, Karshaka Union State President
11.	Sri.Kulakkada Raju	President, Karshaka Union (Jacob)
12.	Sri.P.M.A. Salam	Secretary, Indian Union Muslim League, Kerala State Committee
13.	Prof.Thonnakkal Jamal	State Muslim League Working Committee Member

Brief record of discussion between Dr. K. Kasturirangan, Member, Planning Commission, and Shri Manohar Parrikar, Chief Minister of Goa State, on 11.02.2013 at Panjim

After the exchange of usual pleasantries, the Chief Minister initiated the discussion by stating that the forest cover in Goa State has increased by about 5-7% during the past few years. The canopy-wise total forest cover in the state is about 57%. It would be impractical to suggest regulation of un-organized activities as per recommendations of the WGEEP Report. The WGEEP Report has not taken into consideration the common man's interests. MoEF is at fault for being extra liberal in granting environment clearances to the mining projects to the State in the past. The courts are exceeding their jurisdiction in taking executive decisions. The Central Empowered Committee can not be allowed to run the Mining Department of the State Government. While the WGEP Report may be good environmental report, it has not taken into account the developmental issues, has made recommendations which impinge on the powers of the State Government and have serious ramifications for the federal structure in the country. In case the WGEEP Report were to be implemented, it would lead to chaotic situation in the state.

On the iron-ore mining issue, the Chief Minister stated that the mining activities began in the state in the 1950s. It is a low grade ore and can hardly be used in India. Because of the increase in demand for this quality of ore in the global markets during the last few years, there has been windfall profits for the mine owners and their greed has *inter alia* which has led to illegal mining in the State. The current total ban on the

mining of iron ore in the state is a serious issue, as about 25% of the State revenue comes from the mining activities and about one lakh population depend on mining and allied activities in the State.

Dr. K. Kasturirangan explained to the Chief Minister the terms of reference of HLWG, the broad methodology intended to be followed by HLWG in demarcation of ecologically sensitive areas within Western Ghats and about the proposed decision support system to facilitate appropriate decision-making by six States in the Western Ghats.

Brief record of discussion of the Members of the High Level Working Group (HLWG) with Prof Madhav Gadgil, Chairman, Western Ghats Ecology Expert Panel (WGEEP) on 28th December 2012 at Pune

The list of HLWG members present during the meeting is at Annexure.

Dr. K. Kasturirangan, Member (Science), Planning Commission and Chairman, High Level Working Group thanked Prof Madhav Gadgil, Chairman, Western Ghats Ecology Expert (WGEEP) for taking out time to meet with HLWG Members and commended the WGEEP report as an example of erudition and scholarliness on the biodiversity of Western Ghats. Dr. Kasturirangan also mentioned that he appreciates the willingness of Prof Gadgil to participate in open discussion on all issues related with WGEEP report and cited the meeting organized by Vijnana Bharati , at Pune. Dr. Kasturirangan than informed Prof Gadgil about the activities undertaken by the High Level Working Group so far , including the re-drawing of the WG boundaries on a scale of 30Mx 30M and requested Prof Gadgil to share his views on the WGEEP report.

Professor Gadgil first alluded on the report of the Pronab Sen Committee set up by the Ministry of Environment and Forests, Government of India to deal with the issue of ecologically sensitive areas and also gave a brief account of the ecosensitive zones notified by the MoEF. Prof Gadgil commented on the continued usage of the term “Ecologically Sensitive Areas” as not conforming to the definition and that the Pronab Sen Committee was tasked to look at criteria for demarcation of Ecologically Sensitive Areas . He further informed, that the Government has notified ecologically sensitive areas in the past in an adhoc manner and which is not based on accepted criteria. He said that it was in this back drop that the WGEEP was asked to look into the report of previous committees on the subject, the resolution of National Board of Wildlife for declaration of ecologically sensitive zones (ESZs) around Protected Areas and the Supreme Court ruling on the subject so as to evolve criteria for demarcation of ESZ.

Professor Gadgil felt that based upon the Pronab Sen Committee criteria the whole Western Ghats could be classified as ecologically sensitive area and the WGEEP also recognized the whole of Western Ghats as an ecologically sensitive area based upon its biodiversity value. He then mentioned that the Pronab Sen Committee did not provide any management regime for the ecosensitive areas and therefore the WGEEP developed a graded and nuanced approach for the management of ecosensitive areas, wherein, Western Ghats area was categorized into three ecosensitive zones viz. ESZ 1, ESZ 2 and ESZ 3 of varied ecological sensitivity. The WGEEP went by the norm in the National Forest Policy, as per which 2/3rd area in the hilly areas should be kept under vegetation - this benchmark was used to define boundary for ESZ 1, the most sensitive zone.

Prof Gadgil then highlighted that the Pronab Sen Committee had also recommended that spatial environmental database should be developed for the country but nothing has been developed in the last ten years. As such, WGEEP undertook the task of compiling spatial environmental database for Western Ghats based upon all available computerized information on 9 x 9 km grid. The size of the grid was chosen keeping in view the constraints of time and resources available with the Panel and the available information. Prof Gadgil opined that mapping of Western Ghats should be preferably done at the village and taluka level. The environmental database so developed should be used for planning purposes and should be available in the public domain.

While undertaking its activities the WGEEP decided to take 2-3 levels of inputs, which included not only official inputs i.e. at the level of State Governments and Central Government but also inputs from locals which included inputs from Gram Panchayats, Zilla Parishad, and Gram Sabhas. Prof Gadgil stressed on the importance of consulting Panchayats and Gram Sabhas in decision making. He said that this is also mandated in the 73rd and 74th constitutional amendments. At present, there is no peoples' participation in decision making relating to environment protection. He expressed the view that the public hearings done under EIA process are not fair and transparent.

Prof. Gadgil opined that the laws are not being implemented in the country and in some case they are being flouted. He gave example of the Forests Right Act, which as per him is not being

implemented at the ground level. He informed that it is in this context that the WGEEP decided to include specific case studies related to violation and non-compliance in the report. He stressed that if the existing laws are implemented in the right earnest there was no need for constituting any Panel. He emphasized the need of bottoms up planning process with free access to reliable information for effective peoples' participation in decision making.

Regarding the zonation methodology adopted by the WGEEP, Prof Gadgil mentioned that the model of Goa Regional Plan 2021 was adopted, wherein, a database was developed as part of planning process which was sent to the Gram Sabhas in Konkani and Marathi for their comments. The recommendations of the Gram Sabhas were then sent back to the Government. He did however mention that this process is not yet completed in case of Goa. He mentioned that for wider appreciation of the WGEEP report it should be translated in regional languages of the Western Ghats region and circulated amongst all Gram Panchayats. He added that in the absence of the feedback from the Gram Sabhas of the Western Ghat region on the WGEEP report, the deliberations and the output of the High Level Working Group would not be as relevant. He also mentioned that the State Governments have been spreading misinformation about the Western Ghats Ecology Expert Panel report.

Prof Gadgil thanked the members of the HLWG for the interaction and expressed his willingness to work together with the Group in case any further clarification/suggestion were required with respect to WGEEP report.

Dr. K Kasturirangan thanked Prof Gadgil for sharing his views on the WGEEP report with the HLWG and stressed that the task of the HLWG is to develop a pragmatic action plan which can lead to the conservation of the unique biodiversity of the Western Ghats region consistent with sustainable development of the region. He mentioned that the HLWG is considering the WGEEP report in this perspective. He further added that the members of the HLWG do not have any preconceived notion or bias while examining the WGEEP report.

ANNEXURE

Meeting of the High Level Working Group (HLWG) held on 28-12-2012

List of Members present:

1.	Dr. K. Kasturirangan	In Chair
2.	Shri Jagdish Kiswan, ADG(WL), Ministry of Environment and Forests	Member
3.	Shri J.M. Mauskar, Ex-Special Secretary Ministry of Environment and Forests Government of India	Member
4.	Prof. C.R. Babu, University of Delhi	Member
5.	Shri Darshan Shankar, Chairman, Indian Institute of Ayurveda Research	Member
6.	Shri Ajay Tyagi, Joint Secretary, Ministry of Environment and Forests Government of India	Member Convener
7.	Dr. Indrani Chandrasekheran , Advisor, Ministry of Planning Commission	Special Invitee

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The presentation of Prof Gadgil for the meeting had already been circulated to the members in
advance (Annexure I).

Annexure 3: Summary of the Comments Received on the WGEEP Report from Stakeholders before Constitution of the HLWG

1. About 34% of responses from locals strongly support permitting mining in four *taluks* of Goa viz Sanguem, Bicholin, Satari and Qupem. In all these communications, mining was stated as an important economic activity, affecting livelihoods of a large number of people. They also stated that mining industries in these *taluks* of Goa have responsibly taken up social activities to promote well being of people.
2. Similarly, responses received from locals of Sindudurg favour mining activities. These responses strongly support, The New India Mining Company, and its commitment to the environment. These comments highlight the enhanced livelihood options, improved water supply for agriculture and general well being of the people of the district due largely to the INIM.
3. Responses from locals of *Dang* area of the *Navsari* district, Gujarat , suggest careful examination of the proposed ESZ delineation based on the criteria put down by the Government of India and carried out with the help of local educated boys.
4. Overwhelming responses has been received to examine the methodology adopted for delineation of EcoSensitive Zones including the area earmarked.
5. A detailed response strongly advocates the establishment of Athirapally Hydro Electric Power Plant.
6. About 11 elected representatives in a strongly worded letter, have stated that establishment of the Western Ghats Ecology Authority (WGEA) would not serve any specific purpose and would exist as another layer. Establishment of such an authority would only result in delays in project clearances and would impede development.
7. Another detailed response requests for declaration of Sawantwadi -Dodamang as ESZ.
8. A human rights organization has indicated that , of the 4 heritage sites notified, two are in Kohlapur. They have therefore requested not to add to the existing inviolate area in view of livelihood issues and as locals have not been consulted.
9. Responses from a group of Kodagu Planters have categorically stated that plantations should be excluded from the Ecologically Sensitive Zone.
10. Villagers of Goa , have pleaded that none of the recommendations of the WGEEP should be followed. About 37 locals specifically have prayed that there should be no moratorium on Mining in Goa.
11. LAVASA Corporation Ltd has requested clearly stating that 'new hill stations approved' be not included in WGEEP report recommendations.
12. "Green Peace" strongly supports the WGEEP report in entirety.
13. Federation of Indian Mining Industry has expressed severe disagreement with the recommendation of the report , stating that Mineral exploration and mining are critical to the nation's development.
14. H ENERGY has requested that if the thermal power plants are being discouraged in the Western Ghats region then Gas Plants should be promoted.
15. A detailed technical response stating the erroneous zonation methodology of the WGEEP has also been received.

16. Sarpanch of Gram Panchayats of district Thane , *Jawahar Taluk* and members of the panchayat including 157 locals have requested the MoEF that the ESZ be delineated after careful consideration and involvement of locals. A Cumulative Environment Impact Assessment be also carried out. Previous attempts such as ZASI (Zonal Atlas for Siting of Industries) initiated, but were not discussed and implemented be re-considered. A fresh look on zonation methodology and procedure is imperative.
17. Suggestions to remove governance deficit by way of public awareness and training has been detailed in a communication.
18. A request has been made to decline the proposal for creation of an industrial park in Alleppey .
19. About 29 people have strongly voiced their concerns against the Gundiya Hydro Electric Power Plant.

Annexure 4: Summary of Comments Received on the WGEEP Report from Stakeholders before Constitution of HLWG classified under various Heads

Summary of comments received before formulation of HLWG						
Zoning Methodology	Mortorium on Lote Parshuram	Mining in Sindudurg	Mining in Goa	Establishment of WGFA	General Comments not in favour	Gundiya HEP
The categorisation of the ESZ itself needs to be scientifically validated.	Any expansion of industries or new investments in this region are on hold for the last 2 years due to blanket moratorium on Ratnagiri district. This has stagnated employment generation, exports and growth of the region in general.	The earnings and business have increased because of mining activities. Lifestyle and financial status of our villagers has positively changed due to mining	We desparately need growth in the region. Please permit mining.	The WGFA will not serve any purpose.	WGEEP panel has not carried out any detailed study which brings out very nature of problem on coastal region. In addition, all coastal regions in country is under preview of CRZ notification 2011 which includes adequate procedure, checks and measure for coastal region.	The Report has captured in an eloquent manner the importance of Gundiya. We cannot thrash the last few remaining places in the Western Ghats like Gundiya to dust and use power generated by super destructive projects.
Exact demarcation of sensitive areas. Broad regions like Taluks etc cant be used as benchmark at all.	Lote-Parshuram industrial area falls in between Khed & Chiplun and there is no development in this region apart from chemical industry in Lote which is source of direct & indirect income for people in the region.	Our traditional agriculture of Cashew does not generate sufficient income to feed the families in our village and district. The mining business should continue and the stay should be released immediately	Mining industry in Goa is pivotal to the entire Trade, Commerce and Industry in the state on which lacks of people depend for their livelihood. The remedies suggested by WGEEPR cannot be hastily forced upon the people without planning.	The establishment of the Western Ghats Ecology Authority would only result in delays in clearances.	There are MoEF guidelines for winds energy projects on forest lands. These guidelines can be revised and made robust, without any need for special rulings under ESZ1 category.	It is requested to respect the recommendations of the committee and request denial of clearance to the proposed projects particularly Gundiya in order to protect the Western Ghats.
						Strong measures should be initiated to address issues of deficit in environmental governance as highlighted in the report
						Translation of report in local languages & extension of timeline for comments. Western Ghats encompass an area of 1,29,037 sq.km. population of a few crores and 5 states with lingual diversity. It is therefore important to publish the report in all local languages of the Western Ghats Region. It is also necessary that all Gram Panchayats, Panchayat Samiti, Zilla Parishads, Municipalities and Corporations in the area are provided with a copy of the report in the regional languages. The Ministry hence should extend the timeline for receipt of comments/ views by about 90 days. The MoEF should consider this request, issue orders in order to ensure transparency among stakeholders.
						Implementation of the WGEEP Report must be strongly endorsed
						General comments in favour In all areas designated as ESZ1, all mining should be phased out by 2016.

<p>The panel has over simplified the actual task of demarcating areas within the Western Ghats by describing the ecology of the Western Ghats and by using readily available data, impressions gained through field visits etc.</p>	<p>Committee has completely formulated a one sided report on the region without involving opinion of the industry. Even the villages around the Lote-Parshuram area are supporting the industry & new investments realising that industrialisation will only help their next generation to earn a living.</p>	<p>Mining has generated new opportunities of self employment. The New India Mining Company is a flagship company and has supplied needs of villages like water supply for agriculture and medical help.</p>	<p>Sudden & abrupt ban of Iron ore ban extraction and export from Goa is not advisable and acceptable.</p>	<p>The WGEA would be another layer in the multiplicity of several institutions already existing.</p>	<p>It is common knowledge that if fertilisers, pesticides and weedicides are phased out and organic cultivation is practised, the yield from coffee plantation will get reduced by 30 % to 40 %.</p>	<p>The Gundia basin lies very near to Mysore Elephnat Reserve and is an important corridor for elephant migration. It is also a home for tigers. It is requested that the ministry to accept the report and reject the environmental clearance proposal submitted by Karnataka State Government.</p>	<p>All new projects in the Western Ghats (dams, mines, tourism, ho using etc) should be subject to Cumulative Impact Assessment and should not exceed the carrying capacity.</p>	<p>Genetically Modified Organisms should not be allowed in the Western Ghats region. No BT Cotton Cultivation or GM Rubber Plantation should be allowed.</p>
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Annexure 5: Analysis of the Responses Received by the HLWG on the WGEEP Report

Responses not in favour of the WGEEP Report					Responses in favour of the WGEEP Report	
Technical Comments	Project/Area Specific Comments	Recommendations/Regulatory Framework	Socio Economic Issues	General Comments	FOR WGEEP REPORT	Project Specific
The square grid of 9 km x 9 km, used for division of ESZ, does not differentiate natural features like water body or watershed or administrative unit or human habitat.	Regarding specific areas such as Athirappilly, Pooyankutty, Ratnagiri, Sindhurg etc. separate "Status Report" should be prepared.	Moratorium on new clearance for mining, red and orange category of industry, thermal and nuclear power plants, artificial prawn cultivation, ports, marine sports/sea world projects, three to five star tourism, five star holiday resorts, tourist townships such as LAVASA, farm houses that lead to privatization of beaches, hill-slopes; hill tops and highways that disturb the sensitive ecosystems of hill ranges and sea fronts - mangroves, wetlands, breeding ground for fish, habitat of sea creatures, birds, animals, etc. needs reconsideration.	The local inhabitants should be permitted to reside in ESZ 1, 2 and 3 and continue their livelihood vocations and as far as possible mobilised to help in protection and conservation of the biodiversity and ecology of these zones GM crops should not be allowed across the Western Ghats	Report be made available in the local vernacular language to the communities and stakeholders of Western Ghats, so that the people can understand as to how it is going to affect their lives in future	The Western ghats are unique and are a Biological HotSpot of the country. These need to be protected. The report is elaborate, exhaustive and uses detailed database to report and cover the Western Ghats	Proposed Interstate highways to Kerala will cause massive loss of tree cover in Kodagu.
The report has not taken note of the Taluka boundaries earmarked by the Revenue department while incorporating Talukas in the ESZ. This has resulted into residential area of many Talukas into ESZ which is most dangerous.	There are 19 dams in the irrigation sector and 33 major dams in the Power Sector and 2 dams in the water supply sector. Most of the dams have crossed the life span of 30-50 years. The WGEEP has recommended that all the dams that have crossed the life span of 30-50 years will have to be decommissioned in a	Put in place Biodiversity Management Committees in all local bodies, fully empowered under the Biological Diversity Act, 2002, to regulate use of local biodiversity resources	Choose topographically suitable crops and promote indigenous cultivars suited for the climate and region. Phase out all pesticides, weedicides and synthetic fertilizers in a phased manner in the next five years. About 6000 crew members work on board barges and 30,000 in various ancillary industries related to barge industry, i.e of say 1.5 lakh population. They will lose employment	The report stands against the principle of decentralization of powers as envisaged in 'Panchayati Raj System' adopted in India with an aim of participation of local communities in all decisions as it is surprising that the committee did not think it fit to include even a single elected representative of	"Need for benefit sharing arrangements when land is acquired." – We agree with this suggestion of the expert panel and appreciate recommendations from them for a sustainable benefit sharing model with regards to private land, for wind energy	The proposed high tension power line through South Kodagu will result in the loss of about 15000 trees in forest and plantation areas.

<p>The division of Western Ghat into three eco-sensitive zones (ESZ) does not have perfect scientific basis.</p>	<p>phased manner. This is unacceptable.</p> <p>Non-applicability of WGEEP report and current moratorium on LNG storage and regasification industry</p>	<p>Initiate registration of crop cultivars as called for by Protection of Plant Varieties and Farmers' Rights Act, 2001, and give grants to Panchayats to build capacity for in situ conservation of crop genetic resources</p>	<p>The barge owners would be out of business, with huge loans to settle. Banks to Goa may have to face a tough time recovering their disbursements. Entrepreneurs invested in purchasing a barrage by taking bank loans which together are estimated to be approx. 1000 crore.</p>	<p>concerned area</p> <p>There have been no discussions held with the GCCI (Goa Chamber of Commerce & Industry) on this important issue (of stakeholder engagement) despite, being one of the oldest Trade Association's in the State Detailed consultations were also not held with State government.</p>	<p>The recommendation of cumulative Impact Analysis in Ratnagiri and Sindhudurg area is a welcome step</p>	<p>A moratorium for ESZ 1 areas on conversion of agriculture, horticulture and plantation lands for commercial purpose and on executing other developmental projects should be placed immediately</p>
<p>The overall recommendations of WGEEP are not based on scientific study and are inter contradictory</p>	<p>The important areas such as Dapoli and Guhagar in Ratnagiri District, and secondary ranges of the Western Ghats in Tahne and Raigad districts such as Tungarashwar, Manor, Tansa, Valitarna, Prabal etc have unfortunately been excluded by the WGEEP should be classified as ESZ1.</p>	<p>There is no need of Western Ghats Ecology Authority (WGEA), if one goes through the role of authority as mentioned in the report, it mentions that WGEA under EPA will not be in derogation of but in addition to other environmental laws to deal with offenders in the Eco Sensitive Zone (ESZ) of the Western Ghats. This is a duplication of effort as this role is already played by especially created Green Tribunals in India.</p>	<p>In the southern States of Karnataka, Kerala and Tamil Nadu the plantation sector Viz., tea, coffee, rubber and spices employs 12.50 lakh growers and 14 lakh workers directly and at least 5 times of that numbers dependent on this sector indirectly. Most of the plantations in the Southern regions fall under ESZ1. Organic cultivation will reduce the yield by at least 30-40%. In case these recommendations has to be implemented, the plantation industry, already burdened with high cost of production will become unviable and there will not be any other option but to wind up its operation will have very adverse economic impact.</p>	<p>The WGEEP report also needs to take into consideration other issues apart from only environmental issues. For eg. (a) Social and Economic cost benefit analysis (b) Sustainable Development (c) Health and Medicare (d) Current Biodiversity and loss, if any, region wise – Extent wise (e) Fate of Industries, Mining Projects which are operating following all legal adherences.</p>	<p>Sawantwadi - Dodamarg region of District Sindhudurg is highly Biodiversed in Nature and Ecologically fragile with Wildlife. The WGEEP Report must be accepted in full form and Dodamarg region along with Sahyadri Mountain Ranges should be declared as ESZ 1...</p>	<p>It is important to note that there is not enough water or flows available in the Chalakudy river for the proposed and the Plant Load Factor (PLF) or Capacity Utilisation Factor (CUF) is only 12 %. The water availability at present in the river is highly insufficient for a 163 MW project.</p>

Locking up the area of approximately 129037 square km for so called Eco Sensitive Zone (ESZ) seems inappropriate	The views and opinions expressed by officials representing Tourism Dept, Irrigation Dept, Tribal Welfare Dept. and Forest Dept. in favour of implementation of the proposed Athirappilly project is not seen included in the WGEEP report.	The proposed WGEA (Authority) has jurisdiction over location of the industry. The authority in the Western Ghats will take over the role of Ministry of Environment & Forest in approving the Eco Sensitive Zones (ESZ). This authority is not clear about the role and implications of Forest (Conservation) Act 1980.		WGEEP panel has not carried out any detailed study which brings out very nature of problem on coastal region. In addition, all coastal regions in country is under preview of CRZ notification 2011 which includes adequate procedure, checks and measure for coastal region.	If the MoEF is not inclined to declare the entire Western Ghats (WG) as ecologically sensitive, MoEF should nonetheless accept that the WG are ecologically sensitive. MoEF should state that for reasons it is not desirable/possible to declare entire WG as such under the Environment (Protection) Act, 1986.	Water availability for both irrigation and drinking water will be drastically reduced if Athirappilly HEP is implemented. The proposal of the HEP will severely affect the functioning of the existing major irrigation project, the Chalakudy River Diversion Scheme and result in the closure of the Idamalayar diversion which supplements the water needs of the Idamalayar HEP
The exact boundaries of each proposed zone needs to be worked out and final recommendations should not trigger blanket moratorium as suggested by the panel, instead there should be careful consideration for establishing green and non intrusive sources of energy such as wind.	Some of the very ecosensitive areas have not been included in the ESZ, ESZ 2, such as Ajara and Chandgad Taluk in Kohlapur district, which is the only wildlife corridor on the crest of the Western Ghats between Maharashtra and Karnataka.	There may not be a need to do comprehensive EIA, as recognised by Government of India, for this sector as the projects are environment friendly. The attempt will delay the development in India adding on to the existing power deficit.	Maharashtra Government economic survey highlights the backwardness of the Sindhudurg district. Census 2001 and 2011 reports highlight the negative factors which point to heavy migration from the Sindhudurg district.	There are MoEF guidelines for winds energy projects on forest lands. These guidelines can be revised and made robust, without any need for special rulings under ESZ1 category. The categorisation of the ESZ itself needs to be scientifically validated.	MoEF can consider constituting a separate Western Ghats ESA Cell based at Bangalore with exclusive mandate of implementing the recommendations of the panel report.	Displacement of the primitive tribal community is also an important issue. The HEP will generate too little electricity at an exorbitant cost.
Delineation of ESZ 1 to 3 by (i) Scientific Survey and data analysis (ii) consultation with	The Ministry of MSME, Ministry of Industry, Ministry of Textile have initiated number of Clusters of	Special economic zone, new hill stations, change in land use from forest to non-forest use, agriculture to non-agriculture, have	Composite power generation based on Solar, Wind and gas shall be in the best interest of Western Ghats Region in most environment friendly	The WGEEP report if implemented will alienate the local people from the effort of	The Gadgil report is very much in the interest of the farmers of the Western Ghats, to help them change for sustainable and	Wind mills in Nandurbar district have impacted Burai river, which is an important

local toilers and Gram Sabhas.	Micro and Small Industries /Services throughout India. Many such Clusters are being established in Western Ghats Region also. We suggest to continue all such Clusters as it is even though they may be in Western Ghats.	been discouraged / banned.Road and other infrastructural expansion will be allowed after EIA scrutiny. This will completely stop all the development and progress of the region.	manner.	conservation.	more productive farming. An important point of the WGEEP Report is that the Committee do not recommend dislocation of families either for 'development' or for 'conservation'	source of water in that area.
New Guidelines need to be developed for identifying Ecologically Sensitive Zone (ESZ) as the common man cannot understand about the ESZ.	The terms like layered approach, grids, zonation are highly technical. These need to be simplified with definitions and diagrams. For easy understanding, a flowchart may be used to represent the complex sequence of the rationalisation process.	It is requested to clearly mention the list of talukas and industries getting covered by WGEEP report by clearly setting boundary of WGEEP report and its applicability.	Sindhudurg despite flushed with adequate Economic Resources and Infrastructure is virtually an "no industry district". Immediate intervention is required so as to prevent exodus of working population, improve adverse Sex Ratio and to provide gainful employment and Per Capita Income.	The panel has not made any efforts to verify the data given in the book on the basis of ground truthing.	The analysis of the status of ecology of the Western Ghats described in the report should not only be accepted as baseline for the implementation of this report but also for any future activity related to Western Ghats	The proposed 9 thermal power stations one nuclear power station and several jetties in the districts of Sindhudurg and Ratnagiri cost would exert serious environmental impact on the local ecology and livelihood of locals.
The WGEEP has also not given due importance and consideration to Maval and Mulshi Talukas of Pune District in Maharashtra (Part I, Section 6, page 7) and it is missing from Appendix 2 (Part I, page 93). These Talukas have been identified as environmentally sensitive by the Town and Country Planning	The names of <i>talukas</i> in the Planning Commission list should be checked to find out whether they tally with the current names in the states.	Provisions of the (Draft) Guidelines for Ecotourism in and around Protected Areas issued by the Ministry of Environment and Forests (MoEF) may be taken into account.	<i>Locals were not consulted during the preparation of the report</i>	Reports to be translated in regional languages with the help of respective experts. Send the copy of such translation to various Gram Panchayats in the Western Ghat area and suggest them to have feedback from Gram Sabha in their regional languages.	The report helps us understand the ecological fragility of the region and the kind of development hence needed for this region, rather than following a development hence needed for this region, rather than following a development model for the plains.This approach is urgently needed for the water and livelihood security of people living in the Ghats as well as in the state of Kerala. The 3 zones viz ESA-1,ESA -	In view of the severe destruction of the biological diversity due to commercial activities in Western Ghats and adjoining coastal region, total prohibition/control measures need to be put in place and strictly implemented for conservation and protection of this unique bio-reserve.

<p>Organisation. This is mentioned in the current Regional Plan of Pune District, a statutory plan under the Maharashtra Regional and Town Planning Act, 1966.</p> <p>Report makes no mention of 'standing forests' which are the forest on lands other than on Forest Department lands and identified as 'deemed forest' by the Supreme Court Order in Writ Petition (Civil) No. 202 of 1995 with W.P.(C) NO.171 of 1996 and termed as 'Vansadrushya' or Forest Alike Areas (FAA), by the state of Maharashtra</p>	<p>Area of each grid/zone is very large. The variation within each zone/grid w.r.t. to the ecological criteria is not properly rationalised.</p>	<p>The best answer therefore lies in composite approach. We feel composite power generation based on Solar, Wind and gas shall be in the best interest of Western Ghats Region in most environment friendly manner.</p>	<p><i>Threat to Livelihood</i></p>	<p>We are disappointed to note that tourism has not been given much space in the WGEEP report. In ESZI, Ecotourism policy of MoEF to be followed refined by the WGEEA to promote minimal impact tourism in the region</p>	<p>2 and ESA-3 should be retained despite opposition from the States. To retain the ecological integrity of the eco-sensitive regions there should be zonation</p>	<p>(a) Moratorium on new clearance for mining, red and orange category of industry, thermal and nuclear power plants, artificial prawn cultivation, ports, marine sports/sea world projects, three to five star tourism, five star holiday resorts, tourist townships such as LAVASA, farm houses that lead to privatization of beaches, hill-slopes; hill tops and highways that disturb the sensitive ecosystems of hill ranges and sea fronts - mangroves, wetlands, breeding ground for fish, habitat of sea creatures, birds, animals, etc.</p>
<p>Exact demarcation of sensitive areas. Broad regions like Taluks etc cant be used as benchmark at all.</p> <p>The panel has over simplified the task of demarcating areas within the Western Ghats by describing the ecology of the Western Ghats and</p>	<p>Decommissioning of projects – If the ecosystem benefits is found to be more than the benefits from power generation, such projects to be recommended for phased decommissioning / alteration in reservoir operations to allow more flows for the ecosystem.</p>	<p>A Guidance Manual with globally harmonised protocols must be in place before addressing environmental and ecological issues pertaining to Western Ghats Region</p>	<p>The WGEEP recommendations tantamount to the total transformation of the predominant agriculture based economy by declaring the entire area as an Ecologically Sensitive Zone(ESZ-1).</p>	<p>We the people of Ratnagiri District appeal to the Ministry of Environment and Forest to ensure that the proposed refinery of HPCL, a reputed Public Sector Company of Government of India is allowed to be constructed. In case of the policies of the Government of India deprive us of such an economic</p>	<p>The ESZ Notification defined by the report should be immediately implemented. Carry out a radical reform of Environmental Clearance process through [a] assigning preparation of EIA statements to a neutral competent body that does not depend on payment by project proponents [b] making mandatory periodic environmental clearance requirement, preferably every five years [c] make mandatory the preparation of regional Cumulative EIA Analysis..</p>	<p>Rapid change in land use pattern, unchecked urbanisation resulting in increased demographic pressures and a proliferation of tourist resorts and villa complexes are issues which have rightly been recognised and addressed in the WGEEP Report. I hereby request that the WGEEP Report should be totally implemented without any change for the national interest. Make mandatory the</p>
<p>(b) Cancellation of all the proposed thermal power projects in Ratnagiri and Sindhudurg districts of Maharashtra (c) Cancellation of Jaitapur Nuclear Power Park at Madban (Rajapur taluka, Ratnagiri</p>						

<p>by using readily available data, impressions gained through field visits etc. The panel has inappropriately designated whole of Western Ghats as Ecologically Sensitive Area (ESA)</p>				<p>development of the region, we request the Government of India to consider compensating us suitably for the lack of industrial development and related backwardness of the region.</p>	<p>preparation of regional Cumulative Environmental Impact Assessment The recommendations made by the WGEEP for Ratnagiri and Sindhudurg districts must be accepted</p>	<p>district, Maharashtra) (d) Withdrawal of mining licenses in Goa and Ratnagiri-Sindhudurg districts of Maharashtra (e) No permission to industry and other commercial activities till satisfactory completion of carrying capacity analysis for Ratnagiri and Sindhudurg districts of Maharashtra.</p>
<p>The spatial database is compiled into 2200 spatial grids of 9km * 9km i.e for an area of 81 sq. Km or 8100 hectares. This is a large area and may have within it considerable variation in ecological characteristics.</p>	<p><i>Wind power - decommission-possible to construct dam</i></p> <p><i>The proposal for no new hill stations is a harsh recommendation</i></p>	<p>Some further areas could be notified as ESAs. The final report should leave scope for further additions to the ESA list.</p> <p>Cumulative Impact Assessments (CIA) of projects should be carried out irrespective of the outcome of the WGEEP report.</p>	<p>Do not support the proposal of phasing out the use of mild chemical fertiliser, pesticides and weedicides so as to shift to organic farming.</p> <p>If the recommendations of the WGEEP are implemented in the present form, it will have adverse impact on the plantation industry.</p>	<p>Suggestions should be made on climate change mitigation/adaptation.</p>	<p>The Government's should give top priority to the establishment of WGEA (Western Ghats Ecology Authority) and give all necessary powers and funds for its operation.</p> <p>Establishment of WGEA is important. Otherwise 'business as usual' will continue.</p>	
<p>The report does not provide relevant data on diversity indices with the help of which one can understand and appreciate biodiversity in a quantitative manner.</p>	<p>Infrastructure developments with in plantations like roads, footpaths, labour lines , go-downs, residence for workers and growers, tanks for storing water, processing ,sprinklers, drip irrigation and other plantation</p>	<p>The terms of reference to WGEEP were to operate within Environment (Protection) Act,1986. The terms of reference have not asked the Panel to recommend new norms / guidelines for the Western Ghats which are different from the norms / guidelines applicable for</p>	<p>On coffee plantation - No agricultural or plantation crop in the world can accommodate the degree of biodiversity that the Indian Coffee Plantation accommodates.Hence it is the WGEEP recommendations are absolutely inadequate.</p>	<p>The report uses highly technical and scientific language. MoEF should bring about a shorter version of the report in a simpler manner.</p>	<p>Cumulative Impact Assessments (CIA) of projects and Carrying Capacity Study is necessary.</p> <p>Regional Cumulative Environmental Impact Analysis should be made mandatory.</p>	

<p>The Contents of the instant WGEEP report are inadequate in dealing with techno legal matters</p>	<p>activity and roads for access to plantations to transport men and materials be allowed.</p>	<p>the entire country.</p>	<p>It is common knowledge that if fertilisers, pesticides and weedicides are phased out and organic cultivation is practised, the yield from coffee plantation will get reduced by 30 % to 40 %.</p>	<p>The Pronab Sen Committee report and the WGEEP Report both highlight the inadequacy of the database. Measures need to be taken to systematically map and record such information on ecological characteristics. Since this is a long drawn process, it can proceed in parallel to the implementation of the recommendations</p>	<p>It is in the National Interest to accept the WGEEP Report in order to protect and preserve the Kodagu landscape that provides almost fifty percent of total inflow into the Cauvery.</p>	
<p>Any restriction on development of infrastructure like roads, railways, airports and power in the region - should be opposed.</p>	<p>Panel wants WGEA to exercise control on land use planning, regulate development and formulate its own building code. Constitutionally these powers are within the purview of the state governments. Any attempt to transfer them to the WGEA will amount to distrusting the state and transgressing the state's powers.</p>	<p>Terms of Reference should be a part of this report. This would enable successors to understand what their predecessors thought about the completion of the study of biodiversity and evaluation of actual level of ecological sensitivity</p> <p>The WGEEP have made recommendations for sustainable development without any clarity as to what is sustainable development. The MoEF</p>	<p>The WGEEP recommendations of not supporting large scale tourism are rational. The proposal to ban railway lines and express ways is also a rational suggestion. The recommendation to phase out Plastics is positive but should be subject to the Plastic Act and rules prescribed by the MoEF.</p>	<p>Reform in Environmental Clearance is necessary as EIA reports prepared by the project proponents are often incomplete and lack vital information. EIA reports reflect lack of understanding about the local ecological issues, land use practices and socio-economic concerns. Make periodic environmental clearance, preferably every five years.</p>	<p>The WGEEP recommendations of not supporting large scale tourism are rational. The proposal to ban railway lines and express ways is also a rational suggestion. The recommendation to phase out Plastics is positive but should be subject to the Plastic Act and rules prescribed by the MoEF.</p>	
<p>WGEEP must revisit the demarcation issue. As the ESA ranking (Tables 2 & 3) suffer from oversimplification and arbitrariness on two counts namely setting of scores and subsequent evaluation based on these scores.</p>	<p>Coffee effluent systems already exist in ESZ1 and ESZ2 and growers are using them since several decades as per norms prescribed by the PCBs. The effluent generated are organic and nontoxic or hazardous. Hence waste processing units should be permitted in ESZ1 and ESZ2 also.</p>	<p>development. The MoEF</p>		<p>The report should be translated in all regional languages and disseminated to all Gram Sabhas and Ward Sabhas to obtain feedback to arrive at appropriate decisions in a down-top fashion and to initiate strong measures in order to address the issues of deficit in environmental governance as</p>	<p>Reform in Environmental Clearance is necessary as EIA reports prepared by the project proponents are often incomplete and lack vital information. EIA reports reflect lack of understanding about the local ecological issues, land use practices and socio-economic concerns. Make periodic environmental clearance, preferably every five years.</p>	

<p><i>SD concept ignored - steep slopes exceeding 30 degrees should not be used for cultivation</i></p>	<p>The TORs for the WGEEP do not state or ask the Panel to examine decommissioning of dams or thermal projects. The Panel exceeded their brief by making these recommendations.</p>	<p>All the environmental clearances granted for new projects in the Western Ghats since the formation of the WGEEP where work has not commenced should be reviewed.</p>	<p>Report does not say much about the existence or otherwise of certain keystone species which are to be preserved and protected during and after any developmental venture within the area of Western Ghats.</p>	<p><i>Debt for nature, Heritage Status, Forest Hydrology</i> The concept of "conservation service charges" as an incentive for the maintenance of natural vegetation and green cover is welcome.</p>	
<p><i>The ecological study methodology is flawed - it is based on secondary studies - definition of landscape ecology - criteria not been discussed -</i></p>	<p>The envisaged authority to administer and manage the Western Ghats should be a Public-Private Partnership model with the modalities of ownership structured to be entirely transparent</p>	<p>The envisaged authority to administer and manage the Western Ghats should be a Public-Private Partnership model with the modalities of ownership structured to be entirely transparent</p>	<p>The recommendations in the report have been made beyond its 'Terms of Reference'</p>	<p>The Zoning, which is essential for deciding development plans and conservation areas in various parts of the Ghats, is quite well thought of. The Zoning proposed in the Gadgil Report is totally different from that of Ecologically Fragile Areas declared by the forest Department.</p>	
<p><i>Methodology for defining the boundaries of the Western Ghats is questionable - 500/150 meters? - redefined</i></p>	<p>The WGEEP was not clear in its report on the methodology for determining when dams should be decommissioned. The HLWG should accept dam decommissioning in principle and either spell out the methodology for determining it or recommend that MoEF does it.</p>	<p>The WGEEP was not clear in its report on the methodology for determining when dams should be decommissioned. The HLWG should accept dam decommissioning in principle and either spell out the methodology for determining it or recommend that MoEF does it.</p>	<p>Samples taken for making sweeping recommendations are too small. In some cases these samples are managed due to high profile stature of some WGEEP members.</p>	<p>It is appreciable that the report offers / recommends compensation to farmers during transition period from chemical to organic period.</p>	

<p><i>The zoning system is based on relative and not absolute values</i></p>		<p>To ensure that Master Plans are prepared in a time bound manner, SPVs should be set up with representatives from nodal departments of the state government and NGOs, CSOs and experts from civil society.</p> <p>The report should have reviewed existing governance mechanisms in 6 states and districts and recommend methods and ways of improved governance for smoother implementation and functioning of the WGEA, SWGAs, DECs.</p>		<p><i>The report should be rejected - confirm the taluks in the WG</i></p>	<p>The most important point in the report is that the recommendations are tenetative and flexible; final decision for deciding the borders of the ESZs and the activities to be undertaken in each is left to the local communities and the Panchayat, adhering truly to the provisions of the Panchayat Raj.</p>
<p><i>The grid size used was very large - Generalisation of the entire WG</i></p>		<p>The MoEF needs amend the Environmental Impact Assessment Notification</p> <p>The WGEA, SWGAs ,DECs, should have been mandated to identify, delineate and draft the notifications for various ESZs in the states.</p> <p>The WGEA, SWGAs ,DECs, should have been mandated to identify, delineate and draft the notifications for various ESZs in the states.</p> <p>The WGEA should only be constituted if it can be given adequate powers, infrastructure and</p>		<p>The WGEEP Report has not made recommendations that amount to policy making.</p> <p>The Group has not obtained free, informed consent of the stakeholders and have imposed conditions that are impossible to comply with.</p>	<p>The following features of the report, need to be endorsed : 1) A building code suggesting eco-friendly constructions (2) Water harvesting systems in all the houses .3) Decentralised water resource community management system at community level (4) Non-conservation of forest land for any other land use (5) Non conservation of agricultural land to any other land use (6) Banning mining and quarrying in Zone 1 (7) Steps to be taken to improve river flow and reduce pollution levels (8) Suggesting measures for growing fodder for cattle (9) Providing support for biogas in the</p>

		<p>resources.</p> <p>Rather than it be a mandate of WGEA, all ESZ notifications issued by MoEF should mandate that the Master Plan shall state how MGNREGA, PESA, positive incentives etc. will be used to implement the Master Plan. It is for the state government and not WGEA to decide how MGNREGA are to be implemented.</p> <p>The HLWG must consult expert dam engineers, thermal power plant engineers, water resources engineers, etc. before taking a view on these technical matters.</p>		<p>houses and (10) Most importantly the need for going in for solar power for all domestic requirements..</p>	
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Annexure 6: Statement of Major Comments of the Six State Governments on the Sectoral Recommendations made in the WGEEP Report

No	Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
1	Mining Complete ban on mining in ESZ 1	Government of Karnataka is not giving fresh permission for mining in Western Ghats of Karnataka (as per their presentation in Bangalore)	Not acceptable <ul style="list-style-type: none"> Mining of site specific minerals such as bauxite and iron may be considered outside forest areas and Protected Areas with strict mitigation measures Complete ban on mining including lateritic stone mining done at local level for construction of houses would lead to unrest. Mining of stones/sand which are non-site specific may be banned 	<ol style="list-style-type: none"> Acceptable subject to laws and rules governing these matters and the interim order of Hon'ble SC dtd 27.2.2012 in SLP No. 729-731/2011 and pursuant direction of MoEF and the final decision of the SC case. The state does not have sizeable deposit of major minerals and mines hence they should be allowed to sustainable utilize its natural resources in an environment friendly manner. The state would separately submit a special scheme for regulation of mining especially quarries and sand mining in SC seeking special consideration and diluted EIA procedure in view of lesser scale and extent 	WGEEP has proposed 30 % of geographical area of state as ESZ 1 around the Pas. This area has working mines, according to WGEEP existing mines should cease functioning by 2016. If mining needs to be closed down in Goa an adequate perennial compensation of Rs. 1800 crores should be given to the state from the Centre. This amount includes Rs 1400 crores as revenue from mining and Rs 360 crores as income of 1,20,000 work force in the mining sector.	No additional implication for the state. Incidents of mining in Western Ghats is negligible. HACA has been constituted by the states. Applications for mining are examined both by HACA and under provisions of EIA, 2006.	Recommendation of WGEEP to have blanket ban on mining cannot be agreed to. All these have to be in the context of livelihood needs, scope of permissibility, essential needs of socio-economic development without compromising ecological and environmental balance.

Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat	
2	Non conventional energy – Wind energy etc. No large scale wind power projects in ESZ 1	NSC	Complete prohibition of wide energy in ESZ1 areas would be counter productive because sites of windmills are highly site	No large scale wind power projects in ESZ 1 is not acceptable.	NSC	Wind power is green power. Due to high speed winds at higher altitude	Alternative energy projects like solar and wind energy can be taken up as source of green

			specific. It would be appropriate to propose prohibition in case of forest land and wildlife sanctuaries			wind power needs to be promoted.	energy
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Sector / Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
3 Quarry and sand mining <i>No new licenses to be given for quarry and sand mining in ESZ 1</i>	NSC	A complete ban on quarrying of sand, stone, morrum, soil should be rejected. It may be noted that Financial viability of water resources would be effected if sand is required to be brought from far away sites Existing as wells as new quarries and sand mining should be allowed with environmental impact mitigation measures	Covered under interim order of Hon'ble SC dtd 27.2.2012 in SLP No. 729-731/2011 and pursuant direction of MoEF and the final decision of the SC case. The state would separately submit a special scheme for regulation of mining especially quarries and sand mining in SC seeking special consideration and diluted EIA procedure in view of lesser scale and extent	NSC	No additional implication for the state. Incidents of mining in Western Ghats is negligible. HACA has been constituted by the states. Applications for mining are examined both by HACA and under provisions of EIA, 2006	Recommendation of WGEEP to have blanket ban on mining cannot be agreed to. All these have to be in the context of livelihood needs, scope of permissibility, essential needs of socio-economic development without compromising ecological and environmental balance.

Sector / Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
4 Land use <i>1. No change in land use in ESZ areas</i> <i>2. Special Economic Zones should not be permitted</i> <i>3. New Hill stations</i>	NSC	Recommendation on no change of land use in ESZ areas is not agreed to by the State Government as this would affect landuse change for all infrastructure projects in future The State Government submits that hill stations in the Western	Acceptable subject to relevant provisions of law for the time being in force The land use pattern in the 3 zones except that in forested areas is residential and regulating any such areas as no go areas cannot be thought	NSC	-The existing framework prohibits diversion of water courses and water bodies for any other use except in the rarest of rare cases. -The existing legal	NSC

	should not be allowed 4. Public lands should not be converted to private lands		Ghats should not be banned	of. Existing legal set up does not permit such conservation of forest lands. However, where law allows Legally permitted conversion of forest land should be allowed in conformity procedure laid down		provisions like the Environmental Protection Act are sufficient. -A blanket ban on new hill station is not acceptable. -Assignment of public land to poore in the region need not be banned.
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	Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
5	Transport <i>No new railway lines and major roads, except where it is highly essential(as perhaps, in case of Goa), and subject to EIA, strict regulation and social audit in ESZ1 and ESZ 2.</i>	NSC	Prohibition of new railway lines, new highways and major roads in ESZ1 areas cannot be agreed to <ul style="list-style-type: none"> Development of transport infrastructure important for port sector development. Transport infrastructure development is important for connectivity of economic centres Recommendation not conducive for port sector As transport sector is closely connected with power sector this recommendation is not conducive for power sector 	Railway projects are outside the purview of prior Environmental Clearance. Restrictions on vital transport infrastructure to be imposed in WG region is unacceptable	NSC	Highways Department does not undertakes any new formation/extension of existing roads/construction of express way.	Recommendation like no railway lines cannot be accepted in a blanket manner. All these have to be in the context of livelihood needs, scope of permissibility, essential needs of socio-economic development without compromising ecological and environmental balance.

	Sector / Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
6	<p>Power/Energy including Hydropower No new thermal power plants IN ESZ 1</p> <p>New small hydropower projects (10 MW and below) are permissible in ESZ 1</p> <p>Allow run of the river schemes with maximum height of 3 m in ESZ 1</p> <p>Dams and thermal projects that have crossed their viable life span (for dams the threshold is 30-50 years) to be decommissioned in phased manner in all ESZs</p>	<p>The State of Karnataka has already entrusted an 'Ecological Carrying Capacity study of the Western Ghats in Uttara Kannada District' being conducted by the Indian Institute of Science, Bangalore for which a budget of Rs. 40 lakhs is already placed at the disposal of IISC, Bangalore. The recommendations of this study will be taken on board while considering projects in this region.</p>	<p>The state would be put to irreplaceable loss in terms of power generation capacity if hydropower projects are not allowed in ESZ. Hence, the State Government objects to this recommendation</p> <p>Restrictions on dam height is without logic and should be rejected. Hydropower projects have optimal sizes for techno-economic feasibility should be allowed within existing legal framework</p> <p>Hydropower is renewable, non-polluting and environment friendly</p>	<p>The embargo on new hydro electric projects and the conditions imposed are unacceptable</p> <p>The rationale for limiting the capacity of power projects in ESZ 1 and ESZ 2 areas have not been given.</p> <p>Recommendation of Decommissioning of dams and thermal power projects that have crossed viable life span is unacceptable</p> <p>No diversion of streams and rivers allowed for power projects - unacceptable in respect of hydel projects inside the state</p>	NSC	<p>The recommendation that no hydropower projects be allowed in ESZ is objected to.</p> <p>Decommissioning of dams and power projects should not be allowed.</p>	<p>The recommendation of WGEEP to have blanket ban on energy projects cannot be agreed to.</p>

Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
<p>7</p> <p>Power/Energy</p> <p>No forest clearance or stream diversion for new projects in ESZ 1</p> <p>No diversion of streams/ rivers allowed for any power projects and if already existing, to be stopped immediately in all ESZs</p>		<p>Total 32 talukas in Maharashtra come under ESZ – 1. While Karnataka and Kerala have 26 and 15. Maharashtra will therefore be most adversely affected.</p> <p>The recommendation of No new thermal power stations is drastic for a state which has a deficit of about 4000 MW. Hence is objected to.</p> <p>Recommendation on decommissioning of dams and thermal power plants that have crossed their viable life span needs to be rejected</p> <p>Recommendation on dam operation, conversion of landuse and stopping of stream diversion for power projects is not acceptable</p>			<p>No thermal power plants function in Western Ghats region. Hydro electric power and solar power is already being encouraged. Tamil Nadu Energy Development Agency (TEDA) is already developing non-polluting sources of power.</p> <p>If hydroelectric power generation is objected, it will be detrimental to the development of the country.</p> <p>Wind power is green power and due to availability of high speed wind at higher altitude, wind power needs to be promoted. All the power generation works are carried out will full consideration to the environmental conservation.</p>	

8	Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
	Water Sector Irrigation and inter basin diversion	NSC	<ul style="list-style-type: none"> The recommendation that interbasin diversion of rivers in Western Ghats should not be allowed is strongly objected by the state Interbasin diversion of water should be allowed for human development within the framework of existing laws from water surplus basin to water deficit basin . 	The recommendation that interbasin diversion of rivers in Western Ghats should not be allowed is unacceptable. Such an embargo would be unnecessary and discriminatory.	NSC	. Inter basin diversion works wherever contemplated, are being examined with full environmental concern This recommendation contained in the report would impact existing dams and transbasin diversion proposals .	NSC

	Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
9	Water	<p>The following recommendations are acceptable to Government of Karnataka:</p> <ul style="list-style-type: none"> • Protect high altitude valley swamps • Rehabilitation of mined areas eco-restoration of the forest fragments between the tea and coffee estates and revive hill streams. • catchment area treatment plans • Water conservation measures should be adopted through suitable technology upgradation and public awareness programs. • Reconnect children and youth to rivers and water resources through basin level education programs. 	NSC	<p>The following recommendations are acceptable to Government of Kerala:</p> <ul style="list-style-type: none"> • Decentralized water resources management plan at Local Self Government Level . • Protect high altitude valley swamps and water bodies • Catchment area treatment plans of hydroelectric and major irrigation projects should be taken up to improve their life span • Improve river flows and water quality by scientific riparian management programmes involving community participation. • Water conservation measures through suitable technology upgradation 	NSC	<p>Decentralized water resources management plan at local level is under examination.</p> <p>Protection of high altitude valley swamps , catchment area treatment and improved river flow, water conservation measures and water quality are under implementation</p>	NSC

Sector / Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
10 Polluting Industry (Red /Orange) <i>No new red and orange category industries in ESZ1 and ESZ 2 areas; for existing industries switch to zero pollution by 2016</i>	NSC	Restriction on new industry <ul style="list-style-type: none"> 37 MIDC areas fall under ESZs as per WGEEP if complete ban on red and orange industry is imposed, the whole of Lote MIDC would be closed. Hence this recommendation is objected to It is suggested that stringent pollution control norms should be imposed and monitored scrupulously instead of complete ban 	Not acceptable in the case of hospitals and hotels. In the case of existing industries they can be made to comply with stringent pollution abatement norms as per effluent/ emission standards as per EP rules	NSC	-The siting of polluting industries in ecologically sensitive areas and areas adjoining forests is already governed by the provisions of the EIA notification, which is considered adequate. -The state implements the Zero Liquid Discharge (ZLD) Policy	NSC
11 Forestry: Government Lands	Comments of Karnataka Recommendation with regard to Forest and Biodiversity are all acceptable to the Karnataka Forest Department.	Comments of Maharashtra Forest Rights Act to be implemented in true spirit Community forest provisions under FRA to replace all current JFM programmes Acceptable subject to continuance of JFM, and national environment and forest policies	Comments of Kerala Forest Rights Act to be implemented in true spirit Community forest resources provisions under FRA to replace all current JFM programmes Acceptable subject to continuance of JFM, and	Comments of Goa NSC	Comments of Tamil Nadu - Provisions of FRA,2006 is in the process of being implemented through the Tamil Nadu	Comments of Gujarat NSC

		<p>KFD has been proactive in the implementation of the FRA as is evident from the progress achieved in the State. Out of the 1,63,038 applications received by the Forest Rights Committee (FRC), 1,62,743 have already been disposed.</p>		<p>national environment and forest policies</p> <p>No monoculture plantation of exotics, No weedicide/ pesticide application, Extraction medicinal plants with strict regulation, Encourage planting of endemics, Acceptable subject to the contractual obligations of forest department with time frame for removal of the planted introduced species</p>	<p>Tribal Welfare Department, which is the Nodal Department. -No monoculture plantations are raised on forest lands. - Pesticide/ weedicide application not permitted including extraction of medicinal plants</p>	
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	Sector / Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
12	<p>Forestry: Private Lands <i>Recognize rights of all small scale traditional private land holders under FRA</i></p> <p><i>Introduce incentive payments for maintenance of natural vegetation as also for switch over from annual crops to perennial crops on slopes</i></p>	NSC	NSC	<p>Acceptable</p> <p>Acceptable subject to conservation of traditional farming practices of indigenous varieties and rice and with the incentives and subsidies and all other conveniences that are being extended to cash crops being equally made available to farmers adopting eco-friendly traditional cultivars, as a special scheme of the Government of India</p>	NSC	Incentivisation can be considered as a promotional effort to preserve the existing natural vegetation in private lands	NSC

Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
13 Agriculture	<p>The following recommendations are acceptable: Landscapes planning in select regions /locations: Discontinue the use of weedicides: Phase out the use of insecticides and fungicides: Encourage use of organic manures: Financial support to organic farmers: Agro-biodiversity conservation and crop improvement: Make the Western Ghats free of Genetically Modified crops, trees and animals: Awareness building: Educating children about organic and ecological farming and their role in conserving the biodiversity of the Western Ghats: Forest corridors: Forest patches within and along the streams in the plantation: Community forestry: Tribal farming: Research: Subject to the condition that Central Government agrees to provide the required subsidies to the farmers in the Western Ghats areas for the financial loss that they may suffer, as suggested in the report.</p>	<p>Recommendation of giving incentive to farmers for shifting from seasonal crops to local tree crops/fruit crops is welcome. Government of India should provide incentives to farmers to undertake the shift.</p>	<p>Promotion of organic agricultural practices is acceptable subject to timeframe for shifting from conventional agriculture to organic Government of India should provide special budgetary support for organic farming. Inventivization for carbon sequestration shall be included in the national action plan for climate change Phasing out of agricultural chemicals is acceptable subject to time frame and supply of quality inputs and only in selected farming areas. Government of India would provide necessary incentive and subsidies for farmers to convert to organic. Availability of quality inputs shall also be ensured.</p>		<p>Organic farming is encouraged. The State is in the process of drafting an 'Organic farming Policy' State encourages the use of bio-pesticides to slowly phase out the use of chemical pesticides/weedicides. Phasing out will be a slow process</p>	
14	<p>Tourism Ecotourism policy of MoEF refined by the WGEA to promote minimal impact</p>	<p>NSC</p>	<p>Comments of Kerala Strict regulation of tourism as per tourism master plan and social audit</p>	<p>Comments of Goa NSC</p>	<p>Comments of Tamil Nadu Ecotourism policy of MoEF Already implemented</p>	<p>Comments of Gujarat NSC</p>

	tourism in the region in ESZ1 Strict regulation on basis of a Tourism master plan and social audit in ESZ 2 & 3 .	refining the Eco Tourism Policy of MOEF by WGEA. The Karnataka Forest Department agrees to follow the Eco Tourism Policy approved by MOEF.		Acceptable safe tourism practices are to be enforced inside sanctuaries making the ecotourism spots in forests more eco-friendly rather tourist friendly		from December 2012.	
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	Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
15	Biodiversity Introduce incentive payments as ,conservation service charges' for maintenance of sacred groves; <ul style="list-style-type: none"> • for maintenance of biodiversity elements on private lands, • lands under control of Biodiversity Management Committees, • JFM lands, and • lands assigned as Community Forest Resources Make special funds available to Biodiversity Management Committees for disbursal in relation to wildlife related damage	NSC	NSC	Acceptable subject to devolution of funds to the State Environment Department by MoEF for these purposes.	NSC	No incentive is paid but sequestration is encouraged	NSC

Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
16 Waste Treatment <i>No hazardous or toxic waste processing unit is ESZ 1 and ESZ 2 areas.</i> <i>Local Authorities to be made responsible for developing regional systems for handling hazardous toxic, biomedical wastes as well as recyclable materials</i>	NSC	NSC	Acceptable in case of toxic and hazardous industrial wastes Extended producers responsibility shall be enforced more strictly as a general condition in respect of such wastes as provided in the rules. Individual units/waste producers would be made responsible for development of regional system local bodies would act as facilitators especially for providing land for such facilities.	NSC	NSC	NSC

Sector /Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
17 Building codes consisting of green technology and green building materials	NSC	NSC	A building code exclusively for the Western Ghats region is uncalled for. Uncalled for as a limiting condition for Western Ghats area only	NSC	NSC	NSC

Sector / Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
18 Across the Western Ghats	Genetically modified crops should not be allowed – Acceptable	NSC	<p>Genetically modified crops should not be allowed – Acceptable, subject to state policy on permission for GM Crops</p> <p>Phase out the use of plastic bags in shops, commercial establishments, tourist spots, on a priority basis (Not more than 3 years) – Plastic management to be Recycled Plastics (Manufacture & Usage Rules)</p>	NSC	NSC	NSC

Sector / Issue	Comments of Karnataka	Comments of Maharashtra	Comments of Kerala	Comments of Goa	Comments of Tamil Nadu	Comments of Gujarat
19 Animal Husbandry <i>Introduce incentive payments for maintenance of land races of livestock;</i> <i>Redeploy subsidies for chemical fertilizers towards maintenance of livestock and production of biogas and generation of organic manure;</i> <i>Restore community grasslands and forest grazing lands outside the Protected Areas.</i> <i>Breeds which can withstand adverse agro climatic conditions should be encouraged</i> <i>Application of weedicides in cash crop areas alongside the roads must be prohibited, unused land in tea estates should be used for cattle rearing and the organic manure thus produced used for tea plantation</i>	NSC	NSC	Acceptable To be adopted in all areas under organic farming Acceptable Acceptable.	NSC	NSC	NSC

20	<p>Area treatment/plot development/landscaping in the open areas of plots</p> <p><i>Certain recognized best practices of construction and development such as topsoil conservation, tree conservation should be followed as per green building certification etc.</i></p> <p><i>The area to be paved may be restricted such that there is no change in run off/permeability of the plot (if some area is paved recharge from other areas will have to be enhanced -</i></p> <p><i>Certain activities for example filling of marches/wetlands, introduction of alien invasive species are not permitted.</i></p>	NSC	NSC	<p>–</p> <p>Acceptable subject to local conditions</p> <p>Acceptable subject to the existing state legislations</p> <p>– There is an urgent need to focus on destruction of invasive alien species in the state to ensure conservation of native diversity</p>	NSC	NSC	NSC
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Annexure 7: Statement of the Comments Received from the Central Ministries

S.No.	Central Ministry	Comments
1.	Ministry of Rural Development Department of Land Resources (DoLR)	The Department of land resources implements three major area based programs namely, Drought Prone Areas Programme, Desert Development Program and Integrated Wastelands Development Program. Since the recommendations contained in the Report of WGEEP do not clash with Watershed Management Program , DoLR has no objection to the demarcation of Western Ghats into Ecologically Sensitive Zones and guidelines prescribed for preservation of biological diversity of the area.
2.	Ministry of Tourism	The recommendations made by the WGEEP are similar to the Ministry of Tourism’s Sustainable Tourism criteria approach. The Ministry hence agrees with the recommendations made in the report. A special cell may be constituted in the Western Ghats Ecological Authority with one representation from the Ministry of Tourism.
3.	Ministry of Agriculture , Department of Agriculture & Cooperation (DAC)	<p>There is no risk to the ‘Western Ghats biodiversity’ due to the cultivation of the current GM Bt-Cotton hybrids. There is hence no reason whatsoever to enforce a restriction on cultivation of Bt Cotton in the Western Ghats, especially since there is no perceived threat to any form of biodiversity of tetraploid cotton species or related tetraploid wild species present in the Western Ghats. A blanket ban on Bt Cotton in Western Ghats with an unreasonable pretext of ‘threat to biodiversity’ is not backed by scientific principles or research and is thus inappropriate.</p> <p>On the suggestion to discontinue the use of weedicides – DAC in all its crop development programmes encourages mechanical sowing, line transplanting etc which are conducive to mechanical weeding.</p> <p>On the suggestion to phase out the use of insecticides and fungicides – DAC emphasizes alternative tools for pest management such as cultural, mechanical methods use of bio control agents and judicious and need based use of pesticides.</p> <p>On the recommendation for community forestry – DAC supports community forestry which will help in availability of fodder, fuel wood and biological residue for manure preparation. Agro forestry and afforestation are eligible components under watershed programmes to promote such activities.</p> <p>On the suggestion to promote marketing of organic agricultural produce – Development of marketing for organic</p>

		produce in India is in nascent stage, hence, it requires promoting formation of Farmers/ Producers Group or cooperatives to collect and add primary value to produce to make it quantity and quality-wise marketable.
4.	Ministry Of Power	<p>Regarding Thermal Projects - The WGEEP may review the recommendations in regard to location of thermal power plants especially for 3 <i>taluks</i> viz Honavar, Ankola and Kumta of Karnataka. These <i>taluks</i> have been identified in a report by Central Mines Planning and Design Institute Ltd. (CMPDI), by taking into account availability of land, sea water, infrastructure facilities, R&R issues and environmental aspects.</p> <p>Regarding Hydro Projects – The recommendation that Dams and Thermal projects that have crossed their viable life span (for dams the threshold is 30-50 years) should be decommissioned in phased manner, is worth considering. The recommendation that there should be no diversion of streams/ rivers for any power projects and if already existing to be stopped immediately will hamper the hydro development in the country. Instead of putting a blanket ban the merits and demerits of individual projects may be examined and the decision should be taken on a case to case basis.</p> <p>Status of Athirapally HEP – The MoEF had earlier accorded environmental clearance during July 2007 but subsequently issued notice to Kerala State Electricity Board (KSEB) on issues regarding effect on Tribals and Biodiversity. The matter is under correspondence between MoEF & KSEB.</p> <p>The Athirapally and Gundiya HEP are in advanced stage of development. Stopping these projects would further hamper the development of HydroPower.</p> <p>It is suggested that decision on these projects may be reviewed and comments of concerned state Government may also be obtained.</p>
5.	Ministry of Commerce and Industry	<p>The recommendations on agriculture sector will have direct impact on the plantation sector crops in the Western Ghats region. Practicing organic farming over the entire area and phasing out all chemical fertilizers, pesticides, fungicides would make plantation crops unviable as there will be substantial decline in productivity of plantations.</p> <p>Coffee cultivation in the Western Ghats is not going to affect the biodiversity, flora and fauna of the region or is polluting the environment as feared in the Report.</p>

		<p>Western Ghats accounts for 80% pepper produced in India. If the Report is accepted, pepper cultivation has to be brought under organic system and there would be no reliable organic methods to control foot rot disease.</p> <p>If the recommendations of Gadgil Committee are accepted, species indigenous to India like cardamom,pepper and some of the tree spices might suffer heavily, which will adversely affect our spices trade.</p> <p>Going 100% organic may not be practical/logical.It may be impractical and dangerous.If 100% of the plant nutrients should come from organic sources alone it will be enormous and inaccessible. Natural rubber produced with 100% organic materials will not attract any price premium.</p> <p>Similarly, the recommendations about GM, no cultivation beyond certain slopes is not logical.</p>
6.	Ministry of Railways	<p>The Ministry fully shares the need for strict regulations and social audits before permitting ne development in the Ecologically Sensitive Zone 1,2 & 3 .</p> <p>A total of 5 rail projects are listed in the Report.Out of these, following 3 projects have been sanctioned :</p> <p>Hubli- Ankola NL(167 kms) – The Marmagao port is getting saturated and this project will facilitate movement of freight trains via alternate route.</p> <p>Banglore – Satyamanglam- Mettupalayam – This will clear passenger traffic and provide an alternate route from Banglore to Down South and it will be utilized for passenger traffic.</p> <p>Sabrimala –Angamali – Sabrimala is not connected with a rail head.This will cater to passenger traffic and also serve for pilgrimage purpose.</p> <p>Mysore – Kannur, Talguppa- Honnavar lines have not yet been surveyed yet.</p> <p>Hence no comments can be offered at this stage.</p>
7.	Ministry Of Urban Development	<p>The recommendations and action points mentioned by the Panel are very critical for maintaining the ecological balance of the region and may be adopted.</p> <p>In case of solid waste management MSW Rules published by the MoEF from time to time may be referred to for compliance in the project implementation.</p> <p>Water recharging structures need to be suggested in the</p>

		region to improve the groundwater recharge.
8.	Ministry of Steel	<p>It appears that the recommendations of WGEEP regarding moratorium on mining activities and recommendations regarding industrial and infrastructural projects (including railway lines and roads) may have negative impact on the industrial growth of the region, as these stringent provisions may not only drift away the industries from demarcated zones, but may also adversely affect development of requisite infrastructure in the region.</p> <p>This Ministry is of the view that while taking measures for ecological safeguards, for ensuring industrial and economic development of the region industries may be allowed within carrying capacity of the region/area with suitable safeguards and measures for preservation of ecology, flora and fauna.</p> <p>Iron and steel sector is one of the most important infrastructural sectors of the country, contributing significantly to overall economic growth and development of the nation. The report suggests the formation of a Western Ghats Ecology Authority (WGEA) , a statutory authority which enjoys the powers under the Environment (Protection) Act. As the Western Ghats is an extensive region spanning over six states , it is desirable that the WGEA functions in a coordinated fashion with 6 constituent State Western Ghats Ecology Authorities (SWGEA) appointed jointly by the State Governments and the Central Ministry of Environment & Forests to avoid administrative delays in environmental clearances.</p>
9	Ministry of Water Resources	<ul style="list-style-type: none"> • Not recd.
10	Ministry of Surface Transport	<ul style="list-style-type: none"> • Not recd.
11	Ministry of Mines	<ul style="list-style-type: none"> • Recd
12	Ministry of Tribal Affairs	<ul style="list-style-type: none"> • The Ministry agrees with the recommendation that the Forests Right Act must be implemented in its full spirit. Action in this regard however should be taken up by the states. • With regard to the recommendation that Community Forest Resource Provisions under FRA should replace Joint Forest Management Programs, it may be mentioned that the provisions relating to community resource management under FRA are different from those mentioned under Joint

		<p>Forest Management Programmes implemented by the MoEF.</p> <ul style="list-style-type: none">• It is suggested that an official from the Ministry of Tribal Affairs may be included as a representative in the Western Ghats Ecological Authority.• The Ministry agrees with the recommendation that the sanction for the environmental and forest clearances for the Devapon Dongar mine of the Caurem village in Quepem Taluk of Goa, against serious local opposition and without implementation of FRA is thoroughly inexcusable.
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By Speed Post

D.O. No.WLP-1011-154—F

25th March 2013

Dear Shri Tyagi,

Kindly refer to D.O. letter No.1/1/2010-RE(ESZ dated 30-8-2012 addressed to the Chief Secretary, Gujarat by Dr.K.Kasturirangan, Member Planning Commission, Gol, New Delhi regarding Specific Comments on the recommendations of the Western Ghats Ecology Expert Panel (WGEEP) constituted by the MoEF under the Chairmanship of Prof. Madhav Gadgil.

The remarks of the State Govt. on the proposed guidelines and summary of recommendation Sector-wise activities are as per Annexure-1 to this letter.

So far as constitution of the Western Ghats Ecology Authority, adequacy of existing rules and regulations and restrictions on infrastructure development are concerned, the views of the State Government are as under:

1. State Government may not ^{be} in a position to agree for creation separate authority which would become additional structure and complicate the present Environmental Clearance Procedure.
2. Under the existing Acts and Rules, there are sufficient and appropriate provisions to take care of the requirement of Permission, Prohibition, Rejection or Acceptance of Forest and Environmental matters. The recommendations of WGEEP to restrict/prohibit Railway line, Energy Projects, Mining etc. cannot be agreed in a blanket manner. All these have to be seen in the context of livelihood needs, scope of permissibility and essential needs of Social and Economic development. Non-conventional Energy projects like solar and wind can be taken up which are basically sources of green energy.

3. Primacy should be attached to the interest of local population, their needs, interdependence, livelihood etc. A Consultative mechanism at best is the right Recommendation in this direction rather than creation of a New Authority.

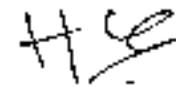
So far as taking into account the ecology panel environment: preservations is concerned while considering the developmental and livelihood issues in planning, the law of the land on this issue is the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Rights) 2006 and this Act takes adequate care of this issue.

The forest is managed by working plan, which includes reasonable coup-cutting. It has to have prior approval of the MoEF and is implemented under strict supervision of the field staff of this Department.

Because of well-developed social forestry and considerable quantity of imported timber on well-developed ports, the timber availability in the State is always surplus which has considerably reduces risk on indigenous forests

These views of the State Government may please be placed before the HLWG for further necessary action.

Yours sincerely,



(H. K. Dash)

o/c

Shri Ajay Tyagi

Joint Secretary,
Ministry of Environment & Forests,
Paryavaran Bhavan,
C.G.O. Complex, Lodhi Road
New Delhi-110 003



Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
		projects, especially assessing the cost-benefits considering ecological costs and public benefits.	Local Planning Authority before execution of projects, especially assessing the cost-benefits considering ecological costs and public benefits.		
3	Building codes consisting of green technology and green building materials	A building code should be evolved by the WGEA which include inter-alia eco-friendly building material and construction methods, minimising the use of steel, cement and sand, providing water harvesting methods, non-conventional energy and waste treatment The application or detailing of the framework would be done by local authorities to suit local conditions.			Not accepted - However, these recommendations are viewed positively but should be taken care of by existing local authorities. To be encouraged by awareness.
4	Area treatment/ plot development / landscaping in the open areas of plots	<p>Certain recognized best practices of construction/development such as topsoil conservation, trees conservation etc. should be followed as per the guidelines of Green Building certifications of Eco Housing, GRIHA or any other appropriate codes to be encouraged.</p> <p>Certain activities for example filling of marshes/ wetlands, introduction of alien invasive species are not permitted</p> <p>The area that may be paved is to be restricted; paving of ground areas may be done in such a manner that there is no change in the run-off / permeability of the plot overall before and after paving (if some area is paved, the recharge from other areas will have to be enhanced)</p>			Accepted as a general guideline to the existing authorities - These recommendations are viewed positively.

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
5	Waste treatment	Local authorities should be made responsible to for developing regional systems for handling hazardous, toxic, biomedical wastes as well as recyclable material			Accepted as a general guideline and it is already provided under the Environment (Protection) Act, 1986 and notifications there under- Under the existing laws and legal provision this is provided and may be viewed positively.
		No hazardous or toxic waste processing units	No hazardous or toxic waste processing units	Recycling and waste processing and units compliant with PCB regulations should be sited in ESZ3 areas (or outside the WG region) and should cater to nearby ESZ1	Accepted as a general guideline and it is already provided under the Environment (Protection) Act, 1986 and notifications there under - Under the existing laws and legal provision this is provided and are viewed positively.
6	Wastewater management	Mandatory for all layouts/ building developments though the choice of technology would vary with size of settlement;			Accepted as a general guideline and it is already provided under the Environment (Protection) Act, 1986 and notifications there under - Under the existing laws and legal provision this is provided and are viewed positively.

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
		Should be such as to permit, reuse, recharge, recycling as locally appropriate and permit recovery of energy where possible			Accepted as a general guideline - and it is already provided under the Environment (Protection) Act, 1986 and notifications there under. - Under the existing laws and legal provision this is provided and is viewed positively.
7	Water	Decentralized water resources management plans at Local Self Government level			Accepted as a general guideline - This should be done as per the over all water management policy of the State Government.
		Protect high altitude valley swamps and water bodies.			Accepted as a general guideline - This is viewed positively by the local authorities
		Catchment area treatment plans of hydroelectric and major irrigation projects should be taken up to improve their life span.			Accepted as a general guideline - This is viewed positively by the existing local authorities/project authorities.
		Improve river flows and water quality by scientific riparian management programmes involving community participation			Accepted as a general guideline - This is viewed positively by the existing local authorities/project authorities.

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
		Water conservation measures should be adopted through suitable technology up gradation and public awareness programmes			Accepted as a general guideline - This is viewed positively by the existing local authorities/project authorities.
		Inter-basin diversions of rivers in the Western Ghats should not be allowed			Not accepted - Instead of complete ban, the EIA should be made compulsory and the decision to be taken by existing competent authorities on case to case basis as per the findings of EIA and merits of the case.
8	Agriculture	Promote organic agricultural practices; discourage cultivation of annual crops on slopes exceeding 30%, where perennial crops should be promoted; introduce incentive payments for sequestration of carbon in soils, introduce incentive payments for maintenance of select traditional cultivars, encourage participatory breeding programmes to improve productivity of traditional cultivars; encourage precision agricultural practices, No GMOs			Accepted as a general guideline - This is viewed positively by the existing local authorities/project authorities
		Phase out all use of chemical pesticides/ weedicides within five years Phase out, through a system of	Phase out all use of chemical pesticides/ weedicides within eight years	Phase out all use of chemical pesticides/ weedicides within ten years Phase out, through a system of	Instead of complete ban these objectives may be achieved through (a) mass education programme and (b) incentives and

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
		positive incentives, use of chemical fertilizers within five years	Phase out, through a system of positive incentives, use of chemical fertilizers within eight years	positive incentives, use of chemical fertilizers within ten years	<p>alternatives. Prescribing time is not accepted.</p> <p>These are viewed positively by the existing local authorities/project authorities. However, it should be voluntary based on proper awareness programme to prevent loss or reduction in agricultural income.</p> <p>These are viewed positively by the existing local authorities/project authorities</p>
9	Animal Husbandry	Introduce incentive payments as 'conservation service charges' for maintenance of land races of livestock;			Accepted as a general guideline - This recommendation is viewed positively by the existing local authorities
		Redeploy subsidies for chemical fertilizers towards maintenance of livestock and production of biogas and generation of organic manure;			Accepted as a general guideline - This recommendation is viewed positively by the existing local authorities
		Restore community grasslands and forest grazing lands outside the Protected Areas.			Accepted as a general guideline - This recommendation is viewed positively by the existing local authorities

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
		Breeds which can withstand adverse agro climatic conditions should be encouraged			Accepted as a general guideline – This recommendation is viewed positively by the existing local authorities
		Application of weedicides in cash crop areas alongside the roads must be prohibited, since almost all plants coming under the weed category are rich cattle fodder.			Accepted as a general guideline – This recommendation is viewed positively by the existing local authorities
		The unused land in tea estates should be used for cattle rearing and the organic manure thus produced used for tea plantation.			Accepted as a general guideline – This recommendation is viewed positively by the existing local authorities. State of Gujarat does not have tea estates.
10	Fishery	Strictly control use of dynamite and other explosives to kill fish; provide fish ladders at all reservoirs			Accepted as a general guideline – This recommendation is viewed positively by the existing local authorities
		Introduce incentive payments as ,conservation service charges' for maintenance of indigenous fish species in tanks under control of Biodiversity Management Committees or Fishermen's co-operatives; monitor and control trade in aquarium fishes with the help of Biodiversity Management Committees			Accepted as a general guideline – This recommendation is viewed positively by the existing local authorities

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
11	Forestry: Government lands	Forest Rights Act to be implemented in its true spirit by reaching out to people to facilitate their claims, Community Forest Resource provisions under FRA to replace all current Joint Forest Management programmes,			Accepted as a general guideline :- This recommendation is viewed positively by the existing local authorities
		No monoculture plantation of exotics like eucalyptus; No pesticide/ weedicide application; Extraction of medicinal plants with strict regulations	No monoculture plantation of exotics like eucalyptus; Encourage planting of endemic species; Phase out pesticide/ weedicide application; Extraction of medicinal plants with strict regulations	No monoculture plantation of exotics like eucalyptus; Encourage planting of endemic species; Phase out pesticide/ weedicide application; Extraction of medicinal plants with strict regulations	Accepted as a general guideline :- These recommendation is viewed positively by the existing local authorities
12	Forestry: private lands	Recognize rights of all small-scale, traditional private land holders under FRA, Introduce incentive payments as ,conservation service charges' for maintenance of natural vegetation for small land holders, as also for switch-over from annual crops to perennial crops on steep slopes for small landholders. Introduce incentives such as tax breaks or renewal of leases as ,conservation service charges' for maintenance of natural vegetation for small land holders;			Accepted as a general guideline :- This recommendation is viewed positively by the existing local authorities

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
13	Forestry: private lands	No monoculture plantation of exotics like eucalyptus; existing plantations of such exotics should be replaced by planting endemic species or allowing area to revert to grassland where it was originally grassland. No pesticide/ weedicide application; Extraction of medicinal plants with strict regulations ; Encourage planting of endemic species	No monoculture plantation of exotics like eucalyptus; existing plantations of such exotics should be replaced by planting endemic species or allowing area to revert to grassland where it was originally grassland Encourage planting of endemic species; Quarrying with strict regulations; Phase out pesticide/ weedicide application	No monoculture plantation of exotics like eucalyptus; existing plantations of such exotics should be replaced by planting endemic species or allowing area to revert to grassland where it was originally grassland Encourage planting of endemic species in private forests; Quarrying with strict regulations; Phase out pesticide/ weedicide application	Accepted as a general guideline – These recommendations are viewed positively by the existing local authorities
14	Biodiversity	Introduce incentive payments as ,conservation service charges' for maintenance of sacred groves; for maintenance of biodiversity elements on private lands, lands under control of Biodiversity Management Committees, JFM lands, and lands assigned as Community Forest Resources			Accepted as a general guideline – This recommendation is viewed positively by the existing local authorities
		Make special funds available to Biodiversity Management Committees for disbursal in relation to wildlife related damage			Accepted as a general guideline – This should be done as per the existing norms and regulations of the Government of Gujarat and the Biodiversity Conservation Act, 2002.

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
15	Mining	<p>No new licenses to be given for mining</p> <p>Where mining exists, it should be phased out in 5 years, by 2016</p> <p>Detailed plans for environmental and social rehabilitation of mines to be closed.</p> <p>Illegal mining to be stopped immediately</p>	<p>No new licenses to be given for mining.</p> <p>This moratorium can be reviewed on a case by case basis</p> <p>Existing mining to adopt good practice mining and be under strict regulation and social audit</p> <p>Detailed plans for environmental and social rehabilitation of mines to be closed.</p> <p>Illegal mining to be stopped immediately</p>	<p>New mining may be taken up only for scarce minerals not available on the plains and should be under strict regulation and social audit, subject to free prior informed consent of tribal and other communities and in recognition of tribal rights.</p> <p>Existing mining to adopt good practice mining and be under strict regulation and social audit</p> <p>Illegal mining to be stopped immediately</p>	<p>Not accepted.</p> <p>However, these recommendations are viewed positively by the existing local authorities. There are adequate safe guard provisions under the existing acts & regulations that may be invoked case to case basis.</p>
16	Quarry and sand mining	<p>Where exists should be controlled effectively for environmental and social impacts immediately</p> <p>No new licenses to be given for quarry and sand mining</p>	<p>Upgradation possible/permitted subject to strict regulation and social audit</p>	<p>Existing and new quarry and sand mining should be under strict regulations and social audit and without affecting tribal rights</p>	<p>Not accepted.</p> <p>However, these recommendations are viewed positively by the existing local authorities. There are adequate safe guard provisions under the existing acts & regulations that may be invoked case to case basis.</p>

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
17	Polluting Industry (Red /Orange)	No new polluting (red and orange category) industries; for existing industries switch to zero pollution by 2016 and be subject to strict regulation and social audit	No new polluting (red and orange category) industries; for existing industries switch to zero pollution by 2016 and be subject to strict regulation and social audit	New industries may be set up under strict regulation and social audit.	Accepted as a general guideline – This recommendation is viewed positively by the existing local authorities. There are adequate safe guard provisions under the existing acts & regulations that may be invoked case to case basis.
18	Non-polluting (Green/ Blue) Industry	With strict regulation and social audit. Local bio-resource based industry should be promoted. All should be strictly regulated and be subject to social audit.	Promote Green/ Blue industries. Local bio-resource based industry should be promoted. All should be strictly regulated and be subject to social audit.	Promote Green/ Blue industries. Local bio-resource based industry should be promoted. All should be strictly regulated and be subject to social audit.	Accepted as a general guideline – These recommendations are viewed positively by the existing local authorities. There are adequate safe guard provisions under the existing acts & regulations that may be invoked case to case basis.
19	Power/ Energy	Educate the energy consumer about the environmental and social impacts of energy production and the need for reducing ,luxury' demand Encourage demand side management; enhanced energy efficiency across sectors Launch ,smart' campaigns as key components of demand side management, focusing on smart grids, smart buildings, smart power, smart logistics and smart motors Promote decentralized electricity, use of solar power			Accepted as a general guideline – These recommendations are viewed positively by the existing local authorities. There are adequate provisions under the existing policy, rules & regulations.

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
		<p>Allow run of the river schemes with maximum height of 3 m permissible which would serve local energy needs of tribal/ local communities / plantation colonies subject to consent of gram sabha and all clearances from WGEA, SEA and DECs</p> <p>No forest clearance or stream diversion for new projects</p> <p>Run of the river schemes not allowed in first order or second order streams</p> <p>Promote small scale, micro and pico hydropower systems, that are people owned & managed and are off grid</p> <p>New small hydropower projects (10 MW and below) are permissible</p>	<p>Small <i>bandharas</i> permissible for local and tribal community use / local self government use</p> <p>No new dams above 15 m or new thermal plants permissible</p> <p>New hydro projects between 10- 25 MW (up to 10 m ht) permissible</p> <p>All project categories subject to very strict clearance and compliance conditions through SEA and DECs of WGEA</p> <p>Have run off the river hydropower projects but after cumulative impact study of the</p>	<p>Large Power plants are allowed subject to strict environmental regulations including</p> <ol style="list-style-type: none"> 1. cumulative impact assessment studies 2. carrying capacity studies 3. minimum forest clearance (norms to be set by WGEA) 4. based on assessment of flows required for downstream needs including the ecological needs of the river <p>Existing Power plants subject to strict regulation and social audit.</p> <p>Zero pollution to be required for new thermal power plants.</p> <p>Wind projects only after CEIA</p> <p>For already existing dams reservoir operations to be</p>	<p>Not accepted –</p> <p>However, these recommendations are viewed positively by the existing local authorities on case to case basis depending on the merit of the case. There are adequate safe guard provisions under the existing regulations.</p>

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
		<p>No new thermal power plants</p> <p>Strict environmental regulation of existing thermal power plants</p> <p>Existing thermal plants to actively promote alternate uses of fly ash - such as in road making in addition to the existing practices of manufacture of fly ash bricks</p> <p>No large scale wind power projects</p> <p>Promote biomass based /solar sources for decentralized energy needs.</p>	<p>river basin is done</p> <p>Regulated wind power projects but after cumulative environmental impact assessment (CEIA)</p> <p>Zero pollution to be required of existing Thermal Power Plants</p>	<p>rescheduled for allowing more water downstream</p>	
		<p>No diversion of streams/ rivers allowed for any power projects and if already existing, to be stopped immediately</p> <p>Catchment area treatment in a phased manner following watershed principles;</p> <p>continuous non-compliance of clearance conditions for three years would entail decommissioning of existing projects</p>			

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
		<p>Dams and thermal projects that have crossed their viable life span (for dams the threshold is 30-50 years) to be decommissioned in phased manner</p> <p>All project categories to be jointly operated by LSGs and Power Boards with strict monitoring for compliance under DECs</p>			
20	Transport	<p>No new railway lines and major roads, except where it is highly essential (as perhaps, in case of Goa), and subject to EIA, strict regulation and social audit.</p> <p>Avoidance of new highways, expressways</p>	<p>No new railway lines and major roads, except when highly essential and subject to EIA, strict regulation and social audit.</p> <p>Upgradation of roads possible/ permitted subject to EIAs, strict regulation and social audit</p>	<p>Essential new roads/ railways may be allowed subject to strict regulation and social audit.</p>	<p>Not accepted –</p> <p>However, these recommendations are viewed positively by the existing local authorities on case to case basis depending on the merit of the case. There are adequate safe guard provisions under the existing policies, rules & regulations.</p>
21	Tourism	<p>Ecotourism policy of MoEF refined by the WGEA to promote minimal impact tourism in the region</p> <p>Strict regulation for waste management, traffic and water use</p>	<p>Strict regulation on basis of a Tourism master plan and social audit. Tourism Master Plan should be based on carrying capacity of area and after taking into account social and environmental costs.</p>	<p>Strict regulation and social audit</p> <p>Tourism Master Plan should be based on carrying capacity of area and after taking into account social and environmental costs</p>	<p>Accepted as a general guideline –</p> <p>These recommendations are viewed positively by the existing local authorities. There are adequate safe guard provisions under the existing regulations.</p>

Sr. No.	Sector	ESZ1	ESZ2	ESZ3	Remarks of Govt. of Gujarat after State Level Inter Departmental Discussion on 28/02/2013
22	Education	<p>Reconnect children and youth to local environment through education programmes focusing on local environmental issues, especially degradation of natural resources of land and water and air and water pollution.</p> <p>Tailor Environmental Education projects to serve as an instrument of participatory environmental monitoring involving local community members; connect such exercises to preparation of 'People's Biodiversity Registers' by the local Biodiversity Management Committees</p> <p>Students' 'River Clubs' should be encouraged in schools situated along the course of the respective river</p> <p>Teach agriculture in schools</p>			Accepted as a general guideline – These recommendations are viewed positively by the existing local authorities.
23	Science and Technology	<p>Cumulative impact assessment for all new projects such as dams, mines, tourism, and housing, that impact upon water resources should be conducted and permission given only if they fall within the carrying capacity</p> <p>Focus research on perfecting green technology and make it affordable for common people.</p> <p>Environment flow assessments indicators should be worked out by Research institutions, NGOs along with local communities</p>			Accepted as a general guideline – These recommendations are viewed positively by the existing local authorities.
24	Information management	<p>Build on the Western Ghats database of WGEEP to create an open, transparent, participatory system of environmental monitoring involving all citizens, in particular the student community</p> <p>Update and upgrade a hydrological data base of rivers and consolidate the ecological data base and information at river basin level</p>			Accepted as a general guideline – These recommendations are viewed positively by the existing local authorities.

GOVERNMENT OF MAHARASHTRA

No. FLD 2011/CR167/F-10,
Revenue & Forest Department
Mantralaya, Mumbai 400032.
Dated: 13th January, 2012.

SPEED POST

To
The Secretary,
Ministry of Environment and Forests,
Government of India,
Paryavaran Bhawan, CGO Complex,
Lodhi Road New Delhi - 110003.

Sub: Comments on WGEEP Report

Ref: Your DO letter No. 1/1/2010-RE-ESZ Dated 15th November 2011

Sir,

At the outset, the State Government appreciates undertaking the vital task of laying down guidelines for ecological conservation and sustainability of Western Ghat region.

As per the reference cited above the comments of the State Government are as under -

- 1) **Setting up of WGEA**--- The proposed mechanism will operate parallel to existing environmental agencies and can have divergent approaches. The mandate of any dispute related to environment is too ambitious and will practically cover all areas of government functioning. Therefore Government of Maharashtra takes objection on setting up of the Western Ghat Ecology Authority. WGEA from its proposed constitution, appears to be a too big an Authority. Such a heavy bureaucratic set up would lead to bottlenecks and getting clearances of various developmental projects even though they are otherwise permissible within the existing framework of laws may often find difficult to get cleared. It is felt that that setting up of such Authority with powers to grant or reject permissions with respect to development projects e.g. windmills, railways etc., will result in increased bureaucracy and permission regime conducive to corruption. Existing statutory authorities under the Maharashtra Regional Town Planning Act, Maharashtra Municipal Corporation Act and Maharashtra Land Revenue Code and the provisions contained in the Notifications under the Environment Protection Act and CRZ from time to time are sufficient to take care of various environmental concerns and should not be overseen by the proposed new authority viz. WGEA. Instead, the existing High Level Monitoring Committees functioning in the State, if required, can be further strengthened and continue to work instead of WGEA, therefore there is no need of having a separate WGEA.

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2a. Definition of western Ghats: WGEEP has attempted to define the western Ghats from an environmental angle and utilised altitude and forest area or vegetation as drivers defining the boundaries of western Ghats. The eastern edge of W Ghats is identified by forested areas that are above 500m. The rationale for this cut off followed from digital data which showed that, in general, 500 m constitutes the elevation at which WG rise discretely from the Deccan plateau. For the western edge, the cut off of forested areas at 150m is taken as Ghats follow more steeply down to the coastline. This definition has significant impact on defining the extent of Western Ghats. Only exact area delineated as per the slope and forests should be under ESZ-1 and not the entire Taluka.

2b. Administrative unit for monitoring: Earlier study of Planning commission in 1960's had identified total 132 talukas as western Ghats and a special program was undertaken for Western ghat development. No details are given in report. And therefore which defining the area under western Ghats Taluka is taken as reasonable administrative unit. All talukas which falls in the definition are taken for monitoring but in 2 groups; one, less than 50% area within WG area and other, more than 50% area within WG area. This needs to be reviewed particularly for less than 50% area within WG area.

2c. WGEEP recommends that the entire western ghat tract shall be declared as ecologically sensitive area under Environment (Protection) Act, 1986

Area categorisation for monitoring:

ESZ1 : Regions of highest sensitivity or ecological sensitive zone 1

ESZ2 : Regions of high sensitivity

ESZ3 :Regions of moderate sensitivity.

The methodology defined is complex and need to be reviewed. The ESZ1 and ESZ3 definition needs more careful review as it covers comparatively larger areas.

2 (d) Delineation of ESZ-1, with Taluka as a unit

It is not acceptable. This would mean that even the Taluka towns which may not fulfill the criteria of steep slope, forest cover will fall under the ESZ-1. Instead, the Talukas should be split and only those pockets which fulfill the criteria of ESZ-1 should be classified as ESZ-1.

3. Eco-Sensitive Zone 1 (ESZ-1)

Restrictions imposed within ESZ-1 are well intended with an objective of protecting the fragile ecosystem of the Western Ghat. However some of these appear to be ungovernable and will restrict even green or eco-friendly development of the region. Some recommendations are based on one or two field examples and not based on thorough social cost-benefit exercise. However in general all the strict recommendations of ESZ-1 may be acceptable for forest areas, protected areas and eco-sensitive zone around the protected areas.

3(a) Windmills

In respect of windmill, which is a non-conventional and green source of energy, it would be appropriate to impose prohibition in case of forest land and wildlife sanctuaries. However complete prohibition on such projects in the entire ESZ-1 area will prove to be counterproductive as sites for wind energy are very site specific. Kindly note that more than 85% of the population in the Western Ghat use fuel wood as the

cooking energy, therefore complete prohibition on such alternative source of green energy will result in condemning the people to use fuel wood for years to come.

3 (b) (i) Energy Sector

There are 32 talukas of Maharashtra included in ESZ-1, with maximum restrictions. Karnataka and Kerala have been only 26 and 15 talukas respectively in ESZ-1. Thus Maharashtra State will be most adversely affected. The recommendations of the Committee are not practical and do not take into consideration local needs. Run of the rivers schemes with max height of 5 mtrs are only permissible for Power, that too with consent of large no. of authorities. 'No new thermal power stations' is a drastic recommendation in the face of around 4000 MW shortage of electricity in the State. Even wind power projects are prohibited. Diversion of agri. land to non-agri. land is also restricted, thus installation of new sub-stations, grid lines will be hampered.

3 (b) (ii) Hydro Electric Projects

So far as the hydro-electric projects are concerned, projects higher than 3 meters must be allowed if there is no submergence of forest and protected area and further less than 1000 trees are being felled. Such projects may be considered in non-forest areas. Thus hydroelectric projects outside the forest and protected area may be allowed if they fulfill the criteria laid down in the existing framework of laws.

3 (c) Transportation Projects

Transport sector is closely connected with Power sector. The report prohibits new railway lines, major roads, new highways, expressways. This will hamper the development of linkages to Power sector adversely. Thus these recommendations are not conducive for energy sector and hence are opposed by the Government of Maharashtra. The Railway projects reaching ports which are essential either due to connectivity to important economic centres or due to geographic factors may be approved with environment impact mitigation measures. Same shall be applicable to roads also.

3(d) Mining

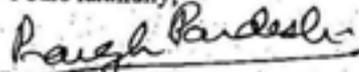
A complete ban on mining and extraction of site specific mineral e.g. bauxite and iron ore which are found in specific pockets, is also objectionable. With a view of optimal utilisation of such scarce minerals, it will be appropriate if the prohibition on such mining is restricted to forest and protected areas in ESZ-1. However, in the interest of the economy of the country, the mining of such scarce minerals may be allowed outside the forest and protected areas with strict Mining Environment Impact Mitigation Measures. The mining and extractions of stones/sand which are otherwise not site specific could be banned in ESZ-1

3 (e) Agricultural Sector

In the agriculture sector, the recommendation of giving incentives to farmers to shift to local tree crops / fruit crops is welcome. The Government of India should provide for incentives to farmers if they shift from seasonal crop towards the tree cropping pattern.

4. As irrigation and hydropower are critical for development of region and need of local people more detailed comments are enclosed in Annexure A
5. In view of the above, this Government requests Government of India to consider all the comments and suggestions of Government of Maharashtra presented in this letter and accompanying Annexure A.

Yours faithfully,


(Praveen Pardeshi)

Principal Secretary (Forests)

ANNEXURE A
COMMENTS WITH RESPECT TO IRRIGATION AND HYDROPOWER

(1) Water (ESZ 1, 2, 3) (Page 43 of Report)

- (i) **Recommendation of WGEEP: Inter-basin diversions of rivers in the Western Ghats should not be allowed.**

Comments: Western Ghats region receives heavy rains during monsoon. It is having surplus water resources. So it is obligatory to implement inter basin diversions / transfers of waters / rivers from water surplus basin to deficit basin to satisfy the water needs of human beings and development activities. This is a well established principle and is implemented / practiced all over the world. The various River Water Disputes Tribunals, constituted under Interstate River Water Disputes Act - 1956 have allowed the interbasin diversions / transfers. Some of the diversion schemes are already in existence in Western Ghats. Hence, in the interest of the human development, inter-basin diversions / transfers of river water should be allowed within the existing framework of laws. As such the WRD strongly objects to any such restrictions / unilateral impositions, which are bad in law as well. If this recommendation is accepted, then the State will be put to huge irreparable loss particularly in respect of substantial power generation to the tune of 3900 Million Units through Koyna Hydroelectric Project (1960 MW) & Ghatghar H.E.P. (250 MW).

(2) Quarry and sand mining (ESZ I) (Page 45 of Report)

- (i) **Recommendation of WGEEP: No new licenses to be given for quarry and sand mining.**

Comments: A complete ban on quarrying of sand, stone, murum, soil etc. is objectionable. The financial viability of the water resources projects primarily depends on the availability of these quarry materials, within the shorter reach/economical lead. In the interest of the economy, existing as well as new quarries and sand mining should be allowed with Environmental Impact Mitigation measures. If the recommendation is blindly accepted, then it will affect economical viability of all water resources development projects located in Western ghats region. As such this impracticable recommendation needs to be rejected in its entirety.

(3) Power / Energy (Page 45, 46 of Report)

General: Demand for power is growing enormously and in this era of global warming pollution free, eco-friendly and sustainable power availability has become order of the day. Hydropower has all these features / advantages over other alternatives of power generation namely, thermal, nuclear, diesel generators etc. Hydropower is a renewable, non-polluting and environmentally friendly source of energy. Hydropower represents use of water resources towards inflation free energy due to absence of fuel cost with mature technology characterized by highest prime moving efficiency and spectacular operational flexibility. To cater the peak demand and to maintain grid stability, the hydro thermal ratio needs to be maintained at 40:60 as hydropower station can be started and stopped within shorter time (flexible operation). For any hydropower station being feasible, three basic requirements are: (i) Availability of water resources (ii) Water head (Natural fall) & (iii) Minimum length of water conductor system (conveyance system). Lot of attractive and techno-economically

feasible sites are available in the Western Ghat region in view of abundant water resources, natural fall across the continental divide with minimum length of water conveyance system. Most of the existing major hydropower stations are located in Western Ghats, namely Koyna (1960 MW), Bhira (383 MW), Vaitarna (61.50 MW), Tillari (66 MW), Ghatghar (250 MW), Khopoli (72 MW), Bhivapuri (72 MW), etc. along with many medium and small power stations. The River Water Disputes Tribunals have allowed & upheld the interbasin diversions for such projects. Koyna hydroelectric project complex having a total installed capacity of 1960 MW is located in Western ghat region itself and it is the lifeline of the Maharashtra State, vis-à-vis industry and agriculture sector. To cope with ever growing demand for peaking power, the entire hydropower potential available through projects proposed in Western ghat region (which is to the tune of 19,000 MW comprising of pumped storage schemes) needs to be harnessed fully.

(a) ESZ 1

(i) Recommendation of WGEEP: Allow run of the river schemes with maximum height of 3 m permissible which would serve local energy needs of tribal / local communities / plantation colonies subject to consent of gram sabha and all clearances from WGEA, SEA and DECs

Comments: As explained in foregoing para (General) the importance, advantages & eco - friendly nature of hydropower, the available & techno-economically feasible hydropower potential/resources need to be harnessed fully without enforcing any ill-logical restrictions on height. The WRD strongly opposes any such restrictions.

(ii) Recommendation of WGEEP: No forest clearance or stream diversion for new projects.

Comments: As submitted in (1) Water (ESZ1, 2, 3) above, stream diversions should be allowed for new projects. The forest land clearance should be allowed within the existing framework of laws.

(iii) Recommendation of WGEEP: Run of the river schemes not allowed in first order or second order streams

Comments: As explained earlier (i), the WRD takes objection for restricting run of the river schemes in first order or second order streams.

(iv) Recommendation of WGEEP: New small hydropower projects (10 MW and below) are permissible.

Comments: As explained earlier (i), the Government of Maharashtra takes objection for restricting the capacity of new hydropower projects to 10 MW and below. Large hydropower projects having optimal sizes and which are techno-economically viable should be allowed within the existing framework of laws to cope with the ever growing power demand.

(b) ESZ 2

Recommendation of WGEEP:

- (i) No new dams above 15 m or new thermal plants permissible.
- (ii) New hydro projects between 10 & 25 MW (up to 10 m ht) permissible
- (iii) All Project categories subject to very strict clearance and compliance conditions through SEA and DEC's of WGEA.
- (iv) Have run off the river hydropower projects but after cumulative impact study of the river basin is done.

Comments As explained earlier (i) of (a) ESZ1, the Government of Maharashtra objects to enforce any ill-logical restrictions on the height of new dams (upto 15 m) and hydropower capacity of new projects (upto 25 MW (upto 10 m height)). Large hydropower projects which are techno-economically feasible and having optimal sizes should be allowed within the existing framework of laws.

(c) ESZ 3

(i) **Recommendation of WGEEP:** Large Power plants are allowed subject to strict environmental regulations including

1. cumulative impact assessment studies.
2. carrying capacity studies
3. minimum forest clearance (norms to be set by WGEA)
4. based on assessment of flows required for downstream needs including the ecological needs of the river.

Comments: Large hydropower projects having optimal sizes should be allowed within the existing framework of laws. It is not necessary to enforce new strict environmental regulations which would make impossible in getting clearances for development projects. The Government of Maharashtra objects to such strict regulations. In fact all above aspects mentioned in the recommendations are taken care of while planning of hydroelectric projects and enforcing such conditions again is not felt necessary.

(ii) **Recommendation of WGEEP:** Existing Power plants subject to strict regulation and social audit.

Comments: Existing hydropower projects are commissioned within the existing framework of laws and after obtaining all mandatory & statutory clearances. As such again enforcing new conditions on the already commissioned projects is not justified at all & it will be bad in law as well. Hence, the Government of Maharashtra takes objection for enforcing the strict regulation and social audit for existing power stations.

(iii) **Recommendation of WGEEP:** For already existing dams reservoir operations to be rescheduled for allowing more water downstream.

Comments For existing dams, it is not feasible to reschedule reservoir operations for allowing more water downstream, because the sectoral water allocations have already been decided and water rights established. Also such rescheduling based on non-technical considerations may endanger safety of dams, which carry huge hazard potential.

(d) **ESZ 1,2,3**

(i) **Recommendation of WGEEP:** No diversion of streams / rivers allowed for any power projects and if already existing, to be stopped immediately.

Comments As submitted in (1) Water (ESZ 1, 2, 3) above, diversion of streams / rivers should be allowed for power projects. It is not possible / feasible to stop existing diversion of streams for power projects as these have been commissioned within the existing framework of laws and they are essential for the human developments. If this recommendation is accepted, then most of the hydropower stations including Koyna (1960MW), Ghatghar H.E.P. (250 MW), Tata H.E. power stations (447 MW), etc. will have to be stopped which will cause huge irreparable loss to the State. This will cause havoc in all development sectors of the Maharashtra State. The Government of Maharashtra strongly objects to any such restrictions / unilateral impositions which are bad in law as well. The Koyna, Ghatghar, Tillari and Tata H.E. Projects contribute about 25% of State's total installed power generation capacity. Abruptly stopping power generation through these projects based on above ill-logical recommendations will not only adversely affect industrial and agriculture sector in the state but also severely affect Mumbai city & Metropolitan region as far as their power demand is concerned. ✓

(ii) **Recommendation of WGEEP:** Catchment area treatment in a phased manner following watershed principles; continuous non-compliance of clearance conditions for three years would entail decommissioning of existing projects.

Comments The Government of Maharashtra is against such decommissioning regulation as the existing laws are sufficient to take action.

(iii) **Recommendation of WGEEP:** Dams and thermal projects that have crossed their viable life span (for dams the threshold is 30-50 years) to be decommissioned in phased manner.

Comments The dams are built considering a lifespan of about 100 years and not 30-50 years. Their life can be extended further by resorting to suitable strengthening measures if required. It is not justifiable to decommission the dams and hydro projects that have crossed the so called lifespan of 30-50 years. If at all decommissioning is felt necessary in case of certain dams, we have to think and plan for building alternative dams / hydropower projects so that accrual of benefits can continue further for the overall human development. The Government of Maharashtra strongly objects to any irrational / ill-logical decommissioning of structures. If this ill-logical recommendation is accepted, then the industrial & agriculture sector along with many big cities, towns & villages in the State will

complete prohibition on such alternative source of green energy will result in condemning the people to use fuel wood for years to come.

3 (b) (i) Energy Sector

There are 32 talukas of Maharashtra included in ESZ-1, with maximum restrictions. Karnataka and Kerala have been only 26 and 15 talukas respectively in ESZ-1. Thus Maharashtra State will be most adversely affected. The recommendations of the Committee are not practical and do not take into consideration local needs. Run of the rivers schemes with max height of 5 mtrs are only permissible for Power, that too with consent of large no. of authorities. 'No new thermal power stations' is a drastic recommendation in the face of around 4000 MW shortage of electricity in the State. Even wind power projects are prohibited. Diversion of agri. land to non-agri. land is also restricted, thus installation of new sub-stations, grid lines will be hampered.

3 (b) (ii) Hydro Electric Projects

So far as the hydro-electric projects are concerned, projects higher than 3 meters must be allowed if there is no submergence of forest and protected area and further less than 1000 trees are being felled. Such projects may be considered in non-forest areas. Thus hydroelectric projects outside the forest and protected area may be allowed if they fulfill the criteria laid down in the existing framework of laws.

3 (c) Transportation Projects

Transport sector is closely connected with Power sector. The report prohibits new railway lines, major roads, new highways, expressways. This will hamper the development of linkages to Power sector adversely. Thus these recommendations are not conducive for energy sector and hence are opposed by the Government of Maharashtra. The Railway projects reaching ports which are essential either due to connectivity to important economic centres or due to geographic factors may be approved with environment impact mitigation measures. Same shall be applicable to roads also.

3(d) Mining

A complete ban on mining and extraction of site specific mineral e.g. bauxite and iron ore which are found in specific pockets, is also objectionable. With a view of optimal utilisation of such scarce minerals, it will be appropriate if the prohibition on such mining is restricted to forest and protected areas in ESZ-1. However, in the interest of the economy of the country, the mining of such scarce minerals may be allowed outside the forest and protected areas with strict Mining Environment Impact Mitigation Measures. The mining and extractions of stones/sand which are otherwise not site specific could be banned in ESZ-1

3 (e) Agricultural Sector

In the agriculture sector, the recommendation of giving incentives to farmers to shift to local tree crops / fruit crops is welcome. The Government of India should provide for incentives to farmers if they shift from seasonal crop towards the tree cropping pattern.

be very adversely affected as far as their water requirements are concerned. Almost every city or town is fully dependent on a dam for its water needs. The City of Pune is totally dependent on water supply through 125 years old Khadakwasla dam, about 50 years old Panshet dam & about 25 years old Varasgaon dam. City of Karad & Sangli are dependent on about 50 years old Koyna dam for domestic water requirements. Same is the case for Mumbai and Thane metropolitan cities. There are many examples of such city & dam combinations. Hence, will it be worth, logical & practicable to abruptly stop water supply to all cities & towns in the State after decommissioning 30-50 years old dams merely based on above recommendation.

As such this non-technical, irrational & ill-logical recommendation needs to be rejected in its entirety & should not be considered at all by any stretch of imagination. ✓

(iv) **Recommendation of WGEEP:** All project categories to be jointly operated by LSGs and Power Boards with strict monitoring for compliance under DECs.

Comments-- It is not feasible to operate all power projects jointly because the generated power is supplied to state grid. ✓

Government of Maharashtra

By Speed Post

No. FLD 2011/CR-203/F-10,
Revenue & Forest Department
Room no. 456 Annex, Hutatma
Rajguru Chowk, Madam Cama
Marg, Mantralaya, Mumbai 400032.
Dated: 4th September, 2012.

To,
The Secretary,
Planning Commission,
Yojana Bhavan,
Government of India,
New Delhi 110001.

Sub: Report of the Western Ghats Ecology Expert Panel
Ref: Your D. O. letter no. 12074/2 (28) /05-E&F, Dated 4th June, 2012.

Sir,

Please refer your letter mentioned above, addressed to the Chief Secretary of Government of Maharashtra.

2. Government of Maharashtra, vide letter no. FLD 2011/CR 167/F-10, dated 13th January, 2012 and no. FLD 2011/CR203/F-10, dated 25th January, 2012 has already submitted its comments on the recommendations of Western Ghats Ecology Expert Committee headed by Dr. Madhav Gadgil. Copies of these letters are enclosed for your kind perusal.

With regards,

Yours faithfully,



(Sanjeev Gaur)
Joint Secretary to the
Government of Maharashtra

Encl: As above.

Dr. V. S. ...
Date: 10/09/12
Planning Commission

19.09.2012
Planning Commission

May like to see please.

Adviser (E&F)


19/09/12

GOVERNMENT OF MAHARASHTRA

No. FLD 2011/CR 203/F-10
Revenue & Forest Department,
Room no. 456/461(Annex),
Hutatma Rajguru Chowk,
Madam Cama Marg,
Mantralaya, Mumbai 400032.
Dated, 11 February, 2013

To,
Dr. K. Kasturirangan,
Chairman,
High Level Working Group,
Ministry of Environment & Forests,
Government of India, New Delhi

Sub: Comments of State Government on the Questionnaire.
Ref: Your D. O. Letter no. 1/1/2010-RE(ESZ), dated 30/08/2012.

Sir,

This Government has submitted comments vide letter no. FLD 2011/ CR 167/F-10, dated 13th January, 2012 (Annexure-I) with its specific comments regarding various recommendations of WGEEP.

2. Subsequently, the High Level Working Group has had detailed discussion with Hon'ble Chief Minister, in presence of People's Representatives from different regions of Western Ghat, in the State of Maharashtra. During the said discussion the State Government has reiterated its reservations regarding some of the recommendations made by the WGEEP. A hard copy of the Power Point Presentation made by the State Government to the High Level Working Group is enclosed as Annexure -II.

3. The comments of this Government with respect to the questionnaire received vide letter dated 30th August 2012 are as under -

I (a) The State Government expresses its concerns the recommendation of the WGEEP regarding the delineation of the Western Ghat Area into 3 types of Ecologically Sensitive Zone, viz. ESZ-1, 2 and 3. The State Government also requests to modify the recommendation of regulating the mining activities in the Western Ghat region.

I. (b) This Category is already covered in the comments submitted by this Government vide its letter dated 13th January, 2012. It may be pointed here that it is desirable

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to delineate the region into 3 types of ESZs. However, as submitted by the Government in the letter dated 13th January, 2012, the exact area delineated as per the slope and forest should be under ESZ-1. The entire Taluka should not be taken as the unit to define the ESZ. Moreover, grid size of 9 X 9 kms is too large to identify the administrative boundaries. Moreover, the state of complete moratorium on mining activity will not be desirable with the view of optimal utilization of site specific minerals like bauxite & iron ore; it should be allowed to extract with strict mining environmental mitigation measures.

The State Government has also objections for restricting the capacity of new Hydro Electric Power Projects to 10MW and below. Large Hydro Electric Power projects having optimal sizes and which are techno-economically viable, should be allowed in the existing framework of laws to cope up the ever growing power demand.

I (c) The remarks submitted by this Government vide letter dated 13th January, 2012, cover all the activities which are not at all acceptable. During the discussion held on 20/11/2012, the same facts were again brought to the notice of HLWG.

II & III The existing legislature and regulatory measures which are in force at present are as follows –

II (a) 1. Maharashtra Felling of Trees (Regulation) Act, 1964

2. Maharashtra Regional and Town Planning Act, 1966

3. Maharashtra Land Revenue Code, 1966.

II(b) 1. Indian Forest Act, 1927.

2. Wildlife (Protection) Act, 1972.

3. The Water (Prevention and Control of Pollution) Act, 1974

4. The Water (Prevention and Control of Pollution) Cess Act, 1977

5. Forest (Conservation) Act, 1980.

6. Air (Prevention and Control of Pollution) Act, 1981

7. Environment (Protection) Act, 1986.

8. The Public Liability Insurance Act, 1991

9. The Biological Diversity Act, 2002.

The above mentioned regulatory measures are adequate to deal with the recommendations brought out in the WGEEP report.

These regulations therefore do not need any further improvement/alterations. Setting up of separate Western Ghat Regulatory

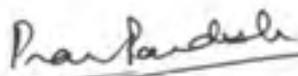
Authority as envisaged in the WGEEP report is, therefore, not at all acceptable to this Government, for the reasons mentioned in the paragraph 1 of the letter dated 13th January, 2012.

- IV Western Ghat is a unique biogeographic region which consists of fragile ecosystem along with the habitants highly dependent on the available resources for their livelihood. So the conservation measures had to be carefully implemented taking into consideration the measures for livelihood of local habitants. Therefore, the balance between conservation and subsistence issue of local habitants must be struck within the existing framework of regulations. Local habitants are well conversant of the value of resources of their region. Imposing further restrictions on the pretext of heritage site recognition will definitely prove to be counterproductive for the people who have preserved their natural resources for several generations.
- V. The detailed analysis is covered in this Government's letter dated 13th January, 2012 and the presentation made before the HLWG.
- VI. The State Government implements the Western Ghats Development Program of Central Government.

The above facts and submissions of this Government may please be considered while finalizing your report.

Yours,

Encl: As above.


(Praveen Pardeshi)
Principal Secretary (Forests)

Copy

Principal Secretary to Hon'ble Chief Minister, Maharashtra, Mantralaya, Mumbai

Secretary (Forests), Ministry of Environment & Forests, Government of India, New Delhi

Shri Ajay Tyagi, Joint Secretary, Ministry of Environment & Forests, Government of India, New Delhi

Addl. Chief Secretary, (Revenue), Revenue and Forest Department, Mantralaya, Mumbai.

Secretary, Environment Department, Mantralaya, Mumbai

Government of Maharashtra

No. FLD 2011/CR 203/ Part-1/F-10
Revenue & Forest Department,
Room no. 456/461(Annex),
Hutatma Rajguru Chowk,
Madam Cama Marg,
Mantralaya, Mumbai 400032.
Dated, 16th February, 2013.

To,
Dr. K. Kasturirangan,
Chairman,
High Level Working Group,
Ministry of Environment & Forests,
Government of India, New Delhi

Sub: Comments of State Government on the Questionnaire.

Ref: 1) Your D. O. Letter no. 1/1/2010-RE(ESZ), dated 30/08/2012.
2) This Government's letter of even no. dated 11th February, 2013

Sir,

This Government has submitted comments on your letter referred at 1 above, vide ~~our~~ letter dated 11th February, 2013 mentioned at No. 2 above.

In continuation to that letter, the comments received from Industries Department of Government of Maharashtra are enclosed for your consideration.

The facts and submissions of this Government may please be considered while finalizing your report.

Yours,

Encl: As above.


(Sanjeev Gaur)
Joint Secretary (Forests)

Copy
Principal Secretary to Hon^{ble} Chief Minister, Maharashtra, Mantralaya, Mumbai
Secretary (Forests), Ministry of Environment & Forests, Government of India, New Delhi
Shri Ajay Tyagi, Joint Secretary, Ministry of Environment & Forests, Government of India, New Delhi
Dr. Amit Love, Deputy Director, Planning Commission, Government of India, New Delhi.
Addl. Chief Secretary, (Revenue), Revenue and Forest Department, Mantralaya, Mumbai.
Secretary, Environment Department, Mantralaya, Mumbai

20/12

The comments of Industries Department on Western Ghat Ecology Expert Panel (WGEEP) Recommendation/ Suggestion related to Industries Department are as under:

Page No.	Description	Industries Departments Comments
2	<p>Summary :- In the summary on Page no.2 Panel has recommended an indefinite moratorium on new environmental clearances for mining in Ecologically Sensitive Zones 1 and 2, a phasing out of mining in Ecologically Sensitive Zone 1 by 2016 and continuation of existing mining in Ecologically Sensitive Zone 2 under strict regulation with an effective system of social audit. It is also recommended that in Ecologically Sensitive Zones 1 and 2, no new polluting (red and orange category) industries, which would include coal-based power plants, should be permitted to be established; the existing red and orange category industries should be asked to switch to zero pollution by 2016, again with an effective system of social audit.</p>	<p>Recommendations of the Committee for indefinite moratorium for new environmental clearance is not justified by the committee. The carrying capacity in respect of pollution for Ratnagiri & Sindhudurg District is not defined. The carrying capacity may be defined first for these two districts. However, the moratorium should not be indefinite, it should have been over by 31st December, 2011 as envisaged.</p> <p>Similarly, all the red & orange types of industries are not of equal pollution potentials hence these may be decided depending on pollution load of individual industry and this should be applicable to large red category industries only. SSI Units & Medium scale units which are located in MIDC areas may be permitted with the concepts of zero discharge effluent as suggested.</p>
3	<p>Mandate of the Panel :- In the mandate it is mentioned that in the Point No.3 recommendation & conservation, protection & rejuvenation of the Western Ghats Region following a comprehensive consultation process involving people and Government of all the concerned States.</p>	<p>After studying mandate given to the panel and observations thereof of the committee, it is felt that MPCB may like to exercise the powers of granting the permissions /expansions of the red & orange categories of the industries.</p>
13	<p>Develop sustainably- converge thoughtfully :- On the Page No.14 in the Box 1:</p>	<p>The contents of the remark in the Box no.1 by the committee are not</p>

	Development by Exclusion : Lote MIDC and pollution of Dabhol creek.	acceptable. Whereas, MIDC already informed comments to the Environment Department, Government of Maharashtra on the study to of the WGEEP from 4 th to 11 th October 2010, the role of MIDC about the Abhyas Ghat & meetings related to vide this office letter nos.358 & 360 dtd.09.04.2011 (Copies enclosed), the cognizance of which is not taken by committee.
16-17	Ecologically Sensitive Zones :- WGEEP recommends the adoption of a graded or layered approach, and suggests that the entire Western Ghats be characterized as comprising (1) Regions of highest sensitivity or Ecologically Sensitive Zone 1 (ESZ1), (2) Regions of high sensitivity or ESZ2, and the remaining (3) Regions of moderate sensitivity or ESZ3.	There are already sensitive area notified by the MoEF viz. Dahanu, Murud-Janjira. In the proposal of the ecological sensitive zone of the committee it is not clear whether existing MIDC area in Ratnagiri & Sindhudurg District are within the or outside the ESZ. This requires clarification. All MIDC areas should be excluded from the ESZ areas.
45	Proposed guidelines/ summary recommendations for sector-wise activities :- In the ESZ1 it is mentioned ne new polluting (red and orange category) industries; for existing industries switch to zero pollution by 2016 and be subject to strict regulation and social audit.	Environment Department Government of Maharashtra has already issued the policy for red, orange & green type of industry through RRZ policy (१३७२००९/३२५/प्र.ऊ.६९/तक १) on 13 th July, 2009. In this policy location of the industry depending on pollution potential & distance criteria as per the A-I, A-II, A-III & A-IV of the notified river is already defined. Hence, new recommendation of the WGEEP committee will contribute more confusion for implementing the policy. There are two types (i.e. A&B)

		<p>of red category list in Annexure -IV of the classification of industry (Red, Orange & Green Category). The list A is mainly industry identified by Ministry of Environment & Forest, Govt. of India as heavily polluting and covered under Central Action Plan in this list there are 18 types of sub categories. These types of industries can be restricted in ESZ1 area except MIDC industrial areas which are already established & MIDC has provided environmental infrastructure facilities. Whereas in the list B indicates less polluting activity compared to industries as the listed in A & there are 41 sub categories of the industries in list B. (List enclosed). Similarly, in the orange category there are 24 sub categories in which medium polluting industries & less polluting industries are included such as, hotels & restaurant, automobile servicing station, Malted food, Food including fruits and vegetable processing, Non-alcoholic beverages (soft drinks), Fish processing etc. The activity of these industries mainly depend upon the raw material which is available locally. Hence, orange types of industries also should not be restricted in ESZ1 area as MIDC areas already established.</p> <p>Similarly, MoEF, New Delhi has also issued a notification for setting up of the industry as per their guidelines</p>
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		<p>on 14th September, 2006. In notification also there are 39 types of projects or activity which requires EC. The MoEF decides the grant/refuse the permission depending on the EI report. Hence, the separate recommendation of WGEEP will contribute more confusion for implementing the policy.</p> <p>Thus there is a overlapping of RRZ policy while identification of ESZ areas suggested by committee.</p>
45	Committee has also made restriction to non polluting green/ blue industry in ESZ1 area.	<p>Green industries does not contribute pollution of liquid, air & hazardous waste, hence there should not have any restriction for green category industries. Whereas, there is no category of industries called "blue" in the notification issued by Environmental Department Government of Maharashtra as described above. Moreover, committee has not defined the blue type of industries. Hence, this is creating the confusion to the implementing agencies.</p>
45	Committee has also prescribed restriction of red, orange, green & blue in ESZ2 & ESZ3 area.	<p>In industrial areas at Ratnagiri & Sindhudurg District, MIDC has established CETP, alongwith environmental infrastructures like effluent collection/ disposal systems, particularly in Lote Parshuram Industrial Area where chemical industries of different categories like red, orange & green are located. Moreover, MIDC is implementing</p>

		RRZ policy, EC Policy & Coastal Zone Management Policy. If upgradation of CETP & collection/ disposal system is required, MIDC is also taking care of the same. Hence, there should not be ban on any type of industry in MIDC area particularly in the district mentioned above.
71	Ratnagiri & Sindhudurg District :- Committee has mentioned pollution from industry if also well above legally permissible limits. Consequently, there is much social discord, especially because people firmly believe that the law and order machinery is being misused to protect illegal activities.	The committee has not considered the views MIDC which are already informed to the Environment Department as stated above. Moreover, committee has met farmers & local residents only. It seems that the views of industries association/ entrepreneurs are not observed. MIDC has already received representations from various industries not requiring E.C. & having zero discharge for release of the restriction on the activity in Ratnagiri & Sindhudurg District which are located in notified industrial areas. These industries are also SSI units. Hence, the committee recommendation can not be accepted.
73	Drinking of Polluted Stream by the Sarpanch Kotavale of CETP Lote Parshuram & also in 2000, around 30 school children near Lote MIDC became unconscious due to inhalation of poisonous gases.	Committee's remark is based on misleading information given by the local people. MIDC has already given the clarification on this vide letter no.358 dtd.09.04.2011. However, it is observed that comments of the MIDC have not be considered by the Committee while finalization of the report.
92-93 & 96	Appendix 2: Proposed assignment of various Western Ghats Talukas to ESZ1.	In case of Maharashtra, Talukas assigned to ESZ1 are about 29 in

<p>ESZ2 and ESZ3. Appendix 3: Proposed ESZ1, and ESZ2 assignment of various Western Ghats talukas for which less than 50% area is within the Western Ghats boundary.</p>	<p>various districts like Kolhapur, Nashik, Pune, Raigad, Ratnagiri, Satara, Sindhudurg & Thane. Whereas, it is not clear about areas of the taluka covered in ESZ1 or part of it or whether MIDC areas which are already established are excluded or included. Similarly, in case of ESZ2, total 4 nos. of talukas are included from Ahmednagar, Nashik, Ratnagiri & Thane districts. Whereas, in ESZ3 about 12 no. of talukas from Ahmednagar, Kolhapur, Nandurbar, Nashik, Pune, Raigad, Ratnagiri, Satara & Thane are covered.</p> <p>Similarly, committee has proposed ESZ1 & ESZ2 assignment of WGEPP for which less than 50% area is within the western ghat boundary. In this case also in ESZ1 there are 8 no of taluka from Nashik, Sangli, Pune & Ahmednagar & under ESZ2 area there are 23 no of talukas in Nashik, Sangli, Thane, Dhule, Ratnagiri, Solapur, Pune, Kolhapur, Ahmednagar & Satara districts. In this case also it is not clear whether the MIDC areas which are already established are included or excluded.</p>
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As per Page No.93 of report of committee, there are 10 districts comprising of 45 Talukas under ESZ1, ESZ2 & ESZ3. In this additional 3 districts comprising of 8 talukas & additional 19 talukas in above 10 districts included on Page No.95 of report. Thus, total 13 districts comprising of 72 talukas are included in report. Out of these 72 talukas, 37 MIDC industrial areas are being affected due to incorporation in the report of committee and moratorium should be removed without further delay. In the view of above,

2017

moratorium in Maharashtra imposing any restriction on putting / setting up or operating any industry in Maharashtra should be urgently removed without further delay. Their committee's recommendations should be out rightly rejected as mentioned above and also because there're several policies to maintain eco & environment standard are already in place and these are being implemented in Maharashtra. Hence, in compliance to above, it is felt that MIDC areas may be exempted from the action being taken in accordance with the WGEEP's report of 2011 considering the following facts.

- 1) MIDC has taken initiative in abatement of environment pollution by establishment of CETPs/ STPs, alongwith effluent collection & disposal system, Hazardous waste treatment & disposal facilities & Green belt development by giving land at nominal rate of Rs.1/- per m², giving financial assistance in form of subsidy of 25% of project cost.
- 2) Wherever the performance of CETPs is not satisfactory it is decided to upgrade the same by adopting new modern technology.
- 3) MIDC has stopped granting permission for new allotment /expansion within industrial areas in Sindhudurg & Ratnagiri Districts, since issue of moratorium.
- 4) MIDC is already following directions issued vide RRZ & CRZ policy of Environment Department of GoM/ MoEF, G.O.I.
- 5) It is proposed that the permission for allotment /expansion may be granted by inviting individual industry
 - a) to obtain Environment Clearance at their own if required & follow norms laid in consent granted by MPCB stringently.
 - b) zero discharge i.e. recycle & reuse in their own premises till the up gradation of existing CETP.
 - c) Solid hazardous waste shall be disposed to CHWTSDFs (Comprehensive Hazardous Waste Treatment Storage & Disposal Facilities).

PARIMAL RAI, IAS
PR. SECRETARY
(Mines/Forest)



GOVERNMENT OF GOA
SECRETARIAT, PORVORIM,
GOA - 403 521

D.O. No. PSEC/WG/Comments /1610

Dated: 26th March, 2013.

Dear Sir,

This has reference to Ministry reference seeking comments of the State of Goa on the report of Western Ghat Ecology Panel(WGEEP) headed by Dr. Madhav Gadgil and recommendations contained therein. In this context I am directed to convey the following.

The State Government acknowledges that Western Ghats are second only to the Eastern Himalaya as a treasure trove of biological diversity in India. It is also aware that the Western Ghats have been subjected to unregulated human activity to meet the requirement of social and economic development over the years and it is high time that a mechanism to regulate growth and development around Western Ghats is put in place to protect the rich heritage lest irreparable damage is caused.

Be that as it may, evolving a conservation strategy has to follow a deliberative process accommodating the local constraints and concern, if it is to be made implementable. It cannot be an armchair exercise based on some not so objective parameters oblivious of local needs and requirement. The state government expresses its serious reservation and disagreement to the whole exercise and is not in a position to accept the recommendations made in the report. We feel that integrating the needs of development with the desire to protect the environment, for sustainable development has to be the key feature of the conservation strategy for Western Ghats

WGEEP has recommended adoption of a graded or layered approach, and suggested that the entire Western Ghats be characterized as comprising (1) Regions of highest sensitivity or Ecologically Sensitive Zone 1 (ESZ1), (2) Regions of high sensitivity or ESZ2, and the remaining (3) Regions of moderate sensitivity or ESZ3. These will be complementary to areas already declared as Protected Areas, which will continue to be managed under regulations prescribed by pertinent acts such as the Wildlife Protection Act. Thus, WGEEP has come up with four color maps spanning the entire Western Ghats depicting PAs, and ESZ1, ESZ2 and ESZ3.

Adviser (GVS)
Dy. No. 131R
Date: 11.03.2013

Adviser (GVS)
Dy. No. 2542
Date: 11/4/13

Scp. on tour fl. May
Kindly see for m.a.

Atv. (GVS)

Received today only
11/4

DD(AW)

11.4.13

Despite lack of methodological clarity and objective and acceptable indices to suggest a conservation framework the report has made extensive recommendations about land use, developmental activities including infrastructural development and setting up critical infrastructure related to power, water and waste management. The recommendations have serious social and fiscal consequences which have not been gone into by the committee, rather they have been deliberately ignored for reasons best known to them.

The report has made extensive recommendations about setting up of industry and allowing existing industries to continue subject to strict environmental control and zero pollution by 2016 in Zone-I and II and permits setting up of new industries only in Zone-III subject to strict regulation. The recommendation has serious implication for economic development of state of Goa.

The report recommends setting up of Western Ghat Ecology Planning Authority which would be responsible for various developmental approvals directly infringing the authority of the State Government in matters contained in the State List. The report recommends a State level Authority as well but with very limited advisory role. The central Authority has been vested with powers to issue directives to prohibit or regulate any activity that may have adverse impact on the western Ghats and have also recommended conferring powers to enforce compliance of its orders by making them binding on the State Governments in total deviance to democratic traditions and principles of participatory and inclusive governance to which the State of Goa is committed.

The report recommends that most of the developmental projects, location of industry, land use planning and any other activity having adverse impact shall have to be placed before the Authority; it has not defined properly what would be construed as offending activity thereby giving omnibus power to Central Authority in total disregard of the federal principles enshrined in and guaranteed by the Constitution of India. Since the Central Authority has been vested with all powers to decide Eco-sensitive Zones without any say of the State Government, it would seriously fetter the authority of State in planning and development based on local needs.

Further, the report has made recommendations about mining operations suggesting stopping all mining activity in Zone I by 2016, moratorium on fresh leases in Zone II and regulated and sustainable mining in Zone III without analyzing the consequences. The Western Ghats are rich in iron, manganese and bauxite ores in parts of their ranges. These are being extracted on a large scale and exported in ore form, from Goa. With the stringent recommendations made in the report it would be almost impossible to carry on sustainable mining operation resulting in serious economic and social disruption. In this context it is relevant to add that mining operation can only be carried out where ore is available and we cannot confine them to a zone without carefully studying and analysing the availability of ore and operational and economic feasibility considerations. We feel that sustainable mining is necessary; scarce and precious natural resources can and should not be left unexploited, it would have serious social and economic consequences for a state like Goa which has limited land and is constrained to take up much economic activity due to its small size.

While the government of Goa is committed to conserve its natural heritage but at the same time it is also conscious of the impact of recommendations of the Western Ghat panel report on the mining operations hitherto being pursued as one of the most important economic activity and future economic and social developmental needs. Mining has been going on in the state since Portuguese time, and is the main stay of the Goan economy. It generates revenue of 1200 crores and directly and indirectly employs over a lakh persons in various activities associated with mining and export of iron ore. Moreover, a good number of local entrepreneurs and others have contracted heavy financial exposure and are engaged in supply of heavy mining machinery and equipment and transport and Tran's shipment of the ore through a fleet of 26000 trucks, 400 Barges. While the state is totally against reckless mining at the cost of ecology and environment but sustainable mining in the state cannot be stopped. However, if restrictive recommendations contained in the report, ignoring the local constraints, are accepted it is bound to adversely impact mining in the state ruining the economy of state and unleashing deprivation due to loss of income opportunity and employment leading to below par living standards thereby causing protest and dissent.

The report totally ignores the land constraints faced by the State. The State of Goa is the 3rd smallest State in the Union; the total geographical area is only 3702 sq. Kms. And out of that,

- a) An area of 1250 sq. kms. Is under forest (protected/reserved/private) which is about 34.63% of the total geographical area;
- b) That out of the said area under forest, 62% i.e., 755.35 Sq. Kms. has been declared as National Park / and or Wild Life Sanctuary;
- c) Further, an area of approximately 70 sq. Kms. falls under the Coastal Regulation Zone.
- d) In fact, the total land mass available to the State of Goa, free from various restrictions would further be reduced by 196.80 sq. Kms. i.e. up to 5.32% on account of rivers, lakes, and other water bodies.
- e) Also approximately 40% of the land is under agriculture which the government has decided should not be diverted.

Insofar as restrictions are concerned about 45% of the area available in Goa is under one form of restriction or the other. In the event, the agricultural land is also to be considered almost 85% of the area available in the State of Goa would be unavailable for further development.

Besides restrictions referred to above the state is subject to land use restrictions on many other accounts. The state has a large number of historical monuments that are covered by the Ancient Monuments and Archaeological Sites and Remains Act, 1958 that imposes serious restrictions on enjoyment of property rights in protected areas. The norms provide for a perimeter cover ranging from 100 meters to 200 meters around protected area and undertaking any development work is prohibited without the permission of the Central Government.

The state is blessed with seven rivers and cover a length of 253 KM approximately. The state is committed to conserve its natural heritage by regulating development around the rivers and hence has subjected the areas around rivers under Coastal Zone Regulation with a no development zone of 100 meters from the bank of rivers on all sides thereby imposing serious land use restriction.

The state's coastal areas are full of mangroves and khazan land and development around mangroves or on khazan land is banned by the state government as a voluntary measure to protect our ecological heritage and maintain ecological balance. The state is home to Western Ghats and allied ranges and in order to protect the natural physical character of topography the state has banned all development on and around hills or Western Ghats slopes.

The state is urbanizing at a very fast pace and out of total population 49.76% population lives in urban areas and small towns occupying 15% of the geographical area. The decadal growth of urban population is very high, 39.78% and such pace is bound to make tall claim on the land for settlement besides social and physical infrastructure and infrastructure and facilities for income generation and employment through industrial and allied activities including service industry. Further, the existing population density of Goa is 390/ Sq. KM which is above national average and if we account for areas that are not available for development due to various restriction that are applicable namely Forest, CRZ, etc. the resultant density may touch two thousands making it impossible to manage. It is for these reasons that are peculiar to Goa, that the state deserves special dispensation in terms imposing any restriction that impacts land use or other social or economic activity or enterprise.

The State of Goa has been pro-active in protecting ecology and environment and has strictly regulated diversion of forest land or land falling within eco sensitive zone. The proactive stance of the State should not be penalized by ignoring the constrains of development and growth of the State and the local ground realities and imposing constrains for future growth of the State. The State is in no position to accept further stringent restriction on development of land and land use including settlement and creation of allied infrastructure including industrial and infrastructure development in and around Western Ghats located on eastern side of the state running from north to south.

The state government seriously feels that while it may be absolutely necessary to have conservation strategy for Western Ghats but it should be based on local constraints rather than on a one size fit all approach. The tradeoff between growth and development needs of the state and impending obligation to protect the ecology and environment has to be chosen carefully and in such manner that it addresses local constraints and concerns so that it does not lead to protest and dissent from locals who would face the impact of the additional land use constraints imposed due to acceptance of the recommendations of WGEEP report. In view of the above any further restriction, as contemplated in the recommendations of the WGEEP would spell economic disaster insofar as the State of Goa is concerned and therefore are not acceptable.

A careful analysis of the report suggests that the report without any basis has assumed that the states have failed and they cannot be entrusted the responsibility of protecting Western Ghats. The State Government or the stakeholders were never consulted and based on advice of experts the report was prepared making recommendations that would adversely impact the fiscal health of the State besides serious consequences for social and economic development in the State. Objective observation by experts is good while drafting a report but at times participatory observation in the form of involvement of local stakeholders and State Government is critical when it comes to issues like ecology and environment, especially to address the local concerns and constraints.

The recommendations made in the report suffer from following infirmities:

- Serious implication for social and economic development.
- Imposes serious constraint on land use.
- Restriction on development of physical and social infrastructure.
- Restrains economic activity.
- Loaded against not so well developed but well endowed states that started their journey late.
- Negates the endowment benefit on the name of ecology.
- No analysis of fiscal and social impact.
- Misplaced believe that one more regulation would do the trick.
- Instead of putting premium on compliance the approach is restriction centric- it would only alienate masses and overawe them with strict measures leading to dissent and protest.
- An attempt to cure the symptom rather than cure the disease.
- It has not gone into realities of why is ecology threatened, how we can introduce optimality and recognize trade off.
- Fails to understand that every economic and social pursuit shall consume environment and ecology as an input to some degree and what is needed is a careful strategy that creates condition for voluntary compliance by using technology to minimize damage rather than complete ban.

- Cure market failures; the report assumes that it is not the market but the states have failed.
- Glorifies incompatibility of growth and development with ecology and environment ignoring that it is not either or.
- It forgets that compromises are necessary if we want to provide decent living standards to the people of the state; growth would not come free, the aim should be to minimize damage and maximize return rather than opting for shunning all activity.
- The report forgets that every good cause is worth some inefficiency and it has to be accepted, addressed and accommodated in the strategy for sustainable development.
- Creates rivalry between ecology and development and the approach is fraught with dangerous consequences.
- Ignores that the entire state would fall in eco sensitive zone and the recommendations of WGEEP if accepted would make it almost impossible to undertake economic pursuits and social and economic development; what Maharashtra and Karnataka can sustain Goa may not.
- Negates the endowment advantage of a small state like Goa, is it the fault of people of Goa if it is well endowed?
- Ignores already existing restriction in form of CRZ-, Monuments, River Basin, Hills and Slopes; the new restriction would exclude hundreds of Sq. KM of area from any meaningful economic and social activity leaving very little for development, approximately 15 to 17% of the total land area which is too little to address the desires and aspiration of people of Goa and therefore not acceptable.

Admittedly there are serious lacunae in the report. The database relied upon has not incorporated considerations of habitat continuity. It is also weak in terms of information on streams, rivers and other wetlands, as well as ground water, and further careful work is needed to identify, protect and sustainably manage aquatic habitats and water resources. It has also not undertaken any extensive compilation of pertinent information and assignment of levels of ecological sensitivity to the plains and coastal portions falling in the Western Ghats with specific reference to the local inhabitants and their traditionally-driven activities / earning initiatives.

The imposition of restrictions envisaged in the report for ESZ-1, which accounts for more than 30% of the geographical area of the State (outside the protected areas) would restrain the local Panchayat Raj Institutions from carrying out any local site-specific traditional activities to meet the requirements of basic amenities, housing, small-scale enterprises, rural economic activities, thus putting on hold all socio-economic-demographic growth in these areas. Implementation of the recommendations amounts to negating the endowment benefit on the name of ecology in rural areas which is not acceptable to the State Government.

We feel that instead of putting premium on compliance the approach is restriction centric. It would only alienate masses and overawe them with strict measures leading to dissent and protest. The recommendations are loaded against not so well developed but well endowed states that started their journey late, which is unfair and not acceptable.

As regard to constitution of Western Ghat Ecology Authority (WEGA), the State Government is of the view that it encroaches on the powers of the State Government and is against well established federal principles. Subjects like land use planning, location of industries, infrastructure developments are within the domain of State Government but with the constitution of the Authority the freedom of the State Government would be seriously curbed and is not acceptable. In a federal set-up when you choose to impose restrictions on subjects which squarely fall in State's domain wider consultation is a must to understand the impact and implications. However, the State Government or the local stakeholders were never consulted while preparing the report or finalizing the recommendations.

While making recommendations that have fiscal, social and other impacts impinging on growth and development of the State their impact must be analyzed and explained in detail which this is totally missing in the report. In view of serious implications on State's ability to undertake growth and development measure, the recommendations must be fine-tuned to suit the twin objective of conservation and growth. One size fits all is a simplistic way of answering complex questions of ecology and environment and should be avoided. The ground realities obtaining in every State must be understood carefully before making recommendations to make them acceptable and palatable.

Further, while the report has made recommendations that have far reaching fiscal consequences it has not gone into mechanism to compensate the state for any loss of revenue it may have to suffer and its impact on economic and social development. A report cannot recommend restrictions on spatial planning and land-use without analyzing alternatives and impact on existing socio-economic activities e.g. Mining, Industry, tourism, fishery, local handicrafts etc. Alternate land-use, as has been recommended in the report, cannot be arbitrarily confined to zones without detailed feasibility study. Moreover, size of the State must be kept in mind while suggesting any site-specific recommendations which is totally lacking in the report.

The recommendations have never been discussed at the grass-root level which is a must especially when rights and livelihood of inhabitants is likely to be adversely impacted. It is nothing but autocratic decision making oblivious of voices from the ground and local concerns and constraints. Such unilateralism may prove to be detrimental to the interest of environmental protections as it cannot be secured without people's participation.

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In view of the submission above recommendations contained in the WGEEP report are not acceptable to the State of Goa. The State Government is of the view that the whole report needs to go through a consultative deliberations to accommodate local constraint and concerns and make it conform to well established federal principles.

with warm regards

Yours sincerely,
PR *26.3.13*

(Parimal Rai)
Principal Secretary
Department of Forest
Government of Goa

To
Dr. V. Rajagopalan, IAS
Secretary,
Ministry of Forest and Environment
Government of India,
Paryavaran Bhawan, New Delhi.

Report of the Western Ghats Ecology Expert Panel

Response of Government of Karnataka

State Government views - salient features

- Western Ghats Ecology Authority (WGEA)
 - Undemocratic
 - Uncalled for interference in the state's sphere of authority
 - Duplication of existing institutional structures

State Government views - salient features

- Western Ghats boundary delineation needs improvement – ideally at village level
- Declaring the entire Western Ghats region as Eco-sensitive is problematic. Developed areas need separate treatment.
- Local community consultation needed for demarcating eco-sensitive zones. Should be balanced with larger interests.

Recommendations relevant to all the States

Recommendations which are acceptable

Para of the report	Recommendation
Para 2.1(Water use) of Part-II of the report.	a) Measures for mitigation / improvement : Recommendations No.4, 7, 8, 9 & 11 are acceptable.
Para 2.2(Agriculture) of Part-II of the report	Measures for mitigation / improvement : Recommendations No. 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 18 & 19 are acceptable, subject to the condition that Central Government agrees to provide the required subsidies to the farmers in the Western Ghats areas for the financial loss that they may suffer, as suggested in the report.
Para 2.12(Science and Technology) of Part-II of the report	Measures for mitigation / improvement in the area of Science and Technology are acceptable.

Recommendations which are acceptable

Para 2.4 (Fisheries) of Part-II of the report	Issues of Concern: Fisheries Habitat loss, including loss of mangroves is a concern shared by the Karnataka Forest Department.
Para 2.5(Forests and Biodiversity) of Part-II of the report	Recommendation with regard to Forest and Biodiversity are all acceptable to the Karnataka Forest Department. KFD has been proactive in the implementation of the FRA as is evident from the progress achieved in the state. Out of the 1,63,038 applications received by the Forest Rights Committee (FRC), 1,62,743 have already been disposed.

Recommendations which are acceptable

<p>Para 2.8 Energy and Power EIA procedures should take into account carrying capacity of region and also require cumulative impact studies when power plants are planned to be in clusters</p>	<p>The State of Karnataka has already entrusted an 'Ecological Carrying Capacity study of the Western Ghats in Uttara Kannada District' being conducted by the Indian Institute of Science, Bangalore for which a budget of Rs. 40 lakhs is already placed at the disposal of IISc, Bangalore. The recommendations of this study will be taken on board while considering projects in this region.</p>
<p>Para 2.9(Tourism) of Part-II of the report</p>	<p>Recommendations with regard to Tourism are all acceptable to the Karnataka Forest Department, except refining the Eco Tourism Policy of MOEF by WGEA. The Karnataka Forest Department agrees to follow the Eco Tourism Policy approved by MOEF.</p>

Recommendations which are acceptable

<p>Para 2.11 of Part 2 of the Report</p>	<p>Human Settlements</p>	<p>Measures for mitigation / improvement : The Report has recommended that For all settlements and built areas/ to be developed areas, certain types of areas would be no-go areas, including water courses, water bodies, special habitats, geological formations, biodiversity rich areas, and sacred groves Special Economic Zones should not be permitted</p>	<p>All such land use issues are either dealt by KTCP Act or Rules of the Revenue department, depending upon the classification of the Town/city. Necessary amendment to the Act and rules will be required for declaring such areas as no go areas or for banning SEZs in Western Ghats.</p>
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Recommendations which are acceptable

		<p>A building code should be evolved by the WGEA which include inter-alia eco-friendly building material and construction methods, minimising the use of steel, cement and sand, providing water harvesting methods, non-conventional energy and waste treatment. The application or detailing of the framework can be done by local authorities to suit local conditions.</p>	<p>This matter is already under consideration of the State Government and workshops and discussions at various levels are being held. After a final view is taken by the state government, necessary changes would be made in the Acts and Rules and local authorities will be asked to implement the same.</p>

Recommendations which are acceptable with modifications

Para	Recommendation	Reason for not being acceptable	Modification suggested
Para 1 of summary	MoEF to notify provisionally ESZ1, ESZ2 & ESZ3 Talukas	Taluka is a large administrative unit	WG to be delineated at Hobli level and at village level in the fringe areas
Para 6 of Part 1	Boundary delineation criteria of forest area (as per FSI) and altitude	Important Talukas such as Haliyal, Chamrajnagar, Kalghatgi, Hassan etc left out	High Resolution Satellite imageries to be used or the geospatial database of the State to be used
Para 10 of Part 1 of the report	ESZ assignment	assigning eco sensitive zone to the entire taluk would lead to erroneous zonation	It would be appropriate to delineate the eco sensitive zones in the fringe areas at the village level only after consultation with local communities

Recommendations which are acceptable with modifications

Para	Recommendation	Reason for not being acceptable	Modification suggested
Para 13 of Part-I of the report and Para 2.7 of Part-II of the report	Quarry and sand mining: No new licence should be given for quarry and sand mining in ESZ1.	Total ban on quarrying of such materials would bring undue hardship to the people residing in high forest areas.	Quarrying of material like sand, jelly, stones, boulders and laterite stones needs to be permitted on case to case basis as these materials are essential for various development activities like construction of residential buildings , under strict regulations and as per the provisions of existing law in Western Ghats areas.

Recommendations which are acceptable with modifications

Para	Recommendation	Reason for not being acceptable	Modification suggested
Para 2.3 of Part-II of the report	Animal husbandry Animal nutrition – feeding and grazing it has been suggested that grazing restriction imposed on the grounds of forest conservation should be revisited.	In this regard it is to state that grazing by goat is a major impediment to the regeneration of forests	Grazing by goat therefore needs to be discouraged in forests.

Recommendations which are acceptable with modifications

Para	Recommendation	Reason for not being acceptable	Modification suggested
Para 2.8 of Part-I of the report and Para 13 of Part-I of the report	Power and Energy; Micro and mini hydel projects in eco sensitive areas in the Ghats should be designed more to meet local power demand and not feed to the grids as power lines are needed. The report has also suggested that large power plants are allowed in ESZ3 with certain regulations.	In this regard it is stated that the Government of Karnataka is not permitting the mini hydel projects in the forest areas of Western ghats.	The current Government of Karnataka Policy needs to be followed

Recommendations which are not acceptable

Para	Recommendation	Reason for not being acceptable	Modification suggested
Para 2.8 of Part-I of the report and Para 13 of Part-I of the report	Power and Energy; Recommends regulated wind power projects with cumulative environmental impact assessment in ESZ2 and ESZ3.	Since the western Ghats is endowed with many species of avifauna and falls in many migratory paths of various bird's species, establishing wind mill in western ghats will be detrimental to the avifauna conservation efforts.	Thus no wind power projects should be permitted in western Ghats areas.

Recommendations which are not acceptable

Para	Recommendation	Reason for not being acceptable	Modification suggested
Para 2.7 of Part-II of the report	Mining Recommended for exclusion of mining from ESZ1 while it has suggested that in other eco sensitive zones it may be permitted on a case by case basis.	The Government of Karnataka has not been in favour of allowing any mining activities in the region. All the old mining leases in the region that have expired have not been renewed and no new mining lease has been granted.	The Honourable Supreme Court of India, in WP (c) No. 562/2009, has ordered that "No mining operations of any kind in the Western Ghats has to be countenanced."

Recommendations which are not acceptable

Para	Recommendation	Reason for not being acceptable
Para 14 of Part 1 of the report	Western Ghats Ecology Authority(WGEA) :Mandate of WGEA to include regulation and management and planning of all activity impacting eco sensitive zone of Western Ghats.	In this regard it is strongly felt that setting up new regulatory / planning / managing body would lead to only duplicating the functioning and authority of existing institutions like National Board for Wildlife, State Wildlife Board, Pollution Control Board, Bio Diversity Board, etc. It is suggested that it would be appropriate to further strengthen these Institutions and Institutional Mechanisms. Similarly the recommendations for constitution of District Ecological Committee would also lead to duplication Moreover, the suggested Authority is totally undemocratic as it has no people's representatives on the authority.

Recommendations which are not acceptable

Para	Recommendation	Reason for not being acceptable	Modification suggested
Para 2.2 of Part-II of the report	Agriculture Wildlife problems	Culling of wild boar has been recommended which is in contravention of the Wildlife Protection Act and therefore cannot be accepted	This recommendation needs to be dropped

Recommendations which are not acceptable

Para	Recommendation	Reason for not being acceptable
Para 2.5 of Part-II of the report	Forest and Biodiversity	The Karnataka Forest Department has serious reservations about discussions and issues of concerns raised by the committee on the history and scientific management of forests in Karnataka. The biased and one sided arguments of Prof. Madhav Gadgil, regarding the management of Forests by the State Government are totally unacceptable.

Recommendations which are not acceptable

Para	Recommendation	Reason for not being acceptable
Para 2.5 of Part-II of the report	Forest and Biodiversity	<p>Convert JFM into CFM</p> <ul style="list-style-type: none"> • The Report has recommended virtual replacement of the State oriented forest management system by what is termed as CFM (community forest management) system. • The applicability of FRA is legally limited to areas where either tribal communities or other forest dwellers have rights under the provisions of FRA while the concept of JFPM through Village Forest Committees (in notified forests) or Eco-Development Committees(in PAs) is applicable to all forest areas.

Karnataka Specific Recommendations

- Gundy Hydro Electric Project
- FC Act diversion proposal under examination
 - KPCL to survey and demarcate the land, so that tree enumeration can be carried out;
 - KPCL to provide the details of alternate lands for compensatory afforestation.

State Government Initiatives

- Western Ghats Task Force
- Malnad Development Board
- Karnataka Bio-diversity Board
- Karnataka Medicinal Plants Authority

Existing legislative and regulatory measures taken by the State Government and also the status of existing institutional framework relating to ecology and environment preservation

- The existing legal framework
 - the Forest (Conservation) Act, 1980 and Forest (Conservation) Rules,
 - Wildlife (Protection) Act, 1972,
 - Karnataka Forest Act, 1963 and Karnataka Forest Rules, 1969,
 - Karnataka Preservation of Trees Act, 1976,
 - Environment (Protection) Act and
 - Biological Diversity Act, 2002.



THANK YOU!

By Speed Post



**Environment & Forests
(EC-2) Department,
Secretariat,
Chennai 9.**

Adviser (GVS)
Dy. No... 271/R
Date. 21.03.2013

Letter No: 22074/EC-2/2011 - 22, Dated: 15.03.2013

From
Thiru. Mohan Verghese Chunkath, I.A.S.,
Additional Chief Secretary to Government.

To
THIRU K. KASTURIRANGAN,
MEMBER,
PLANNING COMMISSION,
GOVERNMENT OF INDIA,
YOJANA BHAWAN,
NEW DELHI - 110 001.

Secy. in a meeting ft.

ARV. (GVS)

19/3

21.3.13

DD (AL)

Sir,

Sub: Western Ghats Ecology Expert Panel Report -
High Level Working Group - Comment of the
State Government - Forwarding of - Regarding.

Ref: Your D.O. Letter No: 1/1/2010-RE (ESZ) dated
30.8.2012 addressed to the Chief Secretary,
Government of Tamil Nadu.

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With reference to your D.O. letter cited and the earlier letters received from Government of India on this subject I send herewith the views of State Government on the recommendations of Western Ghats Ecology Expert Panel (WGEEP) and connected issues.

At the outset, I mention that there is no State specific recommendation in respect of the State of Tamil Nadu and hence the views are given on the recommendations applicable to all States in the Western Ghats. The views of the State Government on the points mentioned in para 3(I) to 3(VI) of your letter as mentioned as follows:

Para 3. I (a) The recommendations which are acceptable to State Government:

The State Government does not accept any of the recommendations. Many of the recommendations are found to be like after thoughts of the

regulations already in existence for a long time in this State. Hence, the question of fresh acceptability of these recommendations does not arise. As the remarks in regard 3.I (a) and 3.I(b) are quite lengthy they are given separately in the Annexure to this letter.

Para 3. I (b) The recommendations which are acceptable with modifications along with the suggested modifications and reasons for suggesting modifications:

The response is as stated in Para 3 (1) (a).

Para 3. I (c) The recommendations which are not acceptable, along with detailed reasons for not finding them acceptable:

The entire set of recommendations is not acceptable. The State is not in favour of creation of an additional layer of regulatory authority in the form of Western Ghats Ecology Authority (WGEA), as the State, is more than adequately equipped to handle the issues connected with the conservation of Western Ghats mentioned in the report of the Panel.

Para 3. II) What are the existing legislative and regulatory measures taken by the State Government, as also the status of existing institutional framework relating to ecology and environment preservation:

In Tamil Nadu State, we are implementing following State Legislations namely,

- (i) Tamil Nadu Forest Act, 1882
- (ii) Tamil Nadu Preservation of Private Forests Act, 1949
- (iii) Tamil Nadu Hill Areas (Preservation of Trees) Act, 1955
- (iv) Tamil Nadu Preservation of Private Forests Rules
- (v) Tamil Nadu Hill Areas (Preservation of Trees) Rules, 1957
- (vi) Rules for the Management of Toda Patta Lands in the Nilgiris (specific to Nilgiris District of Western Ghats)
- (vii) Tamil Nadu Timber Transit Rules 1968
- (viii) Tamil Nadu Rosewood Trees (Conservation) Act, 1994
- (ix) Sandalwood Possession Rules, 1970

These are basic enactments implemented in the State of Tamil Nadu including Western Ghats.

Tamil Nadu Preservation of Private Forests Act, 1949 and Tamil Nadu Hill Areas (Preservation of Trees Act) 1955 are ecology based legislations enacted during 1949 and 1955 respectively.

Tamil Nadu Preservation of Private Forests Act, 1949 enacted basically for preserving forests on private land. In Tamil Nadu the major hilly parts lie in Western Ghats and the State Government was aware and committed to preserving ecology and that is the reason the Assembly passed enactment as early as in 1949. Although the lands belong to private individuals, but its ecology has still been intact. Similarly Tamil Nadu Hill Areas (Preservation of Trees Act) 1955 was enacted to provide for regulation of the cutting of trees and cultivation of land in Hill Areas in the State of Tamil Nadu. The preamble of this Act is to stop indiscriminate cutting of trees in hill stations in Tamil Nadu and also to prevent the deforestation and soil erosion and also to preserve the special characteristics of the hill areas as regards landscape, vegetal cover and climate. In a nutshell, these two legislations namely, Tamil Nadu Preservation of Private Forests Act, 1955 and Tamil Nadu Hill Areas Preservation Act, 1955 are totally ecology based legislations and these have achieved their objective in this State by preserving ecology in hilly regions especially Western Ghats.

Apart from Forest Acts and Regulations, the Government of Tamil Nadu constituted Hill Area Conservation Authority(HACA) by Government Order No:44, Planning and Development Department, Dated 2.4.1990 and Government Order No: 49, Housing and Urban Development Department dated 24.3.2003. Under this regulatory authority, (HACA), 9 Districts and 31 taluks falling in Western Ghats portions of Tamil Nadu are covered. Only the State of Maharashtra has more number of taluks (35) affected. Under this regulatory authority, agriculture, Industries, Energy, Textile, Manufacturing of glass, rubber industry, infrastructure projects, other projects like Holiday villages, hotel and resort complexes are covered. Without the permission of HACA in the notified area, no activity can be undertaken. HACA is basically intended for preserving ecology in Hill areas including Western Ghats.

The existing State legislation like Tamil Nadu Forest Act, 1882, Sandalwood possession Rules, Tamil Nadu Rosewood Trees (Conservation) Act, 1994, Tamil Nadu Private Forest Act, 1949, Tamil Nadu Hill Areas (Preservation of Trees) Act, 1955 and Authority like Hill Area Conservation Authority are very appropriate and adequate legislations for protecting the ecology of Western Ghats and no separate legislation /regulations/Authority are required. This legislative framework has been time tested and has been upheld right up to the Hon'ble Supreme Court.

Para 3. III) What are your views on the adequacy of the existing Central Government legislations and regulatory systems relating to ecology and environment in the context of the issues brought out in the WGEEP report? State Government's views on the need for their improvement/strengthening.

The existing central legislations namely, Wildlife Protection Act, 1972, Forest (Conservation) Act, 1980 and various Supreme court directions in

202/ 1995 (Godavarman Tirumalpad Vs. Union of India), Environment (Protection) Act 1986 and its subsidiary legislations are being implemented in the State of Tamil Nadu. Further three famous tiger reserves namely, Kalakkad Mundanthurai Tiger Reserve, Anamalai Tiger Reserve and Mudumalai Tiger Reserve fall in Western Ghats Region of Tamil Nadu. In these three tiger reserves notified under section 38(V) of Wildlife Protection Act, no activities are permitted without prior permission from the Hon'ble Supreme Court. Hence there is complete moratorium on any activity inimical to conserve ecology in these areas. The Environment (Protection) Act, 1986 and its subsidiary legislations are implemented in Western Ghats Region of Tamil Nadu in letter and spirit by Tamil Nadu Pollution Control Board and Department of Environment.

The Wildlife Protection Act, 1972 is implemented in this State in letter and its spirit. This central legislation is governed by its schedules. Hence the flora and fauna listed in Wildlife Protection Act enjoy protection irrespective whether it is found in protected area or elsewhere. Offences pertaining to Schedule I and Schedule II animals are cognizable and non-bailable and there is minimum punishment of three years. Hence existing Wildlife (Protection) Act, 1972 is more than adequate to protect the flora and fauna found in Western Ghats Region of Tamil Nadu.

The Forest (Conservation) Act 1980 and various directions issued by Supreme Court since 1996 onwards are being implemented by Tamil Nadu in letter and spirit. Even Hon'ble Supreme Court in judgement in 202/95 (Godavarman Tirumalpad Vs Union of India) in its judgement dated 12.12.1996 have banned felling of spontaneously grown trees in Tamil Nadu. Hence even for cutting a single tree of spontaneous growth in Tamil Nadu including Western Ghats, a permission from Supreme Court is required. There is no violation of Forest (Conservation) Act, 1980 and its guidelines issued by Ministry of Environment and Forests in Western Ghats Region of Tamil Nadu. Therefore, the existing Forest (Conservation) Act, 1980 is more than adequate and no change is required.

The Government of Tamil Nadu is of the view that existing central legislations namely, Wildlife (Protection) Act, 1972, Forest (Conservation) Act 1980 and Environment (Protection) Act, 1986 are more than adequate to protect the ecology of Western Ghats and no additional central legislation/regulatory authority is required.

Para 3. IV) What is the implication of UNESCO heritage site recognition of some part of the Western Ghats as also of international commitments relating to biodiversity and other environment related areas?

Based on a proposal from the Tamil Nadu Forest Department to include six locations in the Western Ghats in Tamil Nadu as part of the serial nomination of the Western Ghats of India, the Government of India submitted the detailed proposal to the UNESCO for inscribing as World Heritage Site. **The World Heritage**

Committee has recommended the inscription of Western Ghats (India) and the UNESCO has inscribed Western Ghats (India) under the World Heritage Site (Natural Properties) in its 36th Session held in 2012. The Western Ghats were inscribed under criteria 9 and 10 of the Operational Guidelines of the World Heritage Convention. The sub-clusters for Tamil Nadu include Kalakad-Mundanthurai Tiger Reserve, Srivilliputtur Wildlife Sanctuary, Tirunelveli Forest Division (part), Karian Shola National Park, Grass Hills National Park and Mukurti National Park.

All these heritage sites are already covered by the Wildlife (Protection) Act 1972, Forest (Conservation) Act 1980 and various Acts enacted by Government of Tamil Nadu, which provide these areas a very high status of protection and conservation. Hence, the additional agency like WGEA is not considered necessary in view of the existing legal provisions.

Para 3. V) State Government's comprehensive analysis on economic implications of implementing the recommendations of WGEEP. Such an analysis may take into account all the pros and cons of implementing the recommendations:

The Panel report has included the entire area of the chosen Western Ghat taluks into one of the categories of Ecologically Sensitive Zone (I,II,or III), without taking into account the present level of development and the future growth needs of the States in these areas. The multiplicity of the sectors involved and the complexity of the interrelatedness of these sectors make it difficult to evaluate the economic implications in accurate quantitative terms. However, it will suffice to state that the regulatory framework, recommended by the Panel is expected to put strong impediments in the developmental process, particularly the industrial development in these areas. For the same reasons both Maharashtra and Kerala have also vehemently opposed the setting up of Western Ghats Ecological Authority.

Tamil Nadu, with its high economic growth, trajectory, necessarily needs concurrent industrial and infrastructure development. Tamil Nadu is one of the leading States, which has got adequate ecological and environmental safeguards by way of policies, regulations, programmes/action plans and also institutional mechanisms for implementing the same for achieving the goal of conservation and sustainable management of its natural resources. Hence, the proposed classification of the Western Ghat taluks of the State into different Zones of sensitivity and the constitution of WGEA to oversee various regulations are not at all acceptable to the State Government.

Para 3. VI) Does the State Government have any regional planning process, which takes into account the ecology and environment preservation of Western Ghats while considering the developmental and livelihood issues in planning? How can the recommendations of WGEEP help in improving this planning process?

Considering the ecological fragility of the hill areas of the Western Ghats region, Tamil Nadu Government have enacted specific rules to regulate various

developmental activities, including regulation of land use, infrastructure and mining development, tree felling etc. in specific identified regions falling within the Western Ghats. Some of these are: the Tamil Nadu Hill Area (Preservation of Trees) Act, 1955 applicable to certain specific hill areas of the State, considering their ecological importance; the Tamil Nadu Preservation of Private Forests Act, 1949 to deal with the preservation of natural vegetation outside notified Government forests; Hill Area Conservation Authority (HACA) to regulate specific development activities in notified villages that are environmentally sensitive both in the Western Ghat and Eastern Ghat regions of the State.

The UNESCO's Man and Biosphere Reserve (MAB) programme adopts a regional approach in developmental planning. Tamil Nadu has two biosphere reserve areas falling within the Western Ghats, viz., Nilgiri Biosphere Reserve and the Agasthiyamalai Biosphere Reserve. Western Ghat Development Programme (WGDP), Hill Area Development Programme (HADP), the scheme for mitigation of depredation by Asian elephants, Project Elephant, Project Tiger etc. schemes, being implemented in the State also follow the regional planning approach, with even interstate cooperation. All these programmes are broadly incorporating the development and livelihood issues of the concerned planning area. Considering the loss of livelihood in Western Ghat areas due to wild animal attack and taking cognizance of the need to quickly compensate the loss sustained by the people, the State Government have constituted a corpus fund of Rs.2.5 crores for timely disbursement of compensation amount.

It is felt that the recommendations of the WGEE panel will not in any way add to the effectiveness of the regional planning process that is already in place.

In conclusion, it is stated that the Government of Tamil Nadu is not in agreement with the report of the Western Ghats Ecology Expert Panel and wishes to reiterate that the Western Ghat Ecology Authority need not be constituted.

Yours faithfully,

(Signature)
12/03/13.

for Additional Chief Secretary to Government

Copy to

Dr.V. Rajagopalan, I.A.S.,
Secretary, Government of India,
Ministry of Environment and Forests,
Paryavaran Bhawan, CGO Complex, New Delhi - 110 003

Shri Ajay Tyagi, I.A.S.,
Joint Secretary, Government of India,
Ministry of Environment and Forests,
Paryavaran Bhawan, C.G.O. Complex, Lodhi Road, New Delhi - 110 003.

ANNEXURE

Sector	Recommendation of WGEEP (Page 41 of Part I report)	Implication of recommendation of (WGEEP)	Present Status in State of Tamil Nadu
1	2	3	4
Across the Western Ghats	Genetically modified crop should not be allowed.	No additional implication is envisaged	Already under implementation in the State. No separate regulation is required.
	Phase out the use of plastic bags in shops, commercial establishments, tourist spots on a priority basis (not more than three years)-	No additional implication is envisaged	The State is implementing the provisions of the national legislation viz., 2011 Plastic Waste (Management and Handling) Rules across the State, which also includes the Western Ghat region. Further the local bodies, which are responsible for enforcing the provisions relating to the trade, use and disposal of plastics also make rules under the respective Municipal laws regarding the thickness of plastic bags that are permitted for trading and use in the local body areas. The State is also in the process of enacting its own set of rules regarding the use and disposal of plastics in the name and style of Non bio-degradable Garbage (Control) Act.

			Therefore, it considered that the above existing and proposed provisions are adequate to deal with the use and disposal of plastics in the Western Ghat region.
Land use	For all settlements and built areas/to be developed areas, certain types of areas would be no-go areas, including water courses, water bodies, special habitats, geological formations, biodiversity rich areas and sacred groves.		The existing framework prohibits diversion of water courses and water bodies for any other use except in the rarest of rare cases.
	Special Economic Zone should not be permitted	It will completely affect the development of new SEZs in the notified taluks.	The existing legal provisions like the Environmental Protection Act are sufficient to decide on the appropriateness of siting a SEZ in different parts of the State. Therefore, this recommendation is not agreeable.
	New hill stations should not be allowed	The scope for forming new hill station in the State will be completely eliminated	As there is scope for developing new hill stations without actually affecting the ecology, a blanket ban on new hill station is not acceptable but can be decided on a case to case basis

	Public lands should not be converted to private lands	New assignment of lands to the poor will be completely ruled out.	Assignment of Government lands to the poor in the Western Ghat region need not be banned. Instead, assignment can be considered on a case to case basis, taking into account the ecology and environment
	Change in land use not permitted from forest to non-forest uses or agricultural to non-agricultural except agricultural to Forests (or tree crops) except when extension of existing village settlement areas to accommodate increase in population of local residents.	This provision will completely put a ban on even diversion of small extent of forest lands for essential development projects of the Government, which will have huge implication on meeting the genuine site-specific development requirements for the people.	Already enforced by Tamil Nadu Government through implementation of the provisions of Forest Conservation Act, Tamil Nadu Hill Area (Preservation of Trees) Act 1955 and Tamil Nadu Preservation of Private Forests Act, 949. Tamil Nadu is promoting tree cultivation on farmers land under Tree Cultivation in Private Lands component in a big way under Tamil Nadu Biodiversity Conservation and Greening Project.
	For existing built structures such as hotels, resorts etc. the Tourism policy of the Ministry of Environment and Forests, appropriately refined by WEGA to be followed.	No additional implication is envisaged.	So far as this State is concerned, developments in major hill stations like Udhagamandalan, Coonoor, Kodaikanal and Yercaud are governed by Tamil Nadu Hill Station Building Rules, 1993. A Separate committee viz., Architectural and Aesthetics Aspects Committee (AAA Committee) is also in

			<p>place to assist the District Collector of these hill stations to take decisions on approving development proposals. Apart from the above major hill stations, hill areas containing even small hillocks have been identified throughout Tamil Nadu. Major developments like buildings having plinth area more than 300 sq.m., mining activity and all other activities in the Hill Areas are monitored and clearance for development proposals are given by the apex body called Hill Area Conservation Authority (HACA). HACA is functioning under the Chairmanship of the Secretary to Government, Housing and Urban Development Department and Director of Town and Country Planning as its convener and having various Secretaries to Government, Departments and officials from various departments as Members of the Authority. HACA clears the proposal depending on the recommendations of the departments viz., Forest, Agricultural Engineering, Geology</p>
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			and Mining and based on the specific recommendation of the District Collector. Hence strict regulations are already in force.
	Road and other Infrastructure expansion plans to be submitted for EIA Scrutiny	This will lead to inordinate delay in executing needy projects.	Preparation of EIA reports and their scrutiny before permitting any project covered under Environment Impact Assessment Notification 2006 is already enforced by the State Pollution Control Board.
Building Works consisting of green technology and green building material	A building code should be evolved by the WGEA which include inter-alia eco-friendly building material and construction methods, minimizing the use of steel, cement and sand, providing water harvesting methods, non-conventional energy and waste treatment. The application or detailing of the framework would be done by local authorities to suit local conditions.	There is no additional implication envisaged.	These recommendations are already under implementation through general or specific guidelines. For example, the State is a leader in Rain Water Harvesting in all public buildings. Establishment of water harvesting structures in private buildings is also insisted upon by the local bodies and Urban development authorities. Hence, separate building code is not considered necessary.

<p>Area Treatment plot development / Land scaping in the open area of plot</p>	<p>Certain recognized best practices of construction / development such as top soil conservation, tree conservation etc, should be followed as per guidelines of Green Building certificates of Eco Housing</p>		<p>Action have already been initiated by Government for restoration of wetlands. Further Tamil Nadu Forest Department have proposed removal of alien species like lantana, wattle from forest area as per Working Plan / Wildlife Management Plan.</p>
	<p>Certain activities eg, filling of marshes / wetlands, introduction of alien invasive species are not permitted</p>	<p>There is no additional implication envisaged.</p>	<p>The marshes, wetlands which are considered as ecologically sensitive are not set apart for any development. Recommendations are generally under implementation. Tamil Nadu Forest Department as a policy has already stopped planting of exotics in the hill areas.</p>
	<p>The area that may be paved is to be restricted; paving ground areas may be done in such a manner that there is no change in the run-off/permeability of the plot overall before and after paving.</p>	<p>There is no additional implication envisaged.</p>	<p>Recommendations are already under implementation.</p>
<p>Waste Treatment</p>	<p>Local Authorities should be made responsible to for developing regional system for handling</p>	<p>There is no additional implication envisaged</p>	<p>There are already existing legal provisions by way of Municipal Solid Waste (Management, Handling and trans boundary</p>

	hazardous, toxic biomedical wastes as well as recyclable materials.		movement) Rules 2008, Biomedical Waste (Management and Handling) Rules 1998 and Hazardous Waste (Management and Handling) Rules 1989 with enabling powers for the various agencies of the State Government. Therefore, no separate prescriptions are considered necessary. The State is a leader in innovative treatments of sewage and solid waste.
	No hazardous or toxic waste processing units	No additional implication is envisaged	The existing Hazardous Waste (Management and Handling) Rules 1989 with enabling provisions for the various agencies of the State Government is adequate to address the issue.
Waste water management	- Mandatory for all lay outs/building developments Should be such as to permit reuse, recharge, recycling as locally appropriate and permit recovery of energy wherever possible	There is no additional implication envisaged.	Provisions of Water (Prevention and Control of Pollution) Act 1974 are considered adequate. Hence no new regulation is required.
Water	Decentralized water resources management plan at local self-Government level		It is under examination.

	Protection of high altitude valley swamps and water bodies	There is no additional implication envisaged.	Already under implementation.
	Catchment area treatment plans of hydroelectric and major irrigation projects.	There is no additional implication envisaged.	Already under implementation.
	Improve river flow and water quality by scientific riparian management programmes involving community participation		Already under implementation. The State (IAMWARM) project is worth mentioning.
	Water Conservation measures through suitable technology and public awareness.	No additional implication is envisaged	Already under implementation. The system is already in vogue so as to normally not disturb the environment and ecology, while undertaking construction activities in the Western Ghats.
	Inter basin diversion of river in western Ghats should not be allowed.	No new dam can be constructed.	Such works wherever contemplated, are being examined with full environmental concern.
Agriculture	Promote organic agricultural practices	No new implication envisaged.	Agriculture Department is already promoting organic agriculture throughout the State. The State is in the process of drafting an 'Organic farming Policy'

	Discourage cultivation of annual crops in slopes exceeding 30%	No new implication envisaged.	This system is already practiced under the provisions of the Tamil Hill Areas (Preservation of trees) Act, 1955.
	Incentive payment for sequestration of carbon in soil	The recommendation will be difficult to implement.	No incentive is paid but sequestration is encouraged.
	No Genetically Modified Crops are encouraged.	No new implication envisaged.	The State Government has already taken the same stand. In any case, this is in line with prevailing National Policy.
	Phasing out of all use of chemical pesticides /weedicides	No new implication envisaged.	State is encouraging the use of bio-pesticides to slowly phase out the use of chemical pesticides/weedicides. Phasing out will be a slow process.
	Phasing out of use of chemical fertilizers.	No new implication envisaged.	State is encouraging the use of bio fertilizers and green manure to slowly phase out chemical fertilizers.
Animal Husbandry	Introduce incentives for maintenance of land Races of livestock		Generally under implementation. Further progress will be achieved in future.
	Redeploy subsidies for chemical fertilizers towards maintenance of livestock and production of biogas and generation of organic manure		

	Discourage cultivation of annual crops in slopes exceeding 30%	No new implication envisaged.	This system is already practiced under the provisions of the Tamil Hill Areas (Preservation of trees) Act, 1955.
	Incentive payment for sequestration of carbon in soil	The recommendation will be difficult to implement.	No incentive is paid but sequestration is encouraged.
	No Genetically Modified Crops are encouraged.	No new implication envisaged.	The State Government has already taken the same stand. In any case, this is in line with prevailing National Policy.
	Phasing out of all use of chemical pesticides /weedicides	No new implication envisaged.	State is encouraging the use of bio-pesticides to slowly phase out the use of chemical pesticides/weedicides. Phasing out will be a slow process.
	Phasing out of use of chemical fertilizers.	No new implication envisaged.	State is encouraging the use of bio fertilizers and green manure to slowly phase out chemical fertilizers.
Animal Husbandry	Introduce incentives for maintenance of land Races of livestock		Generally under implementation. Further progress will be achieved in future.
	Redeploy subsidies for chemical fertilizers towards maintenance of livestock and production of biogas and generation of organic manure		

	No pesticide/weedicide application.	No additional implication envisaged.	Already in practice.
	Extraction of medical plants with strict regulation	No additional implication envisaged.	No extraction of any medicinal plant in forest area is permitted.
Forestry: Private lands	Introduction of Incentive payment as "Conservation service charges" for maintenance of natural vegetation for small land holders		This can be considered as a promotional effort to preserve the existing natural vegetation in private lands.
	No monoculture plantation of exotics like eucalyptus	This will infringe upon the rights of individual land holders from putting the land to an economic activity which will be beneficial to him.	This recommendation is not agreeable, in view of its larger economic implications to the individuals.
	No pesticide/weedicide application	No additional implication envisaged.	Application of pesticide/weedicide will be generally discouraged and application of bio-pesticide encouraged.
	Encourage planting of endemic species.	No additional implication envisaged.	Already implemented.
	Quarrying with strict regulation	No additional implication envisaged.	Regulated through Hill Area Conservation Authority.
	Introduce incentive as "Conservation service charges" for maintenance of sacred groves.	No additional implication envisaged.	This can be considered as a promotional effort to preserve the existing natural vegetation and biodiversity.

	Maintenance of Biodiversity on private lands by Biodiversity Management Committee.	No additional implication envisaged.	Process of Biodiversity Conservation has already been initiated by Tamil Nadu Biodiversity Board. One Community Reserve has been notified in the state for biodiversity conservation under wildlife Protection Act 1972 during 2009.
Mining	No new licence to be given for mining; Where mining exists it should be phased out in five years by 2016 -Detail plans for environmental and social rehabilitation of mines to be closed. -Illegal mines to be stopped immediately.	No additional implication envisaged.	The incidence of mining in the Western Ghats is negligible or of no significance as far as the State is concerned. This State already has a Hill Area Conservation Authority (HACA), which examines the environmental and other aspects of mining and quarrying in the hill areas. Further, all applications for mining are being examined with reference to the provisions under the Environmental Impact Assessment notification 2006 by the respective statutory agencies. Rehabilitation plans for closed mines is part of the EIA process.
Quarry and sand mining	Where exists should be controlled effectively for environmental and social impacts immediately.	No additional implication envisaged.	The incidence of quarrying and sand mining in the Western Ghats is negligible or of no significance as far as the State is concerned. This State already has a Hill Area Conservation Authority (HACA), which examines the environmental and other aspects of sand mining

			and quarrying in the hill areas. Further, all applications for sand mining and quarrying, if any are being examined with reference to the provisions under the Environmental Impact Assessment notification 2006 by the respective statutory agencies.
	No new licence to be given for quarry and sand mining	No additional implication envisaged.	Grant of any new licence is considered under the relevant provisions of HACA and EIA.
Polluting Industry (Red/Orange)	- No new polluting industries - For existing Industries switch to zero pollution by 2016 and be subject to strict regulation and social audit.	No additional implication envisaged.	The siting of polluting industries in ecologically sensitive areas and areas adjoining forests is already governed by the provisions of the EIA notification, which is considered adequate. Tamil Nadu is already implementing the Zero Liquid Discharge (ZLD) policy in respect of polluting industries. Further, as per the New Industrial Policy of this Government, now in force, the industries which set up Dedicated Effluent Treatment Plants (ETP) and / or Hazardous Treatment Storage and Disposal Facility (HWTSDF) are given suitable incentive.
Non polluting Industry (Green/Blue)	- With strict regulation and social audit	No additional implication envisaged.	Already under implementation.

	- Local bio resource based industry should be promoted. All should be strictly regulated and be subject to social audit.		
	- Local Bio-resources based industry should be promoted		<p>Already under implementation. As per the New Industrial Policy 2007, it provides suitable support and encouragement to investors willing to set up ethanol units through sugarcane, and grain-based routes. This would enable better returns for dry land farmers who cultivate sago, millets etc.,</p> <p>A separate Tamil Nadu Biotechnology Policy is being formulated.</p>
Power Energy /	Educate the energy consumer about the environmental and social impacts of energy production and the need for reducing "luxury" demand		
	Encourage demand side management; enhanced energy efficiency across sectors		
	Launch 'smart' campaigns as key components of demand side management, focusing on smart: grids, buildings,		

	power, logistics and motors.		
	Promote decentralized electricity, use of solar power		No thermal power plants function in Western Ghats region. Hydro electric power and solar power is already being encouraged. Tamil Nadu Energy Development Agency (TEDA) is already developing non-polluting sources of power. If hydroelectric power generation is objected, it will be detrimental to the development of the country. Wind power is green power and due to availability of high speed wind at higher attitude, wind power needs to be promoted. All the power generation works are carried out will full consideration to the environmental conservation.
	- No forest clearance or stream diversion for new project		
	- Promote small scale, micro and pico hydropower system		
	- No new thermal power plant		
	- Strict Environmental regulation of existing thermal power plants		
	- Existing thermal plants to promote alternate use of fly ash		
	- No large scale wind power project.		
Transport	- No new railway lines and major roads except where it is highly essential		Already in the Western Ghats region the Highways Department does not undertakes any new formation/extension of

	- Avoidance of new highways express ways.		existing roads/construction express way. Only improvement works in the existing roads are being carried out.
Tourism	- Ecotourism policy of MoEF, promote minimal impact tourism in the region - Strict regulation for waste management, traffic and water use.	These is almost moratorium of all type activities in core area. This will affect livelihood and lead into non co-operation from people residing in the areas.	Already implemented by Tamil Nadu Forest Department from December 2012.
Education	Reconnect Children any youth to local environment through education programmes		Department of Environment and Department of School Education are already implementing it through around 5000 Eco-clubs in schools. The State is adding to these numbers year by year.
Science and Technology	- cumulative impact assessment for all new projects such as dams, mines, tourism and housing and permission to be given within carrying capacity - Focus research on perfecting green technology and make affordable for common people.		Western Ghats region is already conserved through a number of regulations and full care of conservation issues is taken if any new project is proposed.

Information Management	- Build on the western Ghats database of WGEEP		State already has the hydrological database and all the relevant information. The regulations are self-sufficient and no new regulations are required.
	Update and upgrade a hydrological database of rivers and consolidate the ecological database and information at river basin level		

MOHAN VERGHESE CHUNKATH
 ADDITIONAL CHIEF SECRETARY TO GOVERNMENT

//TRUE COPY//

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 14/03/13
 SECTION OFFICER.

RESPONSE OF THE GOVERNMENT OF KERALA TO THE RECOMMENDATIONS OF THE WESTERN GHATS ECOLOGY EXPERTS PANEL

INTRODUCTION

For the reasons and with the objectives stated in office Order No: 1/1/2010RE (ESZ) dated 4-3-2010, the Ministry of Environment & Forests Government of India constituted the Western Ghats Ecology Experts Panel (WGEEP) for a period of one year from the date of issue of the order;

- (i) to assess the current status of ecology of the Western Ghats region.
- (ii) to demarcate areas within the Western Ghats Region which need to be notified as ecologically sensitive and to recommend for notification of such areas as ecologically sensitive zones under the Environment (Protection) Act, 1986. *(highlighted)*

The WGEEP submitted the two volume report to the Ministry of Environment & Forests on 31st August 2011 and the Ministry has uploaded the Report on its website on 23rd May 2012. The Ministry has asked for public feedback within a period of 45 days i.e. on or before the 5th July 2012. Government of Kerala got a copy of the report on 26-11-2011. Government conveyed their stand on the report, to the MoEF vide letter No 3527/A2/ 11/ Envvt dtd 31-1-2012. Copy of the same is enclosed as **Annexure I**. There occurred serious discussions in the state legislative assembly on the impacts of the recommendations on the development front especially power generation. State Government has expressed their reservations and dissent to the recommendations detrimental to the development plans of the state vis-à-vis the recommendations prohibiting or regulating such plans. There after the State Government set up the expert committee to examine the report of the WGEEP to identify the recommendations that the state would have to object being impractical or unfavourable to the interests of the state. Meanwhile as per office order No: 1/1/2010-Re (ESZ) Pt. dtd 17-8-2012 the MoEF constituted a high level working Group under the Chairmanship of Dr: K. Kasturirangan, Member (Science) Planning Commission to examine the WGEEP report in a holistic and multidisciplinary fashion keeping in view of the comments received from the state governments, Central Ministries, stakeholders and other related important aspects. The terms of reference includes the most significant issue i.e the constitutional implications of centre –state relations with respect to conservation and sustainable development of the Western Ghats region. The Working Group has been directed to submit an action plan to implement the WGEEP report in the most effective and holistic manner within a period of two

months from the date of issue of the order. The Chairman has called for specific comments of the state Government to engage in discussions on various issues. This memorandum of comments on the recommendations of the WGEEP has been filed before the High Level Working Group at this juncture.

2. UNACCEPTABLE ZONATION

The Western Ghats Regions of the state of Kerala are by and large protected under the forest laws and other conservation measures adopted by the state Government. The ecologically fragile areas of the state have been statutorily determined under the Kerala Forests (Vesting and Management of Ecologically Fragile Lands) Act 2003. Kerala has a total forest area of 11,125.59 sq.kms including 5 National Parks and 7 wild life Sanctuaries, covering 28.88 percent of the total land area of Kerala. This is greater than the national average of 19.50. The entire forest area is spread over the Western Ghats.

But the panel has proposed a zoning plan for the WGs, recommending that the Ghats including the contiguous midland areas of the state should be classified into three eco-sensitive zone with various degrees of restriction on land use for development and agriculture. It had also recommended for setting up three tier authorities to monitor implementation of the report and the management of the eco-sensitive zones. As to the this approach, the following findings of the WGEEP in para 9, page 17 of its report on the criteria adopted by the Pronab Sen Committee that the Western Ghats qualifies as an ESA is relevant: The WGEEP found that, 'However a uniform set of regulations cannot, obviously be promulgated under the EPA for this entire region'. Hence WGEEP recommended adoption of a graded or layered approach and suggested that the entire Western Ghats be characterized as comprising (1) Regions of highest sensitivity or Ecologically Sensitive Zone 1(ESZ1), (2) Regions of high sensitivity or ESZ2, and the remaining (3) regions of moderate sensitivity SEZ3. These will be complementary to areas already declared as Protected Areas, which will continue to be managed under regulations prescribed by pertinent acts such as the Wild Life Protection Act.

The main complaint against the recommendations on zoning of the Western Ghat regions (WGs) of the state is that the WGEEP has done it within the geographic limits of the whole WGs jointly as a single unit, without considering the special problems confronted in Kerala as to land use, population pressure, socio-economic factors etc. As a matter of fact, the yard stick for recognising an area as a part of WG is more stringent for Kerala compared to all other WG states. Any place above 150 mts of altitude is categorised as WG in Kerala whereas it is above 500mts for other

states. The WGEEP evolved the zonation as in paras 9 and 10 of the report (pages 16 to 21) based on a study published in *Current Science* in January 2011.

(*Gadgil, M. et al. 2011*) titled Mapping Ecologically Significant and Sensitive Areas of Western Ghats: Proposed Protocols and Methodology. The authors were of the following view on grading the Ecologically Sensitive Areas (ESA)

‘There could be no immediate consensus on how to weigh each of these attributes but one simple way (but obviously unacceptable to all) would be to weigh the three criteria (Abiotic, Biotic and socio-cultural) equally. We wish to continue such a process with the hope that once the results are out there could be further discussions reevaluation, and revision of the ESAs. However for the time being we propose that all the three attributes viz: biological, geo- climatic and public perception are developed and graded as given in the table 1 below. Each of them is divided in to three categories, based on the importance of the biological component, environmental sensitivity and valuation by the public and are ranked accordingly. These attributes are later overlaid as shown in Table. The biological and geo-climatic layers are first combined and public perception layer is overlaid on this to arrive at the different grades of ESAs.

Once the grids are assigned with these grades/ranks, areas for demarcating ESAs are identified as set of consecutive grids with similar grading/ranking. However the more fine scale borders of the ESAs can be developed with local inputs from the forest managers and the stake holders before they are legally declared as ESAs.

Conclusions:

We are aware that the protocol and methodology provided here for mapping ESAs cannot be final and may not be directly adaptable without further discussions. However it is our hope that responses from a wider section of experts and the consequent discussions help significantly towards developing a more generic methodology on which there could be more consensus. In the meanwhile, however WGEEP has been compiling the datasets required for the purpose for mapping the ESAs along Western Ghats using these steps.

Any constructive suggestions during the process would be highly appreciated’.

However when it came to the application of the grid concept in section 9.1 of the report, it is done based only on the scientific exposition without any further verification or consultation. When the authors themselves have admitted that the purpose of the paper published in the ‘*current science*’ was first to invoke discussions and suggestions from a wider section of experts on the conceptual and methodological details arrived at by the WGEEP’ and also conceded that ‘As the methodology described in Section 20 indicates we could not compile the full set of data indicated above , nor have we been able to cover all the criteria proposed by the Pranob Sen committee, primarily due to lack of time.’ (*Vide Box: 4, Section 9.1, page 18*) This limitation faced by the committee is also admitted in section 6 of the report on boundaries of the Western Ghats. In page 7 of the report of the WGEEP the Panel has revealed that ‘We must however admit that the Western Ghats Ecology Authority,

when put in place, will have to take another look at the boundaries we suggest, since we have not been able to find time to examine and refine these with enough care.
(Highlighted)

Again in Section 10 of the report at page 25 the Panel has commented that ¹

'It will be clearly be desirable to put in place a system of zonation that jointly considers micro-watersheds and village boundaries to decide on Specific limits of ESZ1, ESZ2 and ESZ3 as well as to arrive at a locality-specific management plan. This would be a task that will have to be initiated by the Western Ghats Ecology Authority through a broad-based participatory process when WGEA is put in place. However, as a first step, we suggest the Ministry of Environment and Forests provisionally notify the initial limits of ESZ1, ESZ2 and ESZ3 based on WGEEP analysis. This may be most appropriately done at Taluka/ Bloc level. With this in view, we have gone ahead and assigned ESZ1, ESZ2 and ESZ3 levels to all the 134 talukas of Western Ghats. The assigned level to the taluka is the ESZ that covers the largest fraction o the taluk'.

The report *per se* reveals that it is merely based on the incomplete scientific exposition in Appendix 4 of the report and not based on the further improvements suggested in Box 4 thereof that the zonation has been done. The State Government is particularly unhappy about the approach of the panel in making a crucial recommendation based on incomplete scientific exposition. It cannot but be said that the Panel has failed in identifying and demarcating the appropriate areas **within** the western Ghats which need to be notified as ecologically sensitive to recommend for notification of such areas as Ecologically sensitive Zones under the environment (Protection) Act, 1986, as it had been specially mandated. Therefore the zonation particularly ESZ-2 and ESZ-3 as has been made by the WGEEP cannot be accepted either as scientific, or in conformity with its mandate to that task and hence unacceptable to the state government.

36 out of 63 taluks, 80 out of 152 Block panchayats and 546 out of 978 Grama Panchayats of the state fall within the Western Ghats Region. However the facts stated in prepara do not justify the confirmative assignment. Whereas the report in Section10 page 21 speaks of separate treatment of Western Ghat Regions of each state for the purpose of ESZ assignment, there is no apparent evaluation of attributes with the criteria to be used for each of them in respect of Kerala. Instead it is generally stated that the extent of area covered by existing protected areas plus ESZ1 and ESZ 2 together will be around 75% and the extent of ESZ3 will normally be around 25% of the total area which in the absence of verifiable data and details and in the lights of the facts stated in Annexure I is unacceptable to the state Government. Also in Section 6 of the report the WGEEP itself has stated that;

²the higher mountain ranges further south of Kodagu (about 12degrees N) including the Nilgiris, the Anamalais, the Cardamom Hills and the Agasthyamalai range, being

referred to as distinct geological entity named as the southern block (Mani 1974). For our purposes we use the term Western Ghats in the broader sense to include the entire tract of hills from the Tapi to Kanyakumari.’

In the matter of identification of the eastern and western boundaries of the Western Ghats the WGEEP has adopted the following criteria:

‘For the purpose of defining the boundary of the Western Ghats, we used altitude and forest area or vegetation as drivers defining the boundaries. Our operational definition for therefore is forest area above a certain altitude. Accordingly we demarcated the eastern edge by identifying the forested areas that are above 500 m; the rationale for this cut off followed from the digital data which showed that, in general, 500m constitutes the elevation at which the Western Ghats rise discretely from the Deccan plateau. For the western edge, we used a cut off of forested areas at 150 m and above as the Ghats fall more steeply down to the coastline as compared to the eastern side of the Ghats. We also found that whenever the forested areas at elevations of more than 150m drop directly into the ocean or within a distance of 1km of the coastline, it was difficult to define the coast. Hence in such situations (as in parts of (Maharashtra), the coastline itself was considered as the western edge of the Ghats. We used the land-use map developed by Forest Survey of India to demarcate forested areas, and GTOPO30 (Global 30 Arc-Second Elevation Data Set) for altitude details at 1 x1km resolution. The boundaries were defined by overlaying these two datasets and following the criteria defined above. We also used the annual cumulative NDVI (normalized differential vegetation index) values as a surrogate for vegetation or forest cover but eventually found that the Forest Survey of India’s map per se was sufficient for the purpose’.

A perusal of the report as such gives the inference that the Western Ghats for the purpose of the WGEEP as far as it relates to the state of Kerala had to be considered as the forested hill tracts which is a distinct geographical entity as far as the state is concerned. In so far as the boundaries of the Kerala Western Ghats could have been distinctly differentiated and fixed with reference to biological, Geo-climatic, attributes and stake – holder evaluations it was not necessary that arbitrary and irrational zonation methodology was adopted and the Western Ghats regions stretched to in appropriate areas where regulations are proposed to be clamped for conservation of the Ghats

The geographical features of Kerala are distinct and dissimilar compared to the WG states of the Deccan plateau, making it possible to divide the state vertically in to three natural geographic divisions, the Western Ghats (High Range) or highlands –, Plains or midlands and Coastal area or lowlands. The zonation adopted by the WGEEP transcends the physiographic limits of the conventional Western Ghats and intrudes even in to the entirely unrelated and peripheral coastal plains in the form of SEZ 3grids. Actually the kind of zonation the WGEEP has recommended is not as mandated by the MoEF and as per the resolutions of the WGEEP itself in the matter of

demarcation of areas within the Western Ghats to be notified as Ecologically Sensitive Areas under the EP Act.

The first meeting of the Panel held on 31st March, 2010 had resolved to assess the current status of the ecology of the Western Ghats Region, demarcation of **areas within the region** to be notified as ecologically sensitive zones under the Environment (Protection) Act, 1986, as also to recommend modalities for the establishment of the Western Ghats Ecology Authority under the Environment (Protection) Act. The Second Meeting of the WGEEP held on 7th May 2010 at Coimbatore had decided to undertake a comprehensive assessment of the potential Ecologically Sensitive **Areas within the Western Ghats** region on a scientific basis calls for a sound information base. In the Fourth Meeting of the Panel held on 26th to 27th July, 2010 at Thiruvananthapuram, Dr. V. S. Vijayan raised the issue of the need for defining and formulating guidelines for the ESA. Dr. Subrahmanyam drew attention of the Panel to the definition of ESA as given in the Pronab Sen Report which may be taken as a base for further refining it. Chairman then pointed out that in that case we would have to declare the whole of Western Ghats as ESA. Dr. Vijayan added that this was quite appropriate, and should be done; but in addition we would have to delineate various areas of Western Ghats according to their conservation importance as class A, B, C and so on. In the Ninth Meeting of the Panel held at Kerala Forest Research Institute, Peechi on 28 January 2011 Dr. Vijayan said that ground truthing should be carried out to check the reliability of the ecological sensitivity scores for each grid. Following this a discussion ensued with respect to notification of areas under Wildlife Protection Act or Environment (Protection) Act. He said that till such time that the draft guidelines are finalized the proposals for ESAs may be put on hold. The WGEEP held a Brainstorming Session on land use policy in Western Ghats at the Indian Institute of Science, Bengaluru on 3rd March 2011. Smt. T.M. Sudha, Senior Town Planner, Department of Town and Country Planning, Kerala gave a presentation on the Opportunities in Participatory Planning in Evolving a Land Use Policy for Western Ghats Region. Ms. Sudha highlighted the peculiarities of landholdings and settlements in Kerala which included scattered homesteads and rural –urban continuum. She said that urban sprawl is very common in Kerala and the per capita land availability is very less. The Western Ghats Ecology Expert Panel met on 24th March 2011 at Paryavaran Bhavan, New Delhi with the Hon'ble MoS (I/C) E&F. This was followed by Pronab Sen criteria for determination of ecological sensitivity. The Chairman said that Pronab Sen Committee did not provide for any guidelines for the management of Ecologically Sensitive Areas (ESAs). After the presentation on the framework and components of WGEEP report by Prof Madhav Gadgil, Hon'ble MoS, E&F appreciated the work done by the Panel and gave a go-ahead to the Panel to finalize the WGEEP report. It was decided that the WGEEP

members responsible for each of the allotted states would give broad proposals of ESAs for their respective states. They would also suggest process and guidelines for development planning of the ESAs with full rationale. The complete proposals for ESAs would be prepared by adopting the participatory approach with the involvement of the local people in the planning process. In the twelfth Meeting of WGEEP and Expert Consultative Meeting held at Kerala Institute of Local Administration, Thrissur from 3rd to 5th May 2011, Professor

Sukumar explained the rationale and the basis for delimitation of the spatial limits of Western Ghats. He clarified that WGEEP has used ecological basis for demarcation of Western Ghats. **Prof. M.K. Prasad opined that if the Western Ghats definition adopted by the WGEEP does not coincide with the official Government definition there might be problems with respect to implementation of different schemes.** It was clarified that the present definition encompasses all the Western Ghats taluks which are covered by the Government definition hence there would be no problem. The thirteenth meeting of Western Ghats Ecology Expert Panel held at Indian Institute of Science, Bengaluru, from 20th to 21st June 2011 Dr S.N. Prasad explained in detail the methodology adopted for scoring the variables used in the geospatial database for zonation. The variables used in the geospatial database are (i) elevation, (ii) slope, (iii) % forest cover, (iv) unique evergreen elements, (v) edge, (vi) riparian forests, (vii) endemic plants, and (viii) IUCN Red List category (mammals). After detailed deliberations it was decided that **the Western Ghats would be classified into 3 zones** differing in ecological sensitivity, viz. (i) ESZ1, (ii) ESZ2 and (iii) ESZ3 while Protected Areas would be a separate zone by themselves. *(highlighted)*

A close reading of the minutes of the meetings and workshops held by the WGEEP gives the irrefutable inference that:

1. The panel initiated its works for identifying the ecologically sensitive zones within the Western Ghat regions as mandated in the terms of reference. No ground truthing had been carried out to check the reliability of the ecological sensitivity scores for each grid as finally demarcated by the panel and recommended.
2. Views expressed by the MPs of the state in the interactive meeting with the Minister of State Environment & Forests along with the Members of the Western Ghats Ecology Expert Panel on 17th August, 2010 at the Parliament House Annex, New Delhi were not considered by the WGEEP. Neither has the assurance in respect of Kerala given by the Hon: Union Minister had been adverted to. Problems of land use practices and

peculiarities of land holdings in Kerala presented to the panel by Smt: T.M. Sudha, Senior Town Planner, Department of Town and Country Planning, were also not considered.

3. The Panel was of the stand that the Pronab Sen Committee did not provide for any guidelines for the management of Ecologically Sensitive Areas (ESAs) and if the Pronab Sen Criteria is applied the whole Western Ghats will classify as ecologically sensitive area, implying it need not be so.
4. Participatory approach with the involvement of the local people was not adopted for demarcation of the ESZ.s
5. The present definition of Western Ghats admittedly encompasses all the Western Ghats taluks which are covered by the government definition and hence the panel expected no problem. Hill tracts for Government purposes have been notified under Rule 44 of Kerala Service Rules Part II, (Travelling Allowance) which does not correspond with the zonation of the panel.
6. No rationale or grounds have been adduced in the report for grading the non Western Ghat regions (not being part of the conventional highlands but falling within the midlands and coastal plains) as SEZ to be protected or regulated for the sake of the Western Ghats.
7. The deliberations of the panel and decisions were centered on the forest ambience and ecological attributes of protected areas and in the lines of the guidelines as per the Wild Life Protection Act. No decision is seen to have been taken by the WGEEP for extending the zonation to any other regions not falling within the conventional Western Ghats.
8. The panel has not considered the relevant and significant matters of public interest as adduced in Annexure.I while considering and recommending the SEZs and zonal regulations therein, to which no democratic government can shut its eyes.
9. The criteria for delineating zones within the WGs should be given different weightage such as presence of shola forests, rare and endangered flora and fauna, microclimate, geo-climatic attributes, economically and strategic mineral deposits, elevation, shear zones, fault, hydrological attributes etc., may also be considered.

Section 9 of the report refers to the prohibition that could be imposed by the Central Government under Section 5 of the Environment (Protection) Rules 1986 on the Ecologically Sensitive zones being identified. But the action under Rule 9 shall be with particular reference to the attributes laid down and only after following the procedure prescribed therein. But the Panel itself has conceded that 'However, a uniform set of regulations cannot obviously be promulgated under the EPA for the entire region'. (Section 9, p17) However the Panel not only demarcated the ESZs but also prescribed a uniform set of regulations applicable across the SEZs, even as the zonation lacks the data and methodological process criteria (box 4. P18 of report) adopted in arriving at the demarcation process for each zone in the respective unit. The Panel has opined that, 'It will clearly be desirable to put in place a system of zonation that jointly considers micro watersheds and village boundaries to decide on specific limits of ESZ 1, ESZ 2 and ESZ 3, as well as to arrive at a locality specific management plan. This would be a task that will have to be initiated by the Western Ghats Ecologically Authority through a broad-based participatory process when it is put in place.' For the very reason the extant recommendations of the Panel on zonation may not be acted upon.

For the above reasons and those categorically reported to the MoEF by the State Government vide Annexure. I, the zonation as recommended by the WGEEP especially in the traditional midlands and coastal areas of the state are wholly unacceptable to the State Government. The state Government has very serious reservations and anxieties over the zonation process adopted by the Panel and request that those may not even be considered tentative or illustrative. Nevertheless the state Government wish to clarify the at all possible conservation and protection measures are being taken and will be ensured in the conventional Western Ghat regions of the state. In this context the report appeared in 'The Hindu' daily dated 22-8-2012 is extracted below:

'Madhav Gadgil, head of the WGEEP, told The Hindu over the phone from Mumbai that the grid size of 9x9 km was selected because the available computerized information was in that scale.

'Within the available time frame we had to prepare the report, it was a scale we could handle because of the earlier work done'. He however said there was a need to develop the map further on a finer scale.'

General recommendation on restricted or prohibited activities across the entire Western Ghats as a single unit is repugnant to the admission of the WGEEP in para 2 page 17 of its report in section 9. When the WGEEP has unequivocally found that a uniform set of regulations cannot obviously be promulgated under the EPA for the entire Western Ghats region, (section 9, p17) it is precisely what is done and

recommended by the panel in section 13 of the report. The recommendations which are acceptable to the Government of Kerala, which are acceptable with modifications, and reasons thereof and those are unacceptable with reasons therefore are categorised and enclosed herewith as **Annexure II**. The Chief Minister of Kerala has also brought the reservations of the state in the matter of the recommendations to the personal notice of the MoS for Environment & Forests by his Demi official letter No 3527/A2/2011/Envvt dtd 3-3-2012. Whereas the specific mandate of the WGEEP was to demarcate areas **within the Western Ghats region** which need to be notified as ecologically sensitive and to recommend for notification of such areas, as far as Kerala is concerned the bulk of the SEZs identified in the state fall outside the Western Ghat Regions comprised in the other geographical areas viz; midlands and coastal areas.

The approach of the panel is irrational. It includes vast extents of areas under protected zones and wants to exclude areas which are not fit to be included in the zones by the Authority in consultation with local bodies. The process may take years and the people will be stifled till the process is completed and ultimately the lands would be excluded from zonation. It is as if sending a person to jail when a case is registered for life term to be released once the trial is over.

It is seen that there had been general objections against the approach of the WGEEP from environmental scientists as well. Prof: Madhav Gadgil himself has explained the objections (and certain allegations) raised by Dr .C.P Vibhute against the report, which is available in the website *Amrutmanthan-WGEEP: Rebuttal to objections raised by Dr C P Vibhute*. A hard copy of the rebuttals given by Prof: Gadgil is produced herewith as **Annexure III**. The clarifications given by the Chairman of the WGEEP in paras 3, 4, 6, 7, 8, 9,13and 14 verify the objections and defects pointed out in the above paras as to the unacceptability of recommendations on zonation. The state Government considers the clarification to point No: 9 in Annexure III as evasive and misapropos. The very stand of the Chairman on such vital issues supports the stand of the government in Annexure I that the report should be left to the state Government to take appropriate actions for conservation of the Western Ghats proper. When the Chairman of the WGEEP holds that:

'the WGEEP has clearly stated that what is proposed are only provisional boundaries and provisional guidelines , both to serve as a basis of informed deliberations through an inclusive process reaching down to all grama sabhas/ ward sabhas throughout the western ghats region. The decisions arrived at through such a democratic process should then be taken up for implementation' (para 9, Exhibit 5),

The state government may not be made to accept the Western Ghats conservation and regulatory framework as enunciated by the WGEEP in its report dated 31-8-2011.

In the response to the points raised by the MPs from the state in the meeting of the MPs of the Western Ghats Region with the Minister of state Environment & Forests along with the members of the Western Ghats Ecology Experts Panel held on 17th August 2010 at Parliament House Annexe New Delhi, the Hon: Minister had made the following assurance:

'MoEF recognizes that the state of Kerala will need a special dispensation, as the area of forests in proportion to the land area is the highest in the state. We cannot wish away settlements where people have been living in the same areas for more than 100 years. Such settlements will be given special consideration'. (highlighted)

Unfortunately the WGEEP failed to stick to the above decision recorded in the minutes of the said meeting (page 242, item 7). It is particularly notable that in the matter of Coastal Regulation Zone, the Notification No : S.O 19 (E) dtd 6-1-2011 of the Ministry of Environment & Forests vide Rule 7(v) thereof specially prescribes areas requiring special consideration for the purpose of protecting the critical coastal environment and difficulties faced by local communities, wherein under clause A (ii), the CRZ areas of Kerala including the backwaters and backwater islands are included. Again in rule 8. 2 of the said Notification, in view of the unique coastal systems of backwater and backwater islands along with space limitation present in the coastal stretches of the State of Kerala, special favourable conditions have been stipulated in relaxation of the distance and other regulations and controls generally applicable to coastal states. Kerala has a clear case for special and a discretely differentiated consideration in the matters of zonation and regulations in the matter of the conservation of the Western Ghats as well and the same is craved for, for the facts, reasons and grounds adduced in the above paragraphs. It is unfortunate that the WGEEP did not extend such a consideration to the land starved state despite the recommendations of the MPs from the state to the panel and the positive response of the Minister for Environment & Forests thereon.

Whereas the specific mandate of the WGEEP was to demarcate areas **within** the Western Ghats region which need to be notified as ecologically sensitive and to recommend for notification of such areas, as far as Kerala is concerned the bulk of the SEZs identified in the state fall outside the Western Ghat Regions comprised in the other geographical areas viz; midlands and coastal areas *(highlighted)*.

Of the 39 Western Ghat sites that won global recognition for their outstanding Universal Value, Kerala accounts for 19, the highest for any single Western Ghat state. Out of these, 10 are existing protected areas, 9 are either reserve or interior forests. The activities are already regulated by existing statutes. Hence it has no effect of imposing any new regulations as in the case of the WGEEP recommendations. 'The World Heritage Site' status bestowed on the Western Ghats buttress the stand of the state Government that it is the traditional forested high ranges of the state that

deserves to be conserved as the Western Ghats of the state and the geographically distinct midlands and coastal plains need not be brought under the 'Western Ghats regions of the State' for imposing unpractical and unwarranted conservation measures.

Protected areas in Kerala form 11% of the WG areas (3180sq.km). The report recommends that ESZ1 and ESZ2 together shall be up to 75% of the area of the WGs. This leaves very little area outside the restricted zone. Differentiated extra legal development norms for the WG regions and another set of regulations for the other areas of the state would be an unacceptable proposition.

3. OBJECTIONS AGAINST THE PROPOSED WESTERN GHATS ECOLOGY AUTHORITY

Kerala is fast becoming a single urban agglomeration with its unique settlement pattern compared to other states in the country. The pressure on developable land is very high across the state and hence any development / conservation policy taken at the national level may require suitable modifications to adapt to the ground realities existing, the socio-economic needs of the society and the constitutional obligations of the state. The remedy to erosion of natural capital or unnecessary environmental damage to the Western Ghats is not imposition of more harsh and arbitrary regulations and prohibitions in the other geographic areas outside the Western Ghats, both to be administered by a national, state and district level authorities. There is no mention as to how the checks and controls proposed for the areas comprised in the SEZs outside the conventional forested and contiguous high ranges would facilitate the environmental well being of the Kerala Western Ghats.

There were historical, socio-political, commercial and financial reasons for the migration and settlement of people in the Western Ghats region during the past century and up to a few decades. Later in order to tap the immense potential for power generation for which the state had no other source, and to irrigate the agricultural areas downhill, dams had to be constructed, otherwise the water in the rivers originating from the Western Ghats at average 1.2 km above sea level would have drained to the sea which in a few hours. The extant, stringent conservation laws had not been in effect and the need for environmental conservation was not known to society and not even enshrined in the Constitution of India at those times. But that was inevitable and contributed to population increase in high ranges such as Idukki as is evidenced in the table below:

Year	Kerala		Idukki	
	Population (in 1000)	Decennial Population Growth (in %)	Population (in 1000)	Decennial Population Growth (in %)
1901	6396	-	47.69	-
1911	7148	11.75	99.60	108.88
1921	7802	9.16	108.80	19.23
1931	9507	21.85	187.77	72.59

1941	11032	16.04	244.42	30.17
1951	13549	22.82	331.60	35.67
1961	16904	24.76	580.23	74.98
1971	21347	26.29	765.61	31.95
1981	25454	19.24	971.20	26.85
1991	29011	13.97	1160.63	19.5

Source: Census of India 1991, Kerala, General Population Table and Census of 1991, Provisional Population Table.I.

Environmental Justice linked to human well being without compromising on environmental protection as mandated in the Constitution is an avowed policy of the state government. Environmental degradation that affects the life and livelihood of the poor and vulnerable sections of society will be prevented, for which restrictions in residential areas of such social groups may not be the appropriate step. While firmly upholding environmental justice the government has the constitutional obligation to ensure that no such individual or group is disproportionately burdened by arbitrary environmental concerns. Environmental issues including conservation of the Western Ghats are critical. However those can be approached and handled only in the light of the ground realities of the state as to land requirement, development needs and priorities concerning human beings as well. Striking a balance between protection of the environment and sustainable development is called for and always practiced by the state Government.

Various instruments of conservation of environment are in force in the country at present. The system of statutory clearances under FC Act, Environment (Protection) Act, Water and Air Acts, provide adequate checks and balances and consume considerable time before launching any development project. Creation of the Western Ghats Ecology authority will make one more such regime. Multiplicity of regulatory regimes has been considered an impediment to governance and development generally. The present proposal for designating zones creates an accrued situation of having overlapping between WGEEP zones and other zones like wet lands etc In some cases, WGEEP zones extend up to the coasts. As the main issue is implementation of such regulations and sensitisation of stake holders for need of compliance, direction from MoEF in the form of guidelines to each state on basic principles for treatment of ESZs through their in house mechanisms will not only enable them to take up responsibility of conservation but also build their capacity of doing so in long term.

As the objective of the exercise is to ensure maintenance of the ecological integrity of the WGs, what is important is to integrate the expertise of this kind in the development planning of the areas. Accordingly a panel of experts can be proposed for participation in the planning process ranging from appraisal to monitoring and evaluation. Additionally, some of the experts of the WGEEP can be inducted in to the

Forest Advisory Committee which clears the proposal under the F C Act, or the Expert Appraisal Committees and similar regimes for regulating environmentally relevant activities,

Recently the Central empowered committee appointed by the Hon'ble Supreme Court in IA1000 in W/P 202/95 suggested demarcation of ecologically sensitive areas around the protected areas. For this purpose they have classified the Protected Areas in to 4 categories namely a, b, c, d depending upon the extent of the Protected Areas. The committee suggested demarcating a radial area of 2kms, 1km, 500m, 100m around the Protected Area of category a, b, c, d respectively as ecologically sensitive areas. Once the Hon'ble supreme Court accepts this recommendations; they will be binding on the State also, which intum will result in additional restrictions in undertaking developmental works.

As per the Environment (Protection) act, and the rules there under, the central government can notify areas in which industries shall not be established, fix maximum allowable limits of concentration of pollutants for an area, decide environmentally compatible land use etc. The Hon: Supreme Court directed the states to declare ecologically sensitive areas around each protected area within a time frame and suggested a limit of 10 kms around each protected areas to be constituted as ecologically sensitive areas. In a small state like Kerala, we have already 27% of the forest area and 8% of the land area under 23 protected areas, and have forest area greater than the national average. In a narrow state which has high population density like Kerala, delineating ecologically sensitive areas of 10kms around each of the 23 protected areas will cover most of the land area and the hands of the state Government will be tied to take up any development work.

There are many public lands in ESZI, and 3 which are eligible under the "list of assignable lands' as per the various rules under the Kerala Land Assignment Act-1960. A vast area which is coming in the purview of special rules for regularisation of occupation of forest lands prior to 1-1-1977 is lying in these zones and Government have already committed to assignment, after getting necessary clearances under the Forest Conservation Act- 1980. Government cannot go back from this commitment especially after the introduction of zero landless (citizens) Kerala 2015 programme. Such important policy decisions of the State having vital social ramifications cannot be left to the proceedings of the proposed WGEA as an ecological issue. The state Revenue Department apprehends that bringing 25 taluks out of total 63 under the WGEA will under the direct overall control would disrupt the normal governance function in the state.

State government has very serious concerns at the recommendation to set up the Western Ghat Ecology Authority as a regulatory body for the WG regions. It would upturn established procedures, Government business and violate the mandates of the environmental laws. It may be noted that "Environment" is a central subject, but the regulations are on matters falling within the purview of the WG states. The MoEF as the administrators of the environmental laws and the WGEA as an additional regulator for some elevated areas and forests of the state would certainly be an awkward situation. The recommendations can very well be brought to practice by the Ministry or the states and if necessary by suitable amendments of the respective laws or rules. It would be against the spirit of all the existing environmental laws to allow an 'national 'authority for approximately 129037 sq: km of six states as a spatial development authority in addition to a host of similar authorities at state and central level having state/ country wide jurisdiction. The existing authorities over which the state governments have no appellate or other authority are for specific environmental purposes such as Coastal Regulation Zone, Wetlands, etc the WGEA is recommended to be a body with sweeping regulatory power on almost all the development sectors at state level and hence likely to hold up key development projects of the states even if the statutory environmental clearance is given. Enforcement of environmental regulatory standards as proposed may lead to throwback to the avoidable licence-clearance regime entailing further delays and impediments. Instead the environmental legislations and the EIA procedure may be made rigorous in ecologically more sensitive areas such as the WG proper, after having the areas identified and demarcated scientifically with the approval of the state Government The state is at present having the following regulatory regimes exercising jurisdiction throughout or regionally:

Statute	Function	Regulatory body
Town Planning Act	Building construction regulation	Local Bodies
Kerala Panchayat Act Kerala Municipalities Act	Local governance	Local bodies
Kerala land Conservancy Act 1957	Conservation of Government lands	Revenue Authorities
Kerala land utilisation Order 1967	Utilisation of fallow lands for food crops	District collector
Kerala conservation of paddy land & Wet land Act 2008	Conservation of paddy lands and wetlands	Revenue Authorities
Coastal Regulation Zone Notification	Conservation of Coastal areas	CRZ Authority
Wetland Conservation Rules 2010	Conservation of notified wetlands	Wetland Authority

Environment (Protection) Act 1984	Environmental Clearance of major projects Environmental clearance for minor projects	MoEF, GoI State Level Environment Impact Assessment Authority
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Proliferation of 'Authorities' with prohibitory and restrictive powers in a state without the required land area to enforce all these regulations would not certainly be a wise proposition and would only be counterproductive. It has not been clarified whether the proposed WGEA would do away with the other regulatory and consent regimes. If the recommendations are implemented as such, two third of the geographic area of the state would be under direct regulations restraining human activities, which is not acceptable to the state Government. The specific proposal of the state in this context made to the MoEF in Annexure. I letter that these aspects may be sorted out at state level may be considered positively. The federal concept must also get due consideration as the recommendation largely infringes upon the state's legislative and administrative areas. It is also against the concept of decentralised decision making. Instead of the proposed WGEA it may be considered whether a state level Ecology Commission or similar set up acceptable to all may be considered so as to avoid proliferation of authorities under the Environment (Protection) Act and other similar regulatory legislations.

4. OBJECTIONS AGAINST THE RECOMMENDATIONS ON HYDAL PROJECTS

(A). GENERAL

As regards the recommendations against major river valley and hydroelectric projects the need to irrigate the drier tracts to the east or to generate power by taking advantage of the steep slopes to the west, justifies the inevitable activity. This human centric activity cannot be avoided in the agro- centric socio economic structure prevailing. River Valley projects with due environmental safeguards are possible and in a way it has a positive side of preserving its own ecological elements. The International Commission on Irrigation and Drainage in its position paper on 'Role of Dams for Irrigation, Drainage and Flood control' (pp18-19) explains the position as under:

"Every human activity modifies the environment. Some changes are for the good, some are not, but the awareness in the society about size and scope of the adverse impacts plays an increasing role in decision making. Effort is made to mitigate and compensate such effects while increasing the positive impacts, so that sustainability of development is maintained and the natural resource base is not eroded. The challenge is to ensure that the positive effects on environment outweigh negative effects.

Mitigation/enhancement measures have been evolved, over a period of time, by concerned professionals. ICOLD and ICID have prescribed detailed listings, criteria and guidelines for study of environmental impacts and their mitigation. Many countries have developed appropriate policies and measures for compensating negative impacts. While respecting the privilege of countries/governments to develop their water resources plans and priorities, it will be only fair to expect that adequate compensatory packages are provided by them to the adversely affected people and to ensure that such people are better off after the project implementation than before it.

Adverse impacts with and without a dam.

In the developing world, land and water development is required to take care of the population pressures and the poverty level of societies. As development reduces the poverty level and improves the standard of living mainly by providing employment generation, this in itself has positive effects. While adverse impacts of a dam can be taken care of, the availability of fresh water, a sovereign country no doubt will preserve its basic right of deciding its own priority of developmental needs and most suited options. Global criteria can at best indicate guide lines. ICOLD and ICID have prescribed detailed listings, criteria and guidelines for study of environmental impacts and their mitigation on the other hand reduces environmental degradation. The positive impacts on environment are manifold. In absence of a dam or a water withdrawing facility, the environmental degradation continues unabated especially in less developed regions because of population pressures. Environmental impact studies therefore have to be carried out for both, with and without dam scenarios. The environmental cost of constructing a dam is normally smaller than that in a situation without the dam, if the continued degradation in absence of a dam due to poverty and population pressures during the life of the dam is considered. It is often to be concluded that the environmental cost of building and using

a dam in a developing country is smaller than that of not doing that dam project. The extent of submergence and evaporation loss from a large storage project is lesser than that from a series of equivalent small storage projects. Apart from assessment of adverse impacts with and without a dam, it is sometimes required to carry out the assessment for situations before and after completion of a dam project as one time exercise. Both assessments are important as they provide important insight into the environmental concerns and their containment. (www.icid.org/dam.pdf)

Power generation in Kerala is largely from hydro resources. Hydel energy is the most reliable and dependable energy in the state. The hydro electric potential available in the state is estimated to be about 6000 MW. The state has exploited only about 35% of potential available. One of the peculiar attributes of the state is the network of river system originating from the Western Ghats, although majority of them are short rapid ones with low discharges. The total power generation capacity of the hydroelectric projects is about 2040MW, which produces about 7100 MU of energy that amounts to 37% of the total energy requirement of the State. Kerala's requirements of power, irrigation and drinking water are now being met by the storage reservoirs at the high ranges proposed to be made ESZ-I.

There is no alternative for the 2000MW of power being generated in the state from the hydel projects. Diversion of waters from rivers and forest lands is also not permitted. The condition that the dams 35-50 years shall be decommissioned and the prospects of new dams coming up in the state very grim in the wake of the WGEEP report would prevent the state from having electricity produced from hydro resources, which is more eco-friendly and economically produced. The WGEEP has also put up hurdles in setting up coal based and gas based power plants.

Decommissioning of the dams would virtually fail the state in all the above sectors. All the existing and proposed hydro electric projects are in the proposed ESZ-I. The recommendations that only dams having the height of 3m will be permitted in ESZ-I will effectively thwart the state's proposals for harvesting hydro electrical power, since dams cannot be build at any places in the other zones. There is no alternative for the 2500 MW of power generated in the state from the hydal projects. Diversion of rivers and forests is also not permitted. The condition that the dams 50 years old shall be decommissioned and the prospects of no new dams would prevent the state from having electricity and producing it in the only way by which it could be produced here eco friendly and economically. The WGEEP had put hurdles in setting up coal based and gas based power plants.

Kerala is bestowed with huge hydro potential by way of plentiful rain and many rivers. As if acted upon by nature's balancing mechanism the state is devoid of any fossil fuel reserves. It is estimated that the vast hydel potential can take care of the power needs of the state for many decades to come. However Kerala could accomplish only two major power projects viz: Idukki (780MW) and Sabarigiri (300MW) with substantial storage capacity so far. Even though the Kerala State Electricity Board had been formulating many other large capacity hydroelectric power projects, those could not be developed due to denial of environmental and forest clearances. With the enactment of the Forest Conservation Act in 1980, the situation became worse and even the medium capacity projects had to be shelved. Some of the major hydroelectric projects which were denied environmental clearance are Silent valley (240MW, 522MU), Pooyamkutty (240MW, 645MU), Pathrakkadavu (100MW).

Out of the estimate hydel potential of about 6000 MW in the state, Kerala could harness only about 2040 MW so far, leaving a huge gap between the potential and the harnessed capacity. All the proposed hydel projects in Kerala can come up only in the Western Ghats. The forest cover of Kerala is 29% of its geographical area whereas the state accounts for 28% of the total biodiversity of the country. The WGEEP report has recommended for demarcating select areas of the Western Ghats a "No-Go" areas where no developments will be allowed under any condition so as to protect the

ecology of the region. All major, medium and small hydro electric projects proposed by the KSE Board during the next two plan periods have to be stalled if the WGEEP report is accepted in toto. Those include Poringalkuthu SHEP(24MW), Anakkayam SHEP (7.5MW), Achencovil HEP(30MW), VakkalarSHEP(24MW), VythiriHEP(60MW), Kanthanpara HEP (66MW),(30MW), Mankulam Stage2(40MW), UpperSengulam (24MW), AnamalaiManali (100MW), Pandiyar-Punnapuzha HEP(105MW), Mananthavady HEP. Pooyamkutty HEP (210MW), Pathrakkadavu HEP(105MW) etc. Hence if the report is accepted in toto will close all avenues for developing more hydroelectric projects in the state. Hence the State government cannot but take in to consideration of the genuine grievance of the Kerala State Electricity Board and request the High Power Working Group to recommend to the MoEF to undertake a revisit of the entire recommendations of the WGEEP , undertake adequate consultation with the state government and thereafter take a view of balancing the development needs of the state with environmental sustainability.

There are 18 completed and 5 ongoing irrigation projects in Kerala. Out of the 18 completed projects, 13 have storage and 5 are barrages (SPB, 2011). The storage capacity created by major and medium irrigation projects in Kerala is around 1500 Mm³ and the gross average live storage in the reservoirs at the end of the monsoon is around 1200 Mm³. The estimated irrigation potential of Kerala is 16 lakh ha, but there are several constraints to achieve this target. So far all the completed projects together have about 2,92 lakh ha of net and 5.51 lakh ha of gross ayacut area (Table 6.4). The net and gross irrigated areas in the state from all sources are 3.86 lakh ha and 4.55 lakh ha respectively during 2009-'10.

This constitutes 18.6% and 17% of the net sown area and gross sown area respectively (DoES, 2010)

Table 6.4 Sector-wise area irrigated as on March 2010

Source	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
Government canals	101397	104669	98664	88318	95956	94813
private canals	4729	4965	4300	4324	6318	2656
Tanks	43983	45062	42064	41580	39752	40851
Wells	108445	110000	114477	131002	133312	125892
Other sources	134802	135227	125900	133321	123915	122118
Total	3993356	399923	385405	387545	399253	386330
Gross Irrigated Area	455391	464765	475231	455310	458238	454783
Net area irrigated to net area sown	18	19	17.52	18.41	18.86	16.34
Gross irrigated area to gross cropped	15	15	16.29	16.44	16.96	17.04

area						
Irrigated area under paddy to total irrigated area	40	38	45	40	37	37

As per the assessment of the Directorate of Economics and Statistics the net irrigated area in the state as on March 2010 is 3.86 lakh ha and the gross area irrigated is 4.54 lakh ha. The net area irrigated has declined from 3.99 lakh ha during 2008-09 to 3.86 lakh ha in 2009-10 only 16.34 per cent of the net cropped area is irrigated. The percentage of net area irrigated to net area has declined and percentage of gross irrigated area to gross cropped area records a slight increase during the year compared to the last year. The hydal potential of the stat has to be tapped lest the agriculture, drinking water needs and the environment would be at the receiving end.

There are 19 major dams in the irrigation sector and 33 major dams in the power sector and two dams in the water supply sector. Most of the dams have crossed the life span of 30-50 years. The WGEEP has recommended that all the dams that have crossed the life span of 30-50 years will have to be decommissioned in a phased manner. All hydel projects conserve water for use in lean periods. They control floods by storing water and control drought by releasing it as and when required for generation of power, agriculture, industry, domestic uses, salinity control, etc. When all the existing dams that have completed 30-50 years are to be decommissioned and no new storage schemes are permitted, the entire waters of Kerala during the monsoon months would flow to the sea in 48 hours and severe drought would be experienced. As per WGEEP report, only run of the river schemes with maximum height of 3m are allowed in SEZ1 for serving local energy needs of tribal/local communities / plantation colonies etc. A solution to drinking, irrigation and power needs of the common people is not seen furnished in the WGEEP report. Only with storage of water during monsoon the above requirements can be met. Therefore the WGEEP report is accepted, water availability will be a major problem in the state.

If it is decided that any hydel project has to be put off due to concern for biodiversity conservation, the State has to be suitably compensated by allocating cheaper power or fuel for power generation for the opportunity cost on account of the loss of hydel generation. If any area with rich biodiversity has to be conserved in view of any law or covenants in the field of conservation of biodiversity and environment, it is done for the benefit of entire nation and humanity as a whole. When a small state like Kerala is enjoined to conserve biodiversity for the benefit of entire nation and humanity, the State has to be duly compensated by cheaper energy or cheaper fuel especially in view of the fact that the State has no other fuel reserves. Heavy opportunity cost cannot be thrust on a small state like Kerala, which is struggling for cheaper and eco friendly energy.

Recommendation for decommissioning of dams could create further ecologically disagreeable problems in so far as sustainable eco systems have already been established around the reservoirs and flourishing. It cannot be changed every 50 years. The ecosystems in and around the reservoirs enjoy protection as prohibited areas and the forest profile in the hydel project reservoirs of the state bear testimony to the fact.

(B). ATHIRAPPALLY HYDROELECTRIC PROJECT

Athirappally which is specially looked into by the WGEEP. The WGEEP does not recommend in implementing the project as the proposed project area is located in ESZ-I. The project is located in Mukundapuram Taluk. As per WGEEP report, Mukundapuram Taluk is not included in any of the ESZ's. Feasibility of this hydroelectric project has been cleared thrice by the Central Electricity Authority. Water availability for the project has also been cleared specifically thrice by the Central Water Commission based on the reference from MoE&F. Environmental clearance was accorded thrice in 1998, 2005 and 2007 by MoE&F. Clearance has been accorded for diversion of 138.9 ha of forest by MoEF and state forest department. I ignore all the statutory clearances, going by the dictates of the NGOs only their views have been incorporated in the report. The report is totally one sided in this regard. Environmental Clearance to the project had been given in 2007 only after a site visit and public consultation by the expert team delegated by the Prime Minister's office. For the 163 MW project the water spread area would be 104 ha, whereas the total forest area required would be 138 ha (14.2 ha is temporary diversion and to be returned back, 36.80 ha is forest teak plantations, 39.20ha is river bed, 28.40 ha is natural forest). Clearance for tree growth is required only for 61.80ha. The WGEEP has not considered the expert opinion. There was no hydrologist in the WGEEP, the conclusions about the hydrology, technical feasibility and limit of power generation etc seems more eco centric. As regards the alternatives for power conservations suggested by WGEEP, Kerala has the best track record in minimizing T&D loss.

Now a case for implementation of the report has been filed in the National Green Tribunal. As far as Kerala State Electricity Board and the State of Kerala are concerned the report is damaging. The WGEP has even commented adversely on the techno-economic feasibility of the project for which its competence is doubtful. The Kerala State Electricity Board has submitted a separate memorandum pertaining to its problems arising out of the recommendations of the WGEEP, copy of which is submitted separately as **Annexure IV**.

The 59th meeting of the Expert Appraisal Committee on hydropower Projects (MOEF) has taken a decision in favour of the Gundia Hydroelectric Project. Copy of the minutes is submitted as Annexure V. Athirappally Project of the state also deserves a similar consideration on similar grounds.

5. STATE LEVEL LEGISLATIONS AND ITS ADEQUACY

Sl. No	Name of Statute	Objective	Comments
1	Kerala Forest Act (1961) and Amendments	An act to unify and amend the law relating to the protection and management of forests in the state of Kerala	Adequate
2	The Kerala Cattle Trespass Act, 1961	An Act to consolidate and amend the law relating to trespass by cattle in the State of Kerala	Adequate
3	Kerala Land Reforms Act, 1963	An Act to enact a comprehensive legislation relating to land reforms in the State of Kerala.	Adequate
4	The Kerala Private Forests (Vesting and Assignment) Act, 1971	An Act to provide for the vesting in the Government of private forests in the State of Kerala and for the assignment thereof to agriculturists and agricultural labourers for cultivation.	Adequate
5	The Kerala Forest Produce (Fixation of Selling Price) Act, 1978	An act to provide for the fixation of the selling price of certain important forest produce, for the prohibition of the sale of such forest produce at less than the price so fixed and for matters incidental or ancillary thereto.	Adequate
6	The Kerala Preservation of Trees Act, 1986	An Act to control indiscriminate felling and destruction of trees, in the State of Kerala resulting in considerable soil erosion and destruction and loss of the timber wealth of the State; and to prevent soil erosion and to regulate the felling and destruction of trees in the State	
7	Kerala Forest Act (1961) and Amendments	An act to unify and amend the law relating to the protection and management of forests in the state of Kerala.	Adequate
8	The Kerala Cattle Trespass Act, 1961	An Act to consolidate and amend the law relating to trespass by cattle in the State of Kerala.	Adequate
9	The Kerala River Bank Protection and Sand Mining Regulation Act (2001)	An Act to protect river banks and river beds from large scale dredging of river sand and to protect their biophysical environment system and regulate the removal of river sand and for matters connected therewith or incidental thereto.	Adequate
10	The Kerala Conservation of Paddy Land and Wetland Act 2008.	An act to conserve the paddy land and wetland and to restrict the conservation or reclamation thereof, in order to promote growth in the agricultural sector and to sustain the ecological system, in the State of Kerala	Demands are there, for amendment of the act enabling reclamation for industrial and investment purposes

6. CENTRAL LEVEL LEGISLATIONS AND ITS ADEQUACY

Sl. No	Name of Statute	Objective	Comments
1	The Wildlife (Protection) Act, 1972	To provide for the protection of Wild animals, birds and plants and for matters connected therewith or ancillary or incidental thereto.	Adequate
2	The Forest (Conservation) Act, 1980	To provide for the conservation of forests and for matters connected therewith or ancillary or incidental thereto.	Adequate
3	The National Board for Wildlife Rules, 2003	In exercise of the powers conferred by sub-section (2) and (3) of section 5A read with section 63 of the Wild Life (Protection) Act, 1972 (53 of 1972), the Central Government notified the rules for national board for Wildlife.	Adequate
4	The Forest (Conservation) Rules, 1981	In exercise of the powers conferred by sub-section (i) of section 4 of the Forest (Conservation) Act, 1980 (69 of 1980), the Central Government notified the rules for conservation of forests.	Adequate
5	The Wildlife (Protection) Licensing (Additional Matters For Consideration) Rules, 1983	In exercise of the powers conferred by Cf. (a) of sub-section (1) of sec. 63, read with Cf. (b) of sub-section (4) of sec. 44 of Wildlife (Protection) Act, 1972 (53 of 1972) the Central Government notified the rules for the protection of Wildlife and additional (4) of sec.44 of Wildlife (protection) Act, 1972(53 of 1972) the Central Government notified the rules for the protection of Wildlife and additional matters for consideration for licensing.	Adequate
6	The Recognition of Zoo Rules, 1992	In exercise of the powers conferred by clauses (f) and (g) of sub-section (i) of Section 63 of the Wild Life (Protection) Act 1972 (53 of 1972), the Central Government notified the rules for recognition of zoo.	Adequate
7	The Wildlife (Protection) Rules, 1995	In exercise of powers conferred by clause (k) of sub-section (1) of section 63 of the Wildlife (Protection) Act, 1972 (53 of 1972), the Central Government notified the rules for protection of wildlife.	
8	The Wildlife (Specified Plants Conditions for Possession by Licensee) Rules, 1995	In exercise of powers conferred by Clause (a) of Subsection (1) of Section 63 of Wild Life (Protection) Act, 1972 (53 of 1972), the Central Government notified the rules on conditions for possession by licensee of specified plants in wildlife.	
9	Declaration of Wild Life Stock Rules, 2003	In exercise of the powers conferred by sub-sections (1) and (3) of section 40A read with section 63 of the Wild Life (Protection) Act, 1972 (53 of 1972), the Central Government notified the rules for declaration of wildlife stock.	
10	The Water (Prevention & Control of Pollution) Act 1974	To provide for the prevention and control of water pollution and maintaining or restoring of wholesomeness of water, for the establishment, with a view to carrying out the purpose aforesaid, of Boards for the prevention and control of water pollution, for conferring on and assigning to such Boards powers and functions relating thereto and for matters connected therewith.	

11	The Water (Prevention and Control of Pollution CESS) Act 1984	An Act to provide for the levy and collection of a cess on water consumed by persons carrying on certain industries and by local authorities, with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution constituted under the Water (Prevention and Control of Pollution) Act, 1974.	Adequate
12	The Air (Prevention & Control of Pollution) Act 1981	To provide for the prevention, control and abatement of air pollution, for the establishment, with a view to carrying out the aforesaid purposes, of Boards, for conferring on and assigning to such Boards, powers, and functions relating thereto and for matters connected therewith.	Adequate
13	The Environment (Protection) Act 1986	To provide for the protection and improvement of environment and for matters connected there with	Effective institutional machineries-lacking for implementation.
14	The Environment (Protection) Rules 1986	In exercise of the powers conferred by sections 6 and 25 of the Environmental (Protection) Act, 1986 (29 of 1986), the Central Government notified the rules for protection of Environment.	Adequate
15	The Hazardous Waste (Management & Handling) Rules 1989	In exercise of the powers conferred by sections 6, 8 and 25 of the Environmental (Protection) Act, 1986 (29 of 1986), the Central Government notified the rules for management & handling of hazardous waste.	Adequate
16	The Manufacture, Storage and Import of Hazardous Chemicals Rules 1989	In exercise of the powers conferred by sections 6, 8 and 25 of the Environmental (Protection) Act, 1986 (29 of 1986), the Central Government notified the rules for the manufacture, storage and import of Hazardous Chemicals.	Adequate
17	The Coastal Regulation Notification 1991	Regulation of activities in the coastal areas as notified.	Adequate
18	The Environmental Impact Assessment Notification	Prior Environmental Clearance for notified major projects and activities affecting environment.	Adequate
19	The Chemical Accidents (Emergency Planning, preparedness and response) Rules 1996	In exercise of the power conferred by Section 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government notified the rules for emergency planning, preparedness and response on Chemical Accidents.	Adequate
20	The Environmental Public Hearing Notification 1997	Notification of the Government of India in the Ministry of Environment and Forests issued under sub-section (1) and clause (v) of sub-section (2) of Section 3 of the Environment Protection Act, 1986 (29 of 1986) read with clause (d) of sub-rule (3) of Rule 5 of the Environment (Protection) Rules, 1986.	Adequate
21	The Bio Medical Waste (Management & Handling) Rules 1998	In exercise of the powers conferred by sections 6, 8, and 25 of the Environment (Protection) Act 1986 the Central Government notified the rules for the management and handling of biomedical waste	Adequate
22	The Recycled Plastics (Manufacture & Usage) Rules 1999	In exercise of the powers conferred by clause (viii) of sub-section (2) of section 3 read with section 25 of the Environment (Protection) Act 1986 the	Adequate

		Central Government notified the rules for the manufacture and use of recycled plastics, carry bags and containers	
23	The Environment (Setting for Industrial Projects) Rules 1999	In exercise of the powers conferred by clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 (29 of 1986) read with rule 5 of the Environment (Protection) Rules, 1986, Central Government notified the information of all persons likely to be affected thereby.	Adequate
24	The Noise Pollution (Regulation and Control) Rules 2000	In exercise of the powers conferred by clause (ii) of sub-section (2) of section 3, sub-section (1) and clause (b) of sub-section (2) of section 6 and section 25 of the Environment (Protection) Act 1986 (29 of 1986) read with rule 5 of the Environment (Protection) Rules, 1986, the Central Government notified the rules for the regulation and control of noise producing and generating sources.	Poor enforcement
25	The Municipal Solid Wastes (Management & Handling) Rules 2000	In exercise of the powers conferred by sections 3, 6 and 25 of the Environment (Protection) Act 1986 (29 of 1986), the Central Government notified the rules to regulate the management and handling of the municipal solid waste.	Adequate
26	The Biological Diversity Act 2002 & The Biological Diversity Rules 2004	In exercise of the powers conferred by section 62 of the Biological Diversity Act , 2002, and in supersession of the National Biodiversity Authority (salary, Allowances and conditions of service of Chairperson and other Members) Rules, 2003 except as respect to things done or omitted to be done before such supersession, the Central Government notified the rules.	State Biodiversity Boards to be empowered as the regulatory agencies. Financial assistance from MoEF to be provided to SBB and BMC s as contribution to the State Biodiversity Fund and Local Biodiversity Fund.
27	The Motor Vehicle Act 1938	An Act to consolidate and amend the law relating to motor vehicles.	Adequate
28	The Public Liability Insurance Act & Rules 1991	An Act to provide for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling any hazardous substance and for matters connected therewith or incidental thereto.	Adequate
29	The Manufacture, use, import, export and storage of hazardous microorganisms and genetically engineered organisms or cells Rules 1989	In exercise of the powers conferred by sections 6, 8 and 25 of the Environment (Protection) Act, 1986 (29 of 1986) and with a view to protecting the environment, nature and health, in connection with the application of genetechnology and micro-organisms, the Central Government notified the rules.	Adequate

7. ECONOMIC ANALYSIS OF IMPLEMENTING THE RECOMMENDATIONS OF WGEEP

There is justified disappointment in not having such a specific term of reference for the WGEEP especially as the terms of reference were bound to make the states losers on many development fronts for the sake of conservation of the WGs and contiguous midlands traditionally not considered WG regions. This is particularly notable in respect of vital sectors like land utilisation, power generation, urban development etc. A land owner living in a particular piece of land would find that the value of his land is deflated because of WGEEP on a fine day. If environmental care especially biodiversity conservation ensures all basic needs of daily life and survival, and loss of biodiversity is a much greater threat to human survival than climate change (per Prof. Edward O. Wilson, Harvard visionary of Biodiversity), thus it being so indispensable for human survival, its utility shall equally be acknowledged by suitably compensating and incentivising the WG people who are subjected to the regulations proposed by the WGEEP and are likely to suffer economic, social and personal comforts for the overall well being of the rest of the society and the country. There should be 100% compensation payment for eco system services, to those who suffer for the whole state/country/even the Universe.

There is a centrally sponsored scheme for Western Ghat regions with 90% central assistance called Western Ghats Development Programme to sustain and preserve the WG regions. It involves watershed development programmes and livelihood support, for inhabitants of the region, afforestation activities, with the help of Forest Department and research activities on the subject related to natural resources management of the WG region. Major activities of the WGDP now confines to Zone 3. The quantity of funds devolved is meagre. It would be advisable if the central funding is reoriented to approved WG conservation recommendations in the report.

The exact amounts required for implementing the recommendations of the WGEEP cannot be estimated with any degree of accuracy. There has been no fund assistance so far for the authorities constituted by the state Government as per the notifications issued by the MoEF under the Environment (protection) Act. The state governments were made to meet the expenditure on their own. However the WGEEP recommendations being not confined to setting up of the three tier WGE Authorities, but extends to far reaching regulatory measures telling upon the socio-economic situation in the regulated areas, a suitable economic package is necessary if such recommendations are implemented. Compensatory funding is required in the following heads

1. Plastic ban
2. Green Technology
3. Area treatment / plot development activities

4. Waste Treatment (SWM)
5. Waste Water Management (STPs)
6. Catchment area treatment
7. Water conservation measures
8. Organic farming (inputs, subsidy, certification)
9. Animal husbandry (Incentives, redeployment of subsidies)
10. Fisheries (conservation service charges)
11. Planting of endemic species (social forestry)
12. Private Forest lands (Conservation service charges, incentives, tax benefits) •
13. Biodiversity (conservation service charges)
14. (Conservation service charges)
15. Grant-in-aid to BMCs.(local biodiversity fund)
16. Environmental awareness (fund assistance for PBR based awareness and conservation programmes for students of the concerned Grama Panchayats)
17. Assistance to state Governments for implementing conservation projects such as the one prepared by the Kerala State Biodiversity Board for conservation of Biodiversity rich areas of Udumbanchola taluk, recommended by the WGEEP as a model project to be emulated by other states.
18. Western Ghats Database
19. Studies on hydrological database of rivers and ecological database at river basin level.
20. A compensatory Ecological Management Fund with 100% central assistance to compensate the people who are made to suffer any kind of loss, or restrained from beneficial enjoyment of their landed property or usufructs from such lands as could be done by their counterparts in the other non regulated areas of the state, to be established at state level to be provided to the affected persons /families on proportional basis according to the rules to be framed. The Ecosystem service compensation, though not included by the Panel in their report, is highly essential from equity point of view. It will come to thousands of crores of rupees which can be assessed only through an elaborated study.

The 13th Finance Commission (2010-2015) in its report commenting on environment related grants as observed as follows in para 12.27

"There is also Government of India (GoI) policies which have added to the environmental risks facing the country"

In para 12.32 the commission further states that:

"next to the preservation of the forest wealth of the country, there is paramount need to address environmentally adverse policies currently in place. Where these originate at the level of the national government such as fertilizer subsidy, correction can only happen only at the national level"

Compensatory ecological incentives as suggested earlier and financial assistance under Finance Commission Awards for such conservation activities as proposed in the report would go a long way in supporting such restrictive as well as conservation measures at state level. The MoEF may evolve appropriate thumb rules for such compensatory conservation and incentive schemes.

8. IMPLICATIONS OF UNESCO HERITAGE SITE RECOGNITION TO SOME PARTS OF WESTERN GHATS OF KERALA

Of the 39 WG sites, maximum (19) are in Kerala. The inscribed sites of Kerala include two National Parks(Silent Valley and Eravikulam) five wild life sanctuaries(Shendurney, Neyyar, Peppara, Chinnar and Aralam) , Periyar Tiger Reserve, four forest ranges (Kulathupuzha, Palode, Mangulam and Kalikavu), three forest divisions(Ranni, Konni and Achankovil), two Reserve forests (New Amarambalam, and Attappady) , and two shola forests (Karian shola and Mannavan Shola).

According to R. Windy Strahm the IUCN expert assessing the WG regions for the world heritage list of UNESCO, "in any World Heritage nomination evaluation, it is inevitable that the nominated site will have positive as well as negative aspects. Overall the hope is that the world status would serve as an umbrella to recognise and conserve the most important places on earth. There is no automatic mechanism for this and conflicts do not just disappear because of the label. However, the listing does constitute as a strong and high level governmental commitment for conservation which is not only of national but international significance" (The Hindu- 20-10-2010). It is expected that the status would enable the state to tap the UN for funds to revive traditional farming practices and funding the mechanism for Payment for Ecosystem Services to the farmers or landowners who are compelled to subject themselves to the stringent development restrictions under the WGEEP recommendations. The heritage

status may also help to mobilise international technical and financial resources for conservation and promote visitation and revenue generation for local, regional and national economies. According to the World Heritage Convention:

'Each state Party to this Convention recognizes that the duty of ensuring the identification, protection, conservation presentation and transmission to future generations of the cultural and natural heritage Situated on its territory, belongs primarily to that state. It will do all as it can do to this end , to the utmost of its own resources and where appropriate, with any international assistance and cooperation , in particular, financial, artistic, scientific, and technical, which it may be able to obtain'.

The convention also states that it does not affect property rights of individual countries, and that signatory countries have a duty to cooperate in protection of World Heritage Sites., to provide related help if another country requests it, and to desist from deliberate actions that might damage sites. Therefore while a country voluntarily pledges to manage its World heritage Sites, in a manner that ensures their protection, it does not surrender any authority over its sites. The concerned International authorities do not have any authority to force changes in site management upon Governments, public agencies or private parties. The only authority they have over the sites is to remove them from the list, which could costs embarrassment to the country in which the site is located .

The basic restriction is that any development activity in the sites should not have any adverse impact on the outstanding universal value and integrity of the sites. Once enlisted, the countries must ensure that such sustainable use does not adversely impact the outstanding universal value, integrity and/or authenticity of the property. Furthermore any use should be ecologically and culturally sustainable. "For some properties human use would not be appropriate" according to UNESCO.

Most of the nominations in Kerala occur in protected areas either as national parks, tiger reserves, wildlife sanctuaries or reserved forests, which have an effective management mechanism in place, under a policy and legal frame work. It is expected that governance mechanism will not be externally imposed but will be within the existing state and national level governmental arrangements. It also could practically implement an upstream process to provide better support to the country in a collaborative and constructive manner. This will lead to protection of the sites and prevent encroachments. The approval might not affect development activities in the non-forested areas as in the case of the WGEEP recommendations.

The status as world heritage site may not have appreciable adverse impact on human activities, so far as the boundaries are confined as considered for the nomination. There will not be any fresh restrictions on activities that are currently

permitted in the forest areas of Kerala. The WGEEP recommendations encompass the contiguous human habitations and even the non-WG midland areas of the state whereby the heritage status does not bring in more issues than that has been occasioned by the WGEEP report.

9. REGIONAL PLANNING PROCESS OF THE STATE GOVERNMENT

The Department of Town Planning started functioning in 1957 with head quarters at Thiruvananthapuram and regional offices at Ernakulam and Kozhikode, mainly to ensure planned development of Urban settlements in the State. In order to ensure the achievement of the above, this Department prepares various spatial development Plans at State, District / Regional and local levels, examines development potentials and advises the Government in matters related to Town Planning. Later, giving due respect to the unique scattered development pattern of settlements as well as the rural urban continuum prevalent in the state, it was decided to widen the field of activity of the Department by covering the rural settlements as well. Accordingly, in 1999, this Department was renamed as the 'Department of Town and Country Planning'. The district offices of the dept. of Town & Country Planning were appointed as spatial planning wings of DPC's vide G.O. [Rt.] No. 2003 / 99 / LAD dt. 22 - 6 - 99. The Town Planners, Deputy Town Planners and other officers of this Department are nominated as members of various sectoral committees of Corporations and Municipalities to advise on the importance of spatial planning in decentralized planning system.

Major Functions of the department

Preparation, processing, continuous monitoring, review and revision of:

- State spatial development plan. District development plans. Regional development plans. Urban development plans. Detailed town planning schemes for thrust & priority areas. Development schemes for potential tourist destinations and pilgrim centres. Development schemes for areas of environmental and heritage concerns.
- Formulation of state policies and development strategies for various sectors related to spatial planning and hence to integrate.
- Identification of towns under the centrally sponsored scheme - idsmt (integrated development of small and medium towns) and formulation of project reports, monitoring and evaluation of the implementation of projects thereof by local bodies etc.

- Preparing subject plans on housing, urbanization, slums, urban environment and other subjects pertaining to town and country planning, through R& D activities.
- Advising the local bodies and the government on all issues relating to urban and regional planning. The major activities include legal and enforcement functions with respect to town planning acts and rules, Kerala Municipal Building Rules, factories act and rules etc. Technical secretariat of art and heritage commission. Formulating urban and regional information system in the dept. Through a continuous system of data collection, compiling, analysis and publication on aspects of town and country planning.

DPCs and District Development Plans

- Preparation of District Plan by DPCs through participatory planning
- Pilot tried in Kollam District
- Work being carried out in 5 districts
- Features of the District Development Plan
- Spatial Plan
- Perspective Plan for 15 years
- Participation of all local self governments ensured
- Integrated Plan – addressing all sectors
- Involvement of people, local governments, line departments, NGOs
- Technical support provided by the Town and Country Planning Department
- Draft Local Development Plans considered

The categorisation of the WGs with the Grama Panchayat ward as unit and exact boundaries at cadastral level enables development regulations for specific zones to be incorporated in the comprehensive development plans prepared district level and settlement level. These long term spatial plans in the context of Kerala are the Integrated District Development Plans (IDDP) and the Local Development Plans (LDP) which are prepared with a participatory approach at the initiatives of the department of Town & Country Planning. These plans keep the specific requirements of Ecologically Sensitive areas in focus. In fact as per ESA notification regional plan can be approved when tourism plan of the area is approved. Approval of the regional plan and preparation of the tourism plan needs to be delinked. The framework for activities can be defined in the regional plan and the detailed plan of activities could be given in sub-zonal plans, such as tourism master plan.

The state Town Planning Act there is no provision of preparation of the Regional plans. However in the draft Town & Country Planning Bill being considered

by the Government for enactment has provisions for Regional plans and Special Area Plans. This facility will be ideal for the spatial planning of the Western Ghat Regions. Enforcement of the development regulations may be vested with the Local Self Government Institutions concerned. The building code as recommended with the suggestions of the state government thereon could also be incorporated in the development regulations of the plans.

Kerala is fast becoming a single urban agglomeration with its unique settlement pattern compared to other states in the country. The pressure on developable land is very high across the state and hence any development / conservation policy taken at the national level may require suitable modification to adapt to local situations.

The acceptable recommendations of the WGEEP could be achieved at Grama Panchayat level, by

- Integration of WGDP with decentralized planning process.
- The principle of "People's Participation" for design of locally relevant programmes.
- "Participatory mode" for implementation of WGDP projects through the active involvement of Watershed community,
- Panchayat Raj institutions, Voluntary agencies and Government Departments/ Organizations.
- Strengthening of people's institution viz. Self Help Groups, Neighbourhood Groups, User Groups, Kudumbashree etc for organisation and execution of location specific development activities on watershed basis.
- Linking of various watershed based programmes implemented in the region.

(Source: Website of Town & Country Planning Department, Kerala)

10. REQUEST FOR HEARING

The Terms of Reference of the High Level Working Group, as contained in office order No. 1/1/2010/RE(ESZ) dated 17.08.2012 of the Ministry of Environment & Forests, mandate the Working Group to engage in comprehensive discussions with the representatives of the six states of the Western Ghats Regions (item 11). Accordingly the Government of Kerala proposes a detailed discussion on all these matters with the HLWG for presenting the issues of the State Government and additional points if any from the stake holders. The state Government therefore requests the HLWG to kindly arrange for a discussion and to hear the representative(s) of the State Government before the HLWG takes the final decision in the matters in which it is engaged.

JAMES VARGHESE. I.A.S.
Principal Secretary to Govt. of Kerala,
(Environment, Ports & Fisheries Dept).

Thiruvananthapuram,
05.12.2012.

LIST OF ANNEXURE

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III	Copy of the rebuttals given by Prof: Gadgil to the response of Dr.C.P.Vibhute.	62
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ANNEXURE-I

REGISTERED/ACKNOWLEDGMENT



GOVERNMENT OF KERALA
Environment (A) Department.

No.3527/A2/I1/Envt.

Thiruvananthapuram,
Dated:31-01-2012.

From

Principal Secretary to Government

To

Dr.T.Chatterjee,
Secretary to Government of India,
Ministry of Environment & Forests,
Paryavaran Bhavan, C.G.O.Complex,
Lodhi Road, New Delhi-110 510

Sir,

Sub: - Western Ghats Ecology Expert Panel-Report -Comments -Furnished-Reg.

Ref: - (1) Letter No.1/1/2010-RE-ESZ dated 15.11.2010 from Dr.G.V.Subarmanyam,
Advisor, Ministry of Environment & Forests
(2) This Government letter of even number dated 23.11.2011

Attention is invited to the reference cited. With regard to the report of the WGEEP and the recommendations therein, I am directed to convey the following views of the Government of Kerala.

(i) The WGEEP has attempted to define the Western Ghats (WG) from an environmental view point. Conventionally in Kerala, WG is considered in the geographic point of view as the eastern most and elevated forest regions of the state. In the case of the eastern side of the WG, the panel adopted 500M as the cutoff elevation to determine the boundaries, while for the western edge, the cut off is 150m. (This is an approximation). The panel has admitted that the proposed WGEA will have to take another look at the boundaries since they have not been able to find the time to examine and refine these with enough care. **Therefore the recommendations on the boundary are not objective and final.**

(ii) The panel admits that a uniform set of regulations cannot obviously be promulgated under EPA for the entire region. Hence it adopted a graded or layered approach (ESZ-1, ESZ-2, and ESZ-3) i.e. region of highest sensitivity (1), high sensitivity (2), and moderate sensitivity (3). Protected Areas (PA) in forest are a separate category. **When the boundaries are not fixed, further zonation of the areas to be regulated seems without basis. Also the panel has admitted that zonation adopted was without full set of data as per the criteria**

adopted for demarcating ESZs, nor have it been able to cover all the criteria, due to lack of time. The zonations suggested in the report is totally faulty and unreliable as accepted by the authors. Some taluks and some areas are dragged into zones without any basis. Therefore the recommendation on demarcation of ESZs cannot be accepted as such.

(iii) WGEEP clarifies that ESZ-1 status is assigned only to such grids (a 9x9 km spatial differentiation) as having a score at least equaling or higher than the lowest scoring grids falling within the existing PAs. Such a criterion is not seen adopted for SEZs-2 and 3. WGEEP leaves it to the proposed WGEA, to be done through a participatory process when it is put in place. WGEEP recommends that as a first step, the MoEF may provisionally notify the initial limits of the ESZs at block or taluk level as suggested. In Kerala 15 taluks come under SEZ-1, 2 under SEZ-2 and 8 under SEZ-3. **As the zonation is not after ground level verification, provisional zonation is arbitrary.** It may be pointed out that In Thiruvananthapuram the 9x9 zonation covers the entire breadth of the district in 5 zones (2 PAs, one SEZ-1, one SEZ-2 and one SEZ-3) reaching the coastal area! Such sweeping and overwhelming regulatory measures even if it is purported to be for general welfare may not be agreed to.

(iv) The WG region of the state is governed by the following extant legislations; These unique laws and statutes are sufficient to protect the environment.

FOREST

1. The Kerala Forest Act
2. The Kerala Private Forests (Vesting and Assignments) Act 1971.
3. Kannan Devan Hills (Resumption of lands) Act
4. The Kerala Restriction on cutting and destruction of valuable trees act 1974.
5. The Kerala Preservation of trees Act
6. The Kerala Forests (Vesting and management of Ecologically Fragile Lands) Act, 2003
7. Kerala Promotion of Tree Growth in non-forest Areas act- 2005

REVENUE

8. Kerala Promotion of River Banks and Regulation of Removal of Sand Act 2001.
9. Kerala Land Conservancy Act. 1957
10. Kerala Land Utilization Order 1967
11. Kerala (Restriction on Transfer of lands and Restoration of alienated lands) Act 1975
12. Paddy and Wet land Act, 2008

WATER RESOURCES

13. Kerala Irrigation and Water Conservation Act 2003
14. Pampa River Basin Authority Act, 2009.

CENTRAL ACTS

15. The Indian Forests Act- 1927
16. Forest (Conservation) Act- 1980/1988
17. Biodiversity Act, 2002
18. The Environment Act, 1986

19. The Scheduled Tribes and other Forest Dwellers (Recognition of Forest Rights) act 2006.
20. Wild Life Protection Act. 1973

The above legislations take good care of the WG conservation as intended under the proposed WGEA. The WGEA is proposed to be a regulatory body under the Environment (Protection) Act. But all the above legislations authorize appropriate authorities (not being the WGEA) for implementation. **The WGEA would be extra legal to that extent.** The environmentally sensitive people of Kerala are its 'watch dogs' for protecting its environment. Therefore an additional authority would be redundant. If at all some more legislations are required to protect the environment, it should be left to the state Government; under the federal structure of our country. If at all an authority is to be formed, Kerala should be left out as it is geographically, environmentally, demographically and culturally different from other states sharing Western Ghats (WG).

(v) The state is conventionally divided in to 3 distinct geographic regions, the Highlands above 250' (76.2m) above msl the Midlands between 250, and 25' (7.6m) and Lowlands up to 25' (7.6m) msl. Area wise it is 18653.5, 16231.2, and 3979.3 km² respectively for each units. It may be pointed out that the EFL areas in 984 bits would come to 132.5 km² and that also comes within. Width of the state ranges from 11 to 124 kms only. The Highlands include the High Ranges (>600m) its foothills (300-600m) and upland regions (100-300m) which are residential or agricultural lands. Any attempt to stretch the regulated areas beyond the existing boundaries of the WG (now forested areas or lands classified as forest / plantations adjoining the forests) and/or governed by the existing laws as is applicable to each region would be counter productive and unnecessary for the sake of the WG. **The effort may be to administer the existing legal frame work more effectively so as to achieve the objectives of the WGA under the existing dispensations.**

(vi) Total area of the state is 38,863 km². WG is 21,856 km² (56% of total land area). Inland and Coastal Wetlands extends to 1279.30 km². About 300 kms is under Coastal Zone Regulation. Paddy Lands coming under the ambit of the Kerala Paddy Lands and Wet lands (Conservation) Act comprise of 3818.3 km². In all the regulated areas in existence come to 26983.6km² (69.4%).Balance available for habitation, cultivation and development activities is just 11879.4km² (30.6%), that too subject to zonal restriction under Municipal Laws and the Kerala Building Rules. Though the state is only 1.1% of the total land area of the country, it supports 3.13% of the total population. A further regulatory regime on the effective land area for habitation and development would be grossly unjustifiable and unnecessary. Only 30 % of the land is at present outside the purview of zoning under some laws and introduction of further zones would make life impossible.

The report of the WGEEP makes special, mention of the state in the matter of biodiversity conservation, and activities in furtherance of WG conservation. The panel has lauded the formation of Biodiversity Management Committees (BMC) in all the 978 Grama Panchayats in the state.(The first in the country to have this achievement) , the Udumbanchola Biodiversity Conservation Programme,(a conservation programme of direct WG ecology restoration), incentives for mangrove conservation activities etc. as models to be emulated. The state Government has further such plans like the Sabarimala

Master Plan, Pampa Action Plan, Conservation of Biodiversity rich areas outside Protected Areas, etc: for conservation of the WG areas, which **with possible incentives from the Govt: of India, could better achieve the goals of the WG conservation without further regulatory measures under a central Authority, seriously jeopardizing the development needs of the state.**

(vii) Over the last one century rural and urban population of Kerala increased by 4 and 18 times respectively registering a five fold increase on the whole. In 1901, the population of the state was only 6.4 million, which almost doubled in 40 years. The next doubling took only 30 years. The population density, a mere 165 persons/ km² in 1901 increased to 819 in 2001, exerting significant pressure on land, as per capita land availability dropped from 0.61ha to 0.12ha. Demand on land on housing and urbanization rose many times resulting in the decline of availability of agricultural land. Kerala suffers from very high unemployment. Approximately 10% of India's unemployed population lives in Kerala. Unemployment fuels large scale migration both within and outside the state and country. This leads to migration to highlands in search of more agricultural lands which paves way for encroachment of forest lands. Further regulation of any kind **in midlands and lowlands, on land use would only catalyze such environmentally denigrating activities.**

(viii) All the WG states except Kerala have land east of their WG boundary, whereas the WG is the eastern boundary of Kerala with a land parcel of just 11-124 kms in breadth. Excepting the regulated areas, the free land would be a few islets sandwiched between the regulated areas. If the WGEEP proposals are accepted, the same region would be subjected to more than one zone. For example Coastal Zone Regulation and ESZ Regulations where the three ESZs would come in conjunction. In the case of development projects the EIA procedure under the EIA Assessment Authorities would be an added restriction, which altogether would make things impossible and may turn counter productive. As far as Kerala is concerned, WG is a geographically, geologically, and morphologically distinct and composite subunit of the state's landscape, unlike the eastern slopes which descend more gently and merge with the deccan plateau. Hence distinct conservation and regulatory measures can be adopted and implemented for the WG regions of the state as a separate entity, without the other geographic entities of the state. **In fact the conservation of the WG proper is more important and relevant for the low altitude areas in midland and lowlands, rather than regulations in the low altitude areas for the benefit of the WG.** Towards this end the state Government has already initiated various programmes such as empowerment of BMCs of Grama Panchayats as the authorized agency for the immediate cognizance of environmentally degrading activities in the Panchayats and to report to the concerned authorities for timely actions. The proposed WGEA is almost in the lines of the EIA Authority. Proliferation of the Authorities (State Government proposes to form the Vembanad Eco Development Authority there is provision to form the state River and wet land Authority, River Basin Boards etc.) having concurrent and overlapping jurisdiction might perhaps 'spoil the broth'. The existing laws, statutory popular fora like the BMCs in all the Grama Panchayats, and the hyper sensitive environmentalists of the state would more than serve the purpose. At the same time the conventional WG should be protected and conserved at all costs, for which the State Government is committed.

(ix) Some of the proposals in WGEEP report are draconian. For example, decommissioning of dams older than 50 years, would leave the State without power in a few years.

The above mentioned plausible adverse effects of the recommendations of the WGEEP and proposed WGEA may be considered while finalizing the Western Ghats Ecology Conservation Plans taking into due account of the genuine concerns and issues raised by the state.

I am also directed to convey the alternative suggestion of the State Government that the Ministry of Environment & Forests may send the report to the state for appropriate action, at state level.

Yours faithfully,

•

JAMES VARGHESE
Principal Secretary to Government

Copy to:-

Dr.G.V.Subramanyam,
Advisor,
Ministry of Environment & Forests,
Paryavaran Bhavan,
C.G.O.Complex, Lodhi Road,
New Delhi-110 510.

ANNEXURE- II

COMMENTS OF GOVERNMENT OF KERALA ON THE STATE SPECIAL RECOMMENDATIONS OF WGEEP IN PARA 13 - TABLE 6 (PROPOSED GUIDELINES AND SUMMARY RECOMMENDATION FOR SECTOR-WISE ACTIVITIES)					
Sector	ESZ1	ESZ2	ESZ3	Response	Reasons for the stand
Across the Western Ghats	Genetically modified crops should not be allowed. Phase out the use of plastic bags in shops, commercial establishments, tourist spots, on a priority basis (not more than 3 years)			Acceptable, subject to state policy on permission for G.M crops. Plastic management to be subject to the Recycled Plastics (Manufacture & Usage Rules)	State Government's declared stand is that Genetically modified crops will not be permitted in the state even for trials until the controversy that is going world over on their negative impacts on health; environment and economy are settled beyond dispute. MoEF, Gol has notified the rules for plastic management which should be generally applicable throughout the state for effective implementation by the local bodies.
Land use	For all settlements and built areas/ to be developed areas, certain types of areas would be no-go areas, including water courses, water bodies, special habitats, geological formations, biodiversity rich areas, and sacred groves. Special Economic Zones should not be permitted. New hill stations should not be allowed. Public lands should not be converted to private lands;			Acceptable with modifications. Regulations in wetlands to be in accordance with the Wet Land Conservation Rules 2010 (MoEF) and the Kerala Conservation of Wetland and Paddy land Conservation Act, 2008. The no - go areas in the state for conservation purpose shall be confined to the forest areas under the control of the state forest	The land use pattern in the 3 zones except that in the forested areas is residential and regulating any such areas or portion thereof as no-go areas cannot be thought of. The ecologically significant areas of the state are already governed and secured under appropriate legislations. Lands comprised in the 3 zones not covered by any such acts, rules, notifications guidelines or orders need not be brought under further restrictions of any kind not warranted by statutes. Kerala is fast becoming a single urban agglomeration with its unique settlement

				<p>department, to be notified by that department.</p> <p>The social issues related to the settlements in high ranges where pattayams have to be granted to the eligible families as per the policy decisions of the state government is also to be duly considered.</p>	<p>pattern unlike other states. Pressure on developable land is very high across the state and hence any land use restriction policy of interstate application shall be with due consideration of the state's special status.</p> <p>Sacred groves of the state are well protected under religious sanctions, which allow entry at specified occasions for worship and for customary rites. This has to continue.</p> <p>(See general comments also)</p>
	<p>Change in land use not permitted from forest to non-forest uses or agricultural to non-agricultural, except agriculture to forest (or tree crops) except when extension of existing village settlement areas to accommodate increase in population of local residents. For existing built structures such</p>	<p>Change in land use not permitted from forest to non-forest uses or agric to non-agricultural, except agriculture to forest (or tree crops) except when extension of existing village settlement areas to accommodate</p>	<p>Changes from agricultural to nonagricultural land permitted, con the following (and mitigating the impacts) in addition to the other socioeconomic and environment</p>	<p>Acceptable subject to the relevant provisions of law for the time being in force.</p> <p>The additional conditionality proposed that the WGEA to 'refine' the policy of the MoEF in these matters is unacceptable.</p>	<p>Existing legal setup does not permit such conservation of forest lands. However in matters where the law allows conversion of forest land with or without conditions, such legally permitted activities shall continue to be undertaken in conformity with the procedure therefore.</p> <p>The WGEEP itself has conceded the need for accommodating the increase in population of local residents as an exception to the rigid conditions herein. The State having the highest density of population in the country, educated unemployed, and low per capita land holdings cannot but find beneficial enjoyment of as much revenue land available in the state as possible and it is the special pleading of the state against the</p>

	<p>as hotels, resorts, the tourism policy of the MOEF appropriately refined by WGEA, to be followed. Road and other infrastructural expansion plans to be submitted for EIA scrutiny by the ULB / Local Planning Authority before execution of projects, especially assessing the cost benefits considering ecological costs and public benefits.</p>	<p>increase in population of local residents. For existing built structures such as hotels, resorts, the tourism policy of the MOEF appropriately refined by WGEA, to be followed. Road and other infrastructural expansion plans to be submitted for EIA scrutiny by the ULB / Local Planning Authority before execution of projects, especially assessing the cost benefits considering</p>	<p>al parameters: side ring</p>		<p>report. Kerala has the additional burden of resettlement of the migrant plantation laborers in the Western Ghat Regions. As regards environmental controls, the existing forest and environmental regulations especially the requirement of prior Environmental clearance by the central/ state governments as the case may be for such projects and activities obviate the need for additional mandatory safeguards. In respect of activities impinging upon environment that does not require the prior environmental clearance, the state Government has issued special order in G.O.(P)3/11/Env. dt.07.10.2011 that for all such activities, the concurrence of the state Environment department shall be obtained by the concerned line department of Government. These activities can be better regulated in the western Ghat regions under the extant laws, rules and orders and that need not be reiterated as a special measure of conservation under an ad-hoc statutory or other institution. A regulatory authority to 'refine 'the policy of a central government ministry would be unconstitutional.</p>
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		ecological costs and public benefits.		
Building codes consisting of green technology and green building materials	A building code should be evolved by the WGEA which include inter-alia eco-friendly building material and construction methods, minimizing the use of steel, cement and sand, providing water harvesting methods, non-conventional energy and waste treatment. The application or detailing of the framework would be done by local authorities to suit local conditions.		Unacceptable as a limiting condition for the western ghat areas only. The main obstacle in generally adopting green technologies in building sector is land where it can be done without disturbance to ecosystem. The parameters to be followed while identifying land for green construction are also to be adverted and adhered to.	Green building concept is being adopted in the state in order to make the constructions eco friendly. There are specific conditions in the Kerala Building rules in the matter of structural, water and energy conservation, eco friendly. The externalities associated with individual building constructions requiring prior environmental clearance are adequately being accounted for in the EIA procedure. A building code exclusively for western ghat regions at the instance of the proposed WGEEP is uncalled for. The WG areas are land slide and earthquake prone , which has also to be reckoned while restricting structurally strong dwelling units.
Area treatment/ plot development/ landscaping in the open areas of plots	Certain recognized best practices of construction/development such as topsoil conservation; trees conservation etc. should be followed as per the guidelines of Green Building certifications of Eco Housing, GRIHA or any other appropriate codes to be encouraged. Certain activities for example filling of marshes/ wetlands, introduction of alien invasive species are not permitted. The area that may be paved is to be restricted; paving of		Acceptable subject to local conditions. Acceptable subject to the existing state legislations. There is urgent need to focus on destruction of invasive alien species in the	Land and wetland conservation legislations are in force and necessary floor area and land scape requirements are being insisted and ensured. The needs and rights of the local people and forest dwellers have to be taken in to consideration for implementing land use and green technology practices in the WG regions, to be executed in a bottom up approach.

	ground areas may be done in such a manner that there is no change in the run-off / permeability of the plot overall before and after paving (if some area is paved, the recharge from other areas will have to be enhanced)		state to ensure conservation of native biodiversity.	
Waste treatment	Local authorities should be made responsible to for developing regional systems for handling hazardous, toxic, biomedical wastes as well as recyclable materials		Acceptable. The existing rules in this regard adequately take care of this requirement.	Extended Producers' Responsibility shall be enforced more strictly as a general condition in respect of such wastes as provided in the rules. Individual units / wastes producers shall be made responsible for developing regional systems for handling hazardous, toxic, bio medical and recyclable materials for channelizing such wastes to common facilities on the basis of polluter pay principle. Local bodies need be facilitators, especially for providing land for the facilities.
	No hazardous or toxic waste processing units	No hazardous or toxic waste processing units	Recycling and waste processing and units compliant with PCB regulations should be sited in ESZ3 areas (or outside the WG region) and should cater to nearby ESZ1 and 2 areas	Acceptable in the case of toxic and hazardous industrial wastes. In the matter of BMW centralized treatment and disposal facilities compliant with PCB regulations may be set up at non-forest WG areas. Waste processing units for ESZ 1 and 2 at ESZ3 or outside WG regions is well neigh impossible and will not be considered on any account, those being residential areas.

				otherwise would have been suitable.
Wastewater Management	Mandatory for all layouts/ building developments though the choice of technology would vary with size of settlement; should be such as to permit, reuse, recharge, recycling as locally appropriate and permit recovery of energy where possible.	Acceptable.		Existing legislative and regulatory measures are adequate to deal with the issue.
Water	Decentralized water resources management plans at Local Self Government level.	Acceptable		As per section 171 of the Kerala Panchayat act 1995, vesting of community property or income in village panchayats. - any property or income which by custom belongs to or has been administered for the benefits of the Villagers in common or lands under a particular source of petty irrigation shall vest in the village panchayat to be administered by it for the benefit of the villagers or holders aforesaid. As per the third schedule on functions of Village Panchayats, water resources management plans have been determined and the legal provisions are effectively being carried out in the state. High altitude valley swamps and water bodies in the state are under the protection of the forest department. Inculcating environmental awareness and motivating local action for environmental up gradation are general functions of the Grama Panchayats.
	Protect high altitude valley swamps and water bodies.	Acceptable		
	Catchment area treatment plans of hydroelectric and major irrigation projects should be taken up to improve their life span	Acceptable		
	Improve river flows and water quality by scientific riparian management programmes involving community participation.	Acceptable		
	Water conservation measures should be adopted through suitable technology up gradation and public awareness programmes.	Acceptable		
	Inter-basin diversions of rivers in the Western Ghats should not be allowed	Not acceptable		

				Out of the ten west flowing rivers of the state having the total catchment/drainage area of 16211 sq;km, 5210sq; km is in Karnataka and 5398Sq; km in Tamilnadu. Due to the inter state river liabilities, the state which is a late comer in the water resources utilization, be it hydro power generation or irrigation, or drinking water projects has no other way but to use the available water resources to the maximum possible, subject to the laws in force. Any further embargo would be unnecessary, discriminatory and hence unacceptable.	
Agriculture	Promote organic agricultural practices; discourage cultivation of annual crops on slopes exceeding 30%, where perennial crops should be promoted; introduce incentive payments for sequestration of carbon in soils, introduce incentive payments for maintenance of select traditional cultivars, encourage participatory breeding programmes to improve productivity of traditional cultivars; encourage	Acceptable subject to time frame for shifting from conventional to organic. The GOI should provide special budgetary assistance to the state for organic farming in the WG regions and also for the recommended incentivisation schemes. The incentivisation for carbon sequestration shall be included in the National Action Plan for climate change.		The state Government has already adopted an organic farming policy. These general strategies have been adopted therein as the general policies. The approach is to adopt organic farming in a phased manner. Budgetary allocation is also being made. The action plans also envisage inclusion of organic farming as a scheme to be taken up by the three tier local Self Government institutions through their annual plans. Farming in the tribal areas of the state shall be in the organic way.	
	Promote organic	Phase out all use	Phase out all	Acceptable subject to the	The proposed zonation covers the bulk of

	<p>agricultural practices; discourage cultivation of annual crops on slopes exceeding 30%, where perennial crops should be promoted; introduce incentive payments for sequestration of carbon in soils, introduce incentive payments for maintenance of select traditional cultivars, encourage participatory breeding programmes to improve productivity of traditional cultivars; encourage</p>	<p>of chemical pesticides/ weedicides within eight years Phase out, through a system of positive incentives, use of chemical fertilizers within eight years</p>	<p>use of chemical pesticides/ weedicides within eight years Phase out, through a system of positive incentives, use of chemical fertilizers within eight years</p>	<p>time frame for shifting from the conventional to organic and supply of quality inputs to the farmers, and only at selected farming areas. Government of India shall provide necessary incentives and subsidies to the farmers converting to organic. Availability of quality organic inputs shall also be ensured.</p>	<p>the state and hence the proposals tantamount to converting the entire state as organic. Recommendations for ban on pesticides within the fixed time line of 8, 10 years in the three ESZs may not be feasible. So also shift to 100% organic cultivation within the proposed periods would not be possible, given the obligation of the state for food security and high tech farming. It would not be practicable to phase out all chemical fertilizers. Organic farming would be practical at selected areas. Imposing farming practice conditions on unwilling farmers without effective alternatives for agrochemicals would be counterproductive. It may not be possible for commercial cultivation to phase out chemical pesticides without effective alternatives. In Kerala Red and yellow insecticides are already banned. Total ban on others as recommended is not practicable. It may be done in a systemic and phased manner. The state government had commissioned a pilot project on organic rice farming through the State Biodiversity Board which was promising. Pursuantly the Agriculture department has been advised to adopt the polders of Kuttanad around Vembanad lake (Ramsar Site) and Vellayani Lake near Thiruvananthapuram City (drinking water</p>
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					source) for organic farming. The cardamom plantations in Udumbanchola Taluk have also been identified as a strategic area to be brought under organic farming.
Animal Husbandry	<p>Introduce incentive payments as 'conservation service charges' for maintenance of land races of livestock; Redeploy subsidies for chemical fertilizers towards maintenance of livestock and production of biogas and generation of organic manure;</p> <p>Restore community grasslands and forest grazing lands outside the Protected Areas. Breeds which can withstand adverse agro climatic conditions should be encouraged. Application of weedicides in cash crop areas alongside the roads must be prohibited, since almost all plants coming under the weed category are rich cattle fodder. The unused land in tea estates should be used for cattle rearing and the organic manure thus produced used for tea plantation.</p>	<p>Acceptable.</p> <p>To be adopted in all areas under organic farming. Cannot be confined to WG regions alone.</p> <p>Acceptable</p> <p>Acceptable</p> <p>Acceptable</p> <p>Acceptable</p>			<p>Improvement of genetic variability of indigenous breeds is an environment policy of the state government. Promotion of on-farm and ex-situ conservation of local breeds and varieties by giving incentives to farmers and conservation of the germplasm of local varieties of domesticated animal diversity are approved action plans of the Kerala State Biodiversity board and the Board is implementing schemes for germplasm conservation of the native Vechoor cows, the smallest cattle species in the world, which has been included in the list of endangered cattle published in the National Bureau of Animal Genetic resources, ICAR and FAO among the Indian breeds.</p>
Fishery	<p>Strictly control use of dynamite and other explosives to kill fish; provide fish ladders at all reservoirs Introduce incentive payments as 'conservation service charges' for maintenance of indigenous fish species in tanks under control of Biodiversity Management Committees or Fishermen's co-operatives; monitor and control trade in aquarium fishes with the help of Biodiversity Management Committees</p>	<p>Acceptable</p> <p>Acceptable</p>			<p>Use of dynamites and other explosives for fishing has already been banned in the state, under the Kerala Inland fisheries and Acqua culture Act. Kerala Agricultural University has developed captive breeding technology for 13 species of fishes, which is the first of its kind in India. The technology has already been transferred to scientists, farmers and entrepreneurs for their commercial</p>

				production.(Ornamental Fishes of the Western Ghats of India- National Fish Genetic Resources.2007)
Forestry: Government lands	Forest Rights Act to be implemented in its true spirit by reaching out to people to facilitate their claims, Community Forest Resource provisions under FRA to replace all current Joint Forest Management programmes.	Acceptable subject to continuance of the Joint Forest Management Programmes and national environment and forest policies.		The spirit of conservation which forms the basis of the report is welcome. The FRA is successfully implemented in Kerala . as on date, 21059 RoRs have been issued to the Scheduled Tribes in the state out of the 31917 applications. Considering the progress in other states this is comparatively the best figures. The community Forest Resources provisions as recommended in the report and the current joint Forest management Programme can co-exist. The Joint Forest Management Institutions will have a role to play in forest protection and management even after the community forest resources provisions are implemented. The forest areas are managed as per the working plans Management Plans approved by MoEF in accordance with the provisions of National Environment and Forest policies. Therefore along with the protected areas all the forest s may be kept out of the ESZ classifications, to be managed under the extant legislations.
	No monoculture plantation of exotics like eucalyptus;	No monoculture plantation of exotics like eucalyptus;	No monoculture plantation of exotics like	Acceptable subject to the contractual obligations of the forest department, with time frame for removal of plantations at one go would create legal

	No pesticide/weedicide application; Extraction of medicinal plants with strict regulations	Encourage planting of endemic species; Phase out pesticide/weedicide application; Extraction of medicinal plants with strict regulations	eucalyptus; Encourage planting of endemic species; Phase out pesticide/weedicide application; Extraction of medicinal plants with strict regulations	the planted introduced alien species	problems to the Forest department in meeting the contractual obligations to the industries.
Forestry: private lands	Recognize rights of all small-scale, traditional private land holders under FRA, Introduce incentive payments as ,conservation service charges for maintenance of natural vegetation for small land holders, as also for switch-over from annual crops to perennial crops on steep slopes for small landholders. Introduce incentives such as tax breaks or renewal of leases as ,conservation service charges' for maintenance of natural vegetation for small land holders;			Acceptable Acceptable subject to conservation of traditional farming practices of indigenous varieties and rice and with the incentives and subsidies and all other conveniences that are being extended to cash crops being equally made available to farmers adopting eco-friendly traditional cultivars, as a special scheme of the government of India.	The Biodiversity Act requires formation of Local Biodiversity Found at the Grama Panchayat level for such activities. The MoEF may formulate schemes for contribution as grant-in-aid to the Biodiversity funds for such voluntary conservation activities. The Kerala Forest department had implemented a scheme to insentivise the owners of the mangrove areas, but there were very few applicants. However such incentives will not match the benefits of alternative land use in a state like Kerala where land is very costly. A new concept of "Tree Bank" with planting of timber yielding indigenous trees in the western ghat regions that would help

					increase the tree cover as a participatory model has been mooted which merits consideration with incentives from the Govt.
	<p>No monoculture plantation of exotics like eucalyptus; existing plantations of such exotics should be replaced by planting endemic species or allowing area to revert to grassland where it was originally grassland.</p> <p>No pesticide/weedicide application; Extraction of medicinal plants with strict regulations ;</p> <p>Encourage planting of endemic species</p>	<p>No monoculture plantation of exotics like eucalyptus; existing plantations of such exotics should be replaced by planting endemic species or allowing area to revert to grassland where it was originally grassland</p> <p>Encourage planting of endemic species;</p> <p>Quarrying with strict regulations;</p> <p>Phase out pesticide/weedicide application</p>	<p>No monoculture Plantation of exotics like eucalyptus; existing plantations of such exotics should be replaced by planting endemic species or allowing area to revert to grassland where it was originally grassland</p> <p>Encourage planting of endemic species in private forests;</p> <p>Quarrying with strict regulations;</p>	<p>Acceptable subject to the above condition.</p> <p>Acceptable</p>	<p>The exotic varieties were planted by the social forestry programme of the government of India under external assistance.</p> <p>As per the Organic farming policy of the state Government, farming in the tribal areas of the state shall be in the organic way.</p> <p>As regards quarrying, the Hon: Supreme Court in the interim order dtd 27-2-2012 in SLP No 729-731/2011 (Deepak Kumar Vs State of Haryana) and connected cases has directed that prior environmental clearance shall be obtained for mining of minor minerals regardless of the mining area. In compliance therewith the MoEF has issued directives to follow the existing notification on prior environmental clearance, which applies to quarrying a well.</p>

			Phase out pesticide/ Weedicide application			
Biodiversity	Introduce incentive payments as 'conservation service charges' for maintenance of sacred groves; for maintenance of biodiversity elements on private lands, lands under control of Biodiversity Management Committees, JFM lands, and lands assigned as Community Forest Resources. Make special funds available to Biodiversity Management Committees for disbursement in relation to wildlife related damage		Accepted subject to devolution of funds to the state Environment departments by the MoEF for these purposes.	The Biological Diversity Act-2002 lays down constitution of National Biodiversity fund in Section 27(1) thereof, to which the Central Government may pay such sums of money as grants or loans. The fund can be applied for conservation and promotion of biological resources and development of areas from where such resources or knowledge associated thereto has been accessed and also for socio-economic development of such areas in consultation with the local body concerned. Government of India may provide adequate grants to the National Biodiversity Authority to introduce such incentive schemes by the WG State Biodiversity Boards and also to support the BMCs.		
Mining	No new licenses to be given for Mining. Where mining exists, it should be phased out in 5 years, by 2016. Detailed plans for environmental and social rehabilitation	No new licenses to be given for mining. This moratorium can be reviewed on a case by case basis Existing mining to adopt good	New mining may be taken up only for scarce minerals not available on the plains and should be under strict	Acceptable subject to the laws and rules governing these matters and interim orders dtd 27-2-2012 of the Hon: Supreme court in SLP No 729-731/2011 (Deepak Kumar Vs State of Haryana) and pursuant directives of the MoEF, and the final decision of the	As far as mineral resources of the state is concerned, the mid-land- high land region is enriched with major mineral deposits such as gold, graphite, limestone, tungsten, Bauxite, gemstone etc; and minor mineral deposits such as granite building stone, Granite Dimension Stone, laterite etc. 80% of the mining area are less than 5 hectares in extent. Government have been granting mining leases and permits with due	

	of mines to be closed. Illegal mining to be stopped immediately	practice mining and be under strict regulation and	regulation and social audit, subject to free prior informed consent of tribal and other communities and in recognition of tribal rights. Existing mining to adopt good practice mining and be under strict regulation and social audit. Illegal mining to be stopped immediately.	Supreme court in matters connected thereto. The state which does not have sizeable deposits of major minerals and no major mines shall be given due consideration to sustainably utilize its natural resources in the environment friendly manner as permitted by rules and laws as would be possible to all other states. The state will be submitting a special scheme for regulation of mining especially of quarries and sand mining in the Supreme court seeking special consideration and diluted EIA procedure in view of the lesser scale and extent of mining activity.	consideration to the environment friendly exploitation of the mineral resources for the substance of the mineral based industries of the state, thereby increasing the revenue of the government. The mineral minerals are inevitable raw material to the construction industry. Thodupuzha , Udumbanchola, Devikulam,Peerumade, Thalassery, Punalur, Mannarkad, Chittur, Ranni, Pathanamthitta, Nedumangad, Iringalakkuda, Vythiri, Mananthavady, and Sulthan batherry taluks fall within ESZ.I. These taluks are the only source of building materials and other minerals of the state. The proposed regulations in the three ESZs would deny the state of the benefit of these natural resources in the entire state and would create unpredictable adverse consequences in the industrial, economic, labour and social sectors in the state. Lakhs of migrant labourers of other state would also be at the receiving end.
Quarry and sand mining	Where exists should be controlled effectively for environmental and social impacts immediately. No new licenses to	Upgradation possible/permitt ed subject to strict regulation and social audit	Existing and new quarry and sand mining should be under strict regulations	Covered by the interim orders dtd 27-2-2012 of the Hon: Supreme court in SLP No.729-731/2011 (Deepak Kumar Vs State of Haryana) and pursuant directives of the MoEF.	As the mining area is generally less than 5 hectors and majority are small scale units employing limited daily waged employees, mainly migrant laborers, EIA procedure as applicable to large scale industrial activities cannot be insisted. The state Government proposes to file a special scheme for regulating the quarry operations and sand

	be given for quarry and sand mining		and social audit and without affecting tribal rights		mining in the Supreme Court for approval as per the interim orders of the Hon: Supreme Court in SLP No:729-731/2011(Deepak Kumar Vs State Of Haryana)
Polluting Industry (Red /Orange)	No new polluting (red and orange category) industries; for existing industries switch to zero pollution by 2016 and be subject to strict regulation and social audit	No new polluting (red and orange category) industries; for existing industries switch to zero pollution by 2016 and be subject to strict regulation and social audit	New industries may be set up under strict regulation and social audit.	Not acceptable in the case of hospitals and hotels. In the case of existing industries those can be made to comply with stringent pollution abatement norms as per the effluent / emission standards as per the environment (protection) Rules.	Hospitals come under Red category and hence no hospitals could be set up if the restriction proposed for the SEZs are accepted. Even hotels and resorts come under orange category and could not be allowed in non-forest areas. Hospitals shall be allowed at non forest WG areas regardless of zonation and orange category hotels and resorts as per consent to be issued or EIA procedure as may be applicable.
Non polluting (Green/ Blue) Industry	With strict regulation and social audit. Local bio resource based industry should be promoted. All should be strictly regulated and be subject to social audit	Promote Green/ Blue industries. Local bio resource based industry should be promoted. All should be strictly regulated and be subject to social audit.	Promote Green/ Blue industries. Local bio resource based industry should be promoted. All should be strictly regulated	Acceptable.	Existing rules and regulations can be applied and activities regulated. The state government has already taken decision to designate the Grama Panchayat level Biodiversity Management Committees as the 'Environmental Sentinels' of the respective areas, which can ensure compliance of the consent conditions and immediately interfere in cases of violation.

			and be subject to social audit		
Power/Energy	<p>Educate the energy consumer about the environmental and social impacts of energy production and the need for reducing 'luxury' demand.</p> <p>Encourage demand side management; enhanced energy efficiency across sectors .</p> <p>Launch 'smart campaigns as key components of demand side management, focusing on smart grids, smart buildings, smart power, smart logistics and smart motors.</p> <p>Promote decentralized electricity, use of solar power</p>		Acceptable	State Government is already promoting such consumer awareness programmes	
	<p>Allow run of the river schemes with maximum height of 3 m permissible which would serve local energy needs of tribal/ local communities / plantation colonies subject to consent of gram sabha and all clearances from WGEA, SEA and DEC.</p> <p>No forest clearance or stream diversion for new projects.</p>	<p>Small bandharas permissible for local and tribal community use / local self government use.</p> <p>No new dams above 15 m or new thermal plants permissible</p> <p>New hydro projects between 10- 25 MW (up to 10 m ht) permissible</p> <p>All project categories</p>	<p>Large Power plants are allowed subject to strict environmental regulations including</p> <ol style="list-style-type: none"> 1. cumulative impact assessment studies. 2. carrying capacity Studies. 3. minimum forest clearance (norms to be set by 	<p>The rationale for limiting the capacity of power projects in the SEZ1 and 2 have not been given.</p> <p>The embargo on new hydro electric projects and the conditions proposed are unacceptable.</p>	<p>The Indian delegation canvassing for World heritage site status for the WGs was of the opinion on the biodiversity impact of some of the dams in the WG region that were built long ago that they had no major environmental impacts.</p> <p>Kerala's requirements of power, irrigation and drinking water are now being met by the storage reservoirs at the high ranges proposed to be made ESZ1. Decommissioning the dams will virtually fail the state in all the above sectors. All the existing and proposed hydroelectric projects are in the proposed ESZ.1. The recommendation that only dams having the height of 3m will be permitted in ESZ1 will effectively thwart the state's proposals for</p>

	<p>Run of the river schemes not allowed in first order or second order streams . Promote small scale, micro and pico hydropower systems, that are people owned & managed and are off grid. New small hydropower projects (10 MW and below) are Permissible. No new thermal power plants. Strict environmental regulation of existing thermal power plants. Existing thermal plants to actively promote alternate uses of fly ash - such as in road making in addition to the existing</p>	<p>subject to very strict clearance and compliance conditions through SEA and DEC's of WGEA. Have run off the river hydropower projects but after cumulative impact study of the river basin is done Regulated wind power projects but after cumulative environmental impact assessment (CEIA) Zero pollution to be required of existing Thermal Power Plants</p>	<p>WGEA). 4. based on assessment of flows required for downstream needs including the ecological needs of the river. Existing Power plants subject to strict regulation and social audit. Zero pollution to be required for new thermal power plants. Wind projects only after CEIA. For already existing dams reservoir operations to be</p>		<p>harvesting hydroelectric power, since dams cannot be built at any places in the other zones. There is no alternative for the 2500MW of power generated in the state from the hydal projects. Diversion of rivers and forests is also not permitted. The condition that the dams 50 years old shall be decommissioned and the prospects of no new dams would prevent the state from having electricity and producing it in the only way by which it could be produced here eco friendly and economically. The WGEEP has put hurdles in setting up coal based and gas based power plants. The only source of power generation in the state in the conventional sector in the most economic way is hydal projects. The most abundant natural gift in the state is its water resources. If no dams are possible in ESZ 1, all the irrigation projects conceived in the state will have to be abandoned, leading to the desertification of the state. Major projects such as the new dam at Mullaperiyar, Chaliyar projects, Pambar projects Attappady projects, Kabini projects and the Kavery Tribunal award as the share of Kerala of the east flowing rivers cannot be utilized. The report adopts 150 meters above the mean sea level as the western boundary of the WGs. But in respect of Kerala this</p>
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	<p>practices of manufacture of fly ash bricks. No large scale wind power projects. Promote biomass based /solar sources for decentralized energy needs.</p>		<p>rescheduled for allowing more water downstream.</p>	<p>Not acceptable.</p>	<p>criterion is not seen adopted. The criterion adopted for determining the boundaries of the RSZs are also not clear. The zonation extends to coastal areas in some cases! Places at 40M msl also come under ESZ regulations. Whereas the northern and eastern limits have been defined, only the western limit has been left out. Whereas the potential areas for hydel projects in the WG areas of the state have been categorically brought within the ESZ, such areas of other states have been conspicuously left out , making it impossible for the state to have projects such as twin Kallar, when the other states can proceed with their projects at similarly situated areas , and even look positively at the river linking proposals mooted. The blatantly discriminatory and malafide recommendations are violative of the forest laws applicable, as exposed by the Hon: Supreme court in the land mark Judgment dtd July 6, 2011 in <i>Lafarge Umiam Mining Private Limited ("Lafarge") (T.N. Godavarman Thirumulpad v. Union of India, Interim Applications 1868, 2091, 2225 to 2227, 2380, 2568, and 2937 in W.P. No. 202 of 1995)</i> relevant portion of which is extracted below: <i>'As stated in our order hereinabove, the words "environment" and "sustainable</i></p>
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				<p><i>development" have various facets. At times in respect of a few of these facets data is not available. Care for environment is an ongoing process. Time has come for this Court to declare and we hereby declare that the National Forest Policy, 1988 which lays down far-reaching principles must necessarily govern the grant of permissions under Section 2 of the Forest (Conservation) Act, 1980 as the same provides the road map to ecological protection and improvement under the Environment(Protection) Act, 1986. The principles/ guidelines mentioned in the National Forest Policy, 1988 should be read as part of the provisions of the Environment (Protection) Act, 1986 read together with the Forest (Conservation) Act, 1980.'</i></p> <p>To the above extent the recommendations against construction of dams for power, irrigation and drinking water purposes in the proposed SEZs are illegal and maybe rejected.</p> <p>Kerala has excellent potential for wind energy (about 605 MW).In the face of growing opposition against conventional and nuclear power generation, the state has to explore non- conventional power as well, which will be adopted following the procedure for environmental clearance,</p>
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					wherever necessary.
	<p>No diversion of streams/ rivers allowed for any power projects and if already existing, to be stopped immediately.</p> <p>Catchment area treatment in a phased manner following watershed principles; Continuous non-compliance of clearance conditions for three years would entail decommissioning of existing projects. Dams and thermal projects that have crossed their viable life span (for dams the threshold is 30-50 years) to be decommissioned in phased manner. All project categories to be jointly operated by LSGs and Power Boards with strict monitoring for compliance under DECs</p>			<p>Unacceptable in respect of hydel projects inside the state</p> <p>Acceptable</p> <p>Unacceptable</p> <p>Unacceptable.</p> <p>Unacceptable. LSGs have no mandate to operate power projects. The legally approved authority such as the State Electricity Board shall be the competent authority to operate power projects.</p>	<p>Please see general remarks in section 4</p> <p>Decommissioning of dams as a penalty for post commissioning violation of environmental clearance conditions is not a responsible recommendation. The Environment (Protection) Act 1984 has provisions to deal with such situations. Decommissioning of dams and thermal projects that have crossed their viable life span 30-50 years even in phased manner could only create further ecologically disagreeable problems in so far as sustainable ecosystems have already been established around the reservoirs and flourishing. It cannot be changed every 50 years. There are approved schemes for dam monitoring.</p>
Transport	No new railway lines and major roads, except where it is highly essential(as perhaps, in case of Goa), and subject to EIA, strict regulation and social audit.	No new railway lines and major roads, except when highly essential and subject to EIA, strict regulation and social audit.	Essential new roads/ railways may be allowed subject to strict regulation and social audit.	Railway projects are outside the purview of prior environmental clearance as per the MoEF notification thereon. That restriction for the vital transport infrastructure shall be imposed in the WG regions is unacceptable.	<p>Though railway through forests may be restricted, the facility need not be denied at other places; especially electrified rail way is an environmentally compatible mode of transport and is being advocated as a viable alternative for major road transport infrastructure.</p> <p>The M.Ps from the state and Tamil Nadu had categorically pointed out the necessary road facility between Thiruvananthapuram</p>

	Avoidance of new highways, expressways	Upgradation of			and Thirunelveli via Kottoor-Ambasamudram before the WGEEP. The MoEF has adopted a policy scheme and framework of generic and specific guidelines for the creation, design, realignment, removal, restoration, maintenance and mitigatory measures for roads and power lines in defined natural areas of importance in the country recognizing the diversity of situations and environments across the country, wherein provision is made for incorporation of site-specific expert advice, consultation, and implementation. These recommendations are therefore infructuous.
Tourism	Ecotourism policy of MoEF refined by the WGEA to promote minimal impact tourism in the region. Strict regulation for waste management, traffic and water use	Strict regulation on basis of a Tourism master plan and social audit. Tourism Master Plan should be based on carrying capacity of area and after taking into account social and environmental costs.	Strict regulation and social audit Tourism Master Plan should be based on carrying capacity of area and after taking into account social and environmental costs	Acceptable subject to the condition that in non forest areas coming under SEZ 1, the conditions for SEZ 2 shall be applicable. Safe tourism practices are to be enforced inside sanctuaries making the ecotourism spots in the forests eco-friendly rather than tourist friendly.	Conservation of the WG has a very significant place in the tourism promotion activities of the state. The ecotourism activities in the WG regions are as per the guidelines of the MoEF. Almost all the ecotourism activities are managed through the Vana Samrakshana Samithies and eco Development Committees of the Forest Department. New tourism initiatives are taken up only based on Tourism Master Plan prepared considering carrying capacity and after taking in to account social and environmental costs. The world heritage tag is expected to increase the global attention and visitation to the WGs. Ecotourism activities in the

				World Heritage Sites of the WGs may have to be streamlined after assessing the carrying capacity of the individual sites.
Education	<p>Reconnect children and youth to local environment through education programmes focusing on local environmental issues, especially degradation of natural resources of land and water and air and water pollution. Tailor Environmental Education projects to serve as an instrument of participatory environmental monitoring involving local community members; connect such exercises to preparation of 'People's Biodiversity Registers' by the local Biodiversity Management Committees</p> <p>Students' 'River Clubs' should be encouraged in schools situated along the course of the respective river.</p> <p>Teach agriculture in schools</p>	Acceptable		<p>The state government is giving utmost priority to environmental awareness. Several NGOs are also contributing to this cause. The National Green Corps, (Schools) , Bhoomitra senas (Colleges) and several environment oriented activities are functional in the state. The state government has formulated a major scheme for environment and biodiversity conservation based on the PBRs of Grama Panchayats for the educational institutions of the respective areas and submitted to the NBA for funding. The MoEF may reorient its funding for environmental education as recommended by the WGEEP so that the PBRs would be put to use, BMCs and the students benefitted.</p>
Science and Technology	<p>Cumulative impact assessment for all new projects such as dams, mines, tourism, and housing, that impact upon water resources should be conducted and permission given only if they fall within the carrying capacity. Focus research on perfecting green technology and make it affordable for common people.</p> <p>Environment flow assessments indicators should be worked out by Research institutions, NGOs along with local communities.</p>	<p>Acceptable except in the case of housing.</p> <p>Acceptable subject to consideration of the needs and rights of the local people for land use and nature of the green technology to be perfected.</p> <p>Acceptable</p>		<p>It is the constitutional duty of the government to provide houses to the poor. Schemes for members of the Scheduled tribes (forest dwellers) , Scheduled Castes and those below poverty line may have to be implemented . In the state having the highest density of population and non availability of land housing activities (except at the legally prohibited areas of the WGs) cannot be controlled.</p> <p>The WGEEP itself has conceded the need</p>

			for accommodating the increase in population of local residents as an exception to the rigid conditions recommended.
Information management	Build on the Western Ghats database of WGEEP to create an open, transparent, participatory system of environmental monitoring involving all citizens, in particular the student community. Update and upgrade a hydrological data base of rivers and consolidate the ecological data base and information at river basin level.	Acceptable	<p>The ENVIS scheme of the MoEF may take over this function.</p> <p>The NGC volunteers of the WG states can involve in the activity.</p> <p>A special centrally sponsored programme in the lines of the National Ambient Water Quality Monitoring programme of the State Pollution Control Boards ,may be introduced through the state Environment Departments for regular monitoring of the ecological status of the rivers.</p>

Amrutmanthan - WGEEP: Rebuttal to objections raised by Dr C P Vibhute

Link of this article --} <http://wp.me/pzBjo-M6>

Link of the Amrutmanthan Blog --} <http://amrutmanthan.wordpress.com/>

Rebuttal to objections raised by Dr C P Vibhute

A Pune based environmental consultant for industries Dr. C. P. Vibhute, has termed the report on Western ghats by the committee of experts headed by Madhav Gadgil as incomplete, erroneous and technically faulty and has demanded that it be scrapped.

He has released a Press Note (in Marathi) consisting of 16 objections against the WGEEP Report. Dr. Madhav Gadgil and other members of the panel have prepared a point by point rebuttal of objections raised by Dr. Vibhute.

We present below, English translation of Dr. Vibhute's objections together with the clarification to each of the points, released by Dr. Madhav Gadgil, on behalf of the WGEEP (Western Ghats Ecology Expert Panel), constituted by the Ministry of Environment & Forests' (MoEF) of the Central Government.

"Dr C P Vibhute, who has made a number of baseless allegations against the report of the Western Ghats Ecology Expert Panel, has apparently failed to grasp much of significance that is stated in the report. For instance, in his point 2 he states that there is no mention of the opinion of the experts who have studied bio-diversity. Pages 227- 235 of Part II of the Report lists names of 80 experts invited to write Commissioned Papers. Some 44 of these are experts in biodiversity, others are experts in a variety of fields including geology, history, economics and law. Most of these experts contributed Commissioned Papers; all these papers have been available on the Panel's website. The report also has details of a number of brainstorming sessions the Panel organized with record of names and opinions of the experts."

Now to take up each of Vibhute's points:

- 1) 'Western Ghats Ecology Expert Panel' report has been uploaded on the website of the Environment Ministry for inviting suggestions from the public. After studying the same, prima facie it appears to be incomplete, deficient, technically erroneous. From the report it appears that excessive importance has been given to the opinions expressed by the people during the meetings as well as the reactions expressed by the NGOs. This would become clear from the points given below.

As clarified above, the Panel has had wide ranging interactions with scientific and technical experts, both during the work of the Panel, and outside as part of the Panel members' professional work over many years. Of course, we value the understanding and conservation traditions of the rest of the society as well. We were specifically asked in our mandate to consult the people and Governments of Western Ghats, and we have done so. We have talked to fishermen and farm labourers, forest dwellers and orchard owners. We have talked to mine owners and beach shack owners. We have talked to members of gram panchayats and

members of Parliament. We have talked to NGOs and IAS officers. We believe that such an inclusive approach has led to a very balanced report.

- 2) There is no mention of the opinion of the experts who have studied biodiversity. This assertion has been partly dealt with above. The Panel has organized a website and comments and views posted by a large numbers of experts on this website have run to thousands of pages. Besides, the Panel members themselves are some of the best recognized experts on biodiversity. Gadgil has been awarded the Centennial Medal by Harvard, considered the world's best university, for his contributions to this field.
- 3) There is no scientific basis for the Eco Sensitive Zones shown in the Western Ghats. Because there is no consensus among the experts with regard to determination of borders in this context.

MoEF constituted WGEEP in March 2010 with a mandate to demarcate areas within Western Ghats Region which need to be notified as ecologically sensitive. This concept of ecologically sensitive areas is very much an Indian invention, rooted in attempts by civil society to use the Environment Protection Act 1986 to promote sustainable development alongside protection of the natural heritage. The term 'Ecologically Fragile Area' was first used in 1991 for Dahanu Taluka in Maharashtra, followed by the declaration of other ESAs like Mahabaleshwar-Panchgani and Matheran. These are all initiatives of civil society organizations or are a consequence of a resolution of Indian Board for Wildlife in 2002 to protect areas up to ten kilometers from the boundaries of Wildlife Sanctuaries and National Parks.

Initially, there were no guidelines available on what areas may be considered as ecologically sensitive, nor on working out an appropriate management regime. These issues were addressed in 2000 by the Pronab Sen Committee. Pronab Sen committee, appointed by Ministry of Environment and Forests had recommended in 2000 that the Government should establish a comprehensive programme for generating base-line data on different aspects relating to bio-geographical regions in India, systematically map and record such information on ecological characteristics, and establish a comprehensive monitoring programme and network involving not only government agencies but also other institutions, universities, NGOs, and even individuals, particularly those living in and around these areas. Furthermore, the Sen Committee urged that this be undertaken in Mission mode. Unfortunately, neither had happened. There had, however, been one development of significance, that of district-wise Zoning Atlases for Siting of Industries (ZASI) by Central and State Pollution Control Boards. However, MoEF has not released this exercise; as a result, WGEEP had to start from the scratch.

WGEEP thus needed to address manifold challenges; formulate the non-standard concept of ESAs, develop a database on ecological parameters for the Western Ghats region, assign Ecological Sensitivity scores and delineate Zones of different levels of Ecological Sensitivity over the region, solicit suggestions from civil society and gram sabhas on constituting ESAs, suggest management strategies, and finally, suggest mechanisms for building upon what was necessarily a preliminary exercise. WGEEP attempted this in a fully transparent, participatory mode, while, at the same time observing due scientific discipline.

Ecological Sensitivity being a non-standard concept, WGEEP began by organizing a web-based discussion, and publishing a paper in *Current Science* in January 2011. The following working definition was arrived at: ESAs as those *areas that are ecologically and economically important, but, vulnerable even to mild disturbances and hence demand careful management*. Since sensitivity scores had to be arrived at within a year over this extensive tract, our focus was on accessing pertinent computerized databases. Fortunately, several were available: Western Ghats boundary, boundaries of states, districts, talukas, Shuttle Radar Topographic Mission (SRTM) 90 m resolution data, Protected Areas, Forest types of India, percent forest, unique evergreen elements, forest with low edge, Enhanced Vegetation Index of MODIS, riverine forests derived through drainage and forest cover, data on endemic plants, vertebrates, and dragonflies- damselflies, Red list Mammals, Important Bird Areas, and Elephant Corridors.

Such exercises, like the globally accepted Important Bird Areas, naturally involve subjective elements, but we sought to put it on an objective scientific basis by explicitly stating the methodology and making public the nature and quality of the information used, along with its limitations. We can confidently state that we have done very well in fleshing out this important concept and developing an appropriate scientific methodology in a transparent, participative mode. We have created an Environmental Decision Making System on a regional basis for the first time for India. Of course there are many disagreements, including on boundaries of the zones. In his pioneering work on "Social Functions of Science" Bernal defines science as an organized enterprise of scepticism. Science progresses through doubts and disagreements without allowing itself to suffer from paralysis by analysis. So the country needs to build further on this exercise, improving it as we go along.

- 4) Owing to the drivers used by the panel, borders have been created for unviable zones. Height from the sea level and green cover have been used for creation of the eco sensitive zones. Green cover consists of the crops raised by the farmers as well as other trees and forests. Therefore the borders of the zone have been wrongly indicated.

It is important to note that the concept of ecologically sensitive zones is quite distinct from that of Wildlife Sanctuaries or National Park. As mentioned above the whole of Dahanu Taluka has been designated as ecologically sensitive and is being managed so as to promote environmental conservation hand in hand with sustainable development. So all forms of land uses may fall within ecologically sensitive zones. Furthermore, we had to work with data on a crude scale without access to details of Panchayat and watershed boundaries. Therefore we explicitly stated that our boundaries are tentative and only provisionally drawn on basis of taluk boundaries. The Panel has not prescribed rigid boundaries for Western Ghats, for Ecologically Sensitive Zones 1, 2 and 3 and given a set of inflexible restrictive prescriptions to be followed for various development initiatives in these zones. Quite to the contrary, WGEEP has stated that what is proposed are only provisional boundaries and provisional guidelines, both to serve as a basis of an informed deliberations through an inclusive process reaching down to all Gram Sabhas/ Ward Sabhas throughout the Western Ghats region. The report suggests that an excellent precedent exists whereby the Goa Government placed the database prepared by Goa Regional Plan 2021 before all Gram Sabhas for correction of any errors as well as suggestions. Additionally, the report does not only talk of regulation, it suggests promotional measures such as payments to farmers for sequestering carbon in the soil, or protection to sacred groves or pools or to wild life.

- 5) The expert panel has not used bio diversity index e.g. Shannon Weaver or Simpson Index for zoning. Had they been used, human settlements would have been excluded.

Vibhute has not understood the concept of ecologically sensitive zones, which can include human settlements as in case of existing ESZs like Dahanu taluka or Mahabaleshwar-Panchgani. Furthermore, he does not seem to understand the context in which alpha diversity indices he quotes are relevant. They will not exclude human settlements. Moreover, they are relevant for looking at individual communities and not at whole regions as we are doing. Incidentally, we not only understand long standing work on diversity indices, we have contributed to further development of these indices as is evident from the following two publications:

Ganeshiah, et al. Avalanche index: a new measure of biodiversity based on biological heterogeneity of the communities.

Pramod, Gadgil et al. On the hospitality of Western Ghats habitats for bird communities.

- 6) It has been mentioned in the report that due to the 9 X 9 km grid, it was not possible to distinguish among a lake or a river or a water-shed or an administrative head quarter of a taluka or a human settlement.

Certainly, as honest scientists, we have stated these limitations, clarified that what is proposed are only provisional boundaries to serve as a basis of an informed deliberations through an inclusive process reaching down to all Gram Sabhas/ Ward Sabhas throughout the Western Ghats region.

- 7) While preparing the report a taluka has been included in the Eco Sensitive Zone without considering the taluka or the village boundary fixed by the government.

As noted, the whole concept of ecologically sensitive zones started with the whole Dahanu taluka being declared one. Furthermore, we reiterate that WGEEP has clearly stated that what is proposed are only provisional boundaries to serve as a basis of an informed deliberations through an inclusive process reaching down to all Gram Sabhas / Ward Sabhas throughout the Western Ghats region.

- 8) As a result of this residential area has been included in the zone. This is quite dangerous.

As noted above the Government has already constituted whole Dahanu taluka, Matheran, and Mahabaleshwar-Panchgani with many residential areas as ecologically sensitive. Of course, they have to be managed with proper reference to the locality specific context as we emphasize in our report.

- 9) Construction of new dams in Eco Sensitive Zone 1 is prohibited in the report. If the Environment Ministry accepts this recommendation, then green and cheap hydraulic power generation stations cannot be constructed. Moreover,

expansion programme of the Koyna Hydraulic Power station will be blocked. The Central Government should rethink about this recommendation.

WGEEP proposals are being wrongly portrayed as "Conservation by Imposition" as if the Panel has prescribed rigid boundaries for Western Ghats, for Ecologically Sensitive Zones 1, 2 and 3 and given a set of inflexible restrictive prescriptions to be followed for various development initiatives in these zones. Quite to the contrary, WGEEP has clearly stated that what is proposed are only provisional boundaries and provisional guidelines, both to serve as a basis of informed deliberations through an inclusive process reaching down to all Gram Sabhas / Ward Sabhas throughout the Western Ghats region. The decisions arrived at through such a democratic process should then be taken up for implementation.

- 10) It has been mentioned in the report that existence of 4000 different kinds of plants, 350 types of ants, 330 types of butterflies, 174 types of flies, and 269 types of snails has been endangered. This information has not been verified.

The plant figures are based on two data sets:

- a) Database compiled by Ganeshiah and colleagues from over 120 floras, and reports published on Western Ghats, and incorporated in the Sasya Sahyadri database and the literature cited therein. Sasya Sahyadri has now become a globally used database for the plants of W Ghats.

- b) Field work led by Ganeshiah involving 7 groups of 4 members each for five years who scanned the entire W Ghats at a scale of 40 km² with a km transect in each of the grid. This means a total of $7 \times 4 \times 5 = 140$ man years.

The butterfly data comes from Gaonkar, H. Butterflies of Western Ghats, India including Sri Lanka: a biodiversity assessment of a threatened mountain system. Unpublished report submitted to CES, IISc and Zoological Museum Coopenhagen (Denmark) and Natural History Museum (London) vols I & II.

All available information on Western Ghats biodiversity has been summarized in the book by Ranjit Daniels co-authored with Jayshree Vencatesan: Western Ghats: biodiversity, people, conservation. This is the most up-to-date and authentic compilation available today. Daniels was intimately associated with the work of the Panel as is clearly indicated in the report.

No other global hotspot has been surveyed as intensively as Western Ghats and if one is looking for data on conservation it will be impossible to find better database. We can claim with confidence that several WGEEP members have contributed to this happy state of affairs.

- 11) All this information has been taken from Mr. Gunavardhane's book 'Toxy'. The panel has not verified if the information is correct or not. This is a most irresponsible allegation as the answer to points 10 and 12 makes abundantly clear.

- 12) It has been mentioned that there are 120 mammals in the Western Ghats. But no appendix giving their list has been given in the report and it has also not been mentioned if it includes domestic animals.

The list of 120 species of mammals was derived from the most authentic source available, Nameer P Ommer. Checklist of Indian Mammals, Published by the Kerala Forest Department and Zoo Outreach Organization, Coimbatore.

We certainly have plans to further strengthen the database, give all references etc. This proposal is still being processed.

- 13) The ground level reality has not been checked while preparing the report. The report has been prepared on the basis of casual meetings with the villagers in the Western Ghats.

This is another incredibly irresponsible allegation. All Panel members have huge field experience of several decades covering amongst ourselves the entire stretch. This can be seen from the hundreds of highly cited publications that anybody can access by going to the Google Scholar website.

- 14) There are different versions as to Eco Sensitive Zone should be made applicable to totally how many talukas. The map on the Page no. 24 of the report shows 35 talukas in the zone. But the table on Pages 93, 96 shows 28 talukas in the zone. Which out of these is correct?

Given the small scale, the overlap of Protected Areas with Taluk boundaries and difficulty of fitting in Taluk names, the maps cannot be interpreted properly on the scale included in the report. Of course there are larger scale maps for which these problems vanish, but they could not fit in the report. The information in the table of taluk-wise ESZ 1, 2, 3 assignment is correct.

- 15) It is said that Zero pollution system should be made applicable till 2016 and social audit should be carried out. This recommendation has been made in the case of the industry in Ratnagiri and Sindhudurga Zillas. No detailed information about the social audit has been provided.

Social audit has been made an integral part of MGNREGA programme and Andhra Pradesh has the most effective system in place as mentioned in the report.

- 16) The report has recommended preparation of a cumulative environment impact report. This is welcome. The panel does not seem to be aware of the fact that Central Environment Expert Committee calls for such a report from the project bearer.

The Panel asked the Ministry of Environment and Forests if any Cumulative Impact Assessments were available with them. None were forthcoming. Incidentally, several of the Panel members have been involved in a variety of EIAs over the years and are very well familiar with the system.

Some other related articles are available at the following links:

1. Follow-up Response to 'Western Ghats Ecology Expert Panel' Report - by Dr. Madhav Gadgil --} <http://wp.me/pzBjo-LM>
2. We must force the Govt for implementation of the Western Ghats Ecology Expert Panel (Dr. Madhav Gadgil committee) Report --} <http://wp.me/pzBjo-Lg>

MINUTES OF THE 59th MEETING OF EXPERT APPRAISAL COMMITTEE FOR RIVER VALLEY AND HYDRO POWER PROJECTS

The 59th Meeting of the Expert Appraisal Committee for River Valley and Hydro Power Projects (EAC) was held on 20th-21st July, 2012 in SCOPE Convention Centre, Opp. Jawaharlal Nehru Stadium, Lodhi Road, New Delhi. The meeting was chaired by Prof.J.K. Sharama for half a day on 20th July 2012 and for the remaining days by Shri Rakesh Nath. Dr. B.P. Das, Shri Bhattacharya and Prof Arun could not attend the meeting due to preoccupation. Dr. K.D. Joshi attended the meeting only for 20th July 2012. The list of EAC Members and Officials from various Projects who attended the meeting is enclosed at Annexure-1.

After welcoming the members, the following Agenda items were taken up for discussion-

20th July, 2012

1. Agenda Item No. 1: **Welcome by Chairman and Confirmation of Minutes of 58th Meeting held on 1st -2nd June, 2012.**

The minutes were confirmed with the following revision-

- (i) In item 2.1 -2.3, at page 5 point (i) may be replaced by "the same comments shall be applicable to all three projects".

2. Agenda Item No. 2: **Discussion on Environment Clearance to Gundia 200 MW Hydroelectric Power Project in Hassan and Dakshina Kannada Districts of Karnataka by M/s Karnataka Power Corporation Ltd. in view of recommendation of Western Ghats Ecology Expert Panel.**

In 58th Meeting of EAC held on 1st-2nd June, 2012, it was decided that Prof. J.K. Sharma, Dr. Nayar and Dr. Dhananjay Mohan shall meet and consolidate their views, which shall be presented in the next meeting. The views of them are summarized as below-

Dr. Dhananjai Mohan was of the view that although there has been a sincere effort by WGEEP to adopt a methodology which is objective and scientific but there are certain limitations in the same. The evaluation was fairly objective however, the assessment was relative and not absolute. The database used by WGEEP is incomplete and yet to incorporate considerations of habitat continuity. The grading on the basis of which the Ecologically Sensitive Areas (ESAs) have been classified also has some problems. In fact the panel itself felt that after the report is published, there could be further discussion, re-evaluation and revision of ESAs and 'more fine scale borders of the ESAs can be developed with local inputs from the forest managers and the stake holders before they are legally declared as ESAs'. The protocol and methodology provided for mapping ESAs is not final and requires further discussions. Thus the present exercise of identification of ESAs needs further refinement. Therefore, based on a data which is not final, the recommendation of WGEEP not to allow Gundia HEP seems unjustified. His specific comments on the five recommendations of WGEEP with respect to Gundia HEP are-

- (i) Even though the panel had been given a specific task of examining the Gundia HEP, it failed to generate good scientific facts to evaluate the impacts and thus its recommendations are not based on rigorous scientific data. The recommendation is too general and lacks in facts (statements like large scale land cover changes) and so cannot be commented upon.
- (ii) This recommendation may be put as an additional condition to the project proponent so that the temple town of Subramaniyam may not face water shortage. Rest of the recommendations is too general.
- (iii) MoEF has in its letter dated 07.01.2010 has already asked KPCL to avoid diversion of 2 ha of primary dense tropical rain forest for construction of road at Yettinahole by constructing a bridge at the turning point. KPCL has accepted the suggestion in its compliance report dated May 2010. Similarly possibility of shifting the tunnel access to the main underground powerhouse which according to the WGEEP report is located in one of the few remaining primary evergreen forest patches may be explored. (iv) Since, the classification criteria still need refinement as accepted in the WGEEP report, therefore, a decision on the basis of the ESZ classification in the report may not be reasonable at this stage.
- (iv) The final recommendation of not permitting the Gundia HEP in its entirety (3 stages and 2 phases) is thus not based on well researched facts and still uses general statements like 'loss of biodiversity and environment impacts would be significant' while much of the discussion in the report doesn't seem to be supporting it.

Prof. J.K. Sharma was also of the view that since Gundia HEP has been placed under ESZI which means that all the eight parameters considered for delineation of ESZs are either equal or more than the Protected Areas which is not consistent with the state of affairs with regard to forest health and biodiversity mentioned for Gundia Basin by WGEEP experts. There was no hydrologist in the Team, the conclusions about height of the dam, limits of power generations etc. seems more eco-centric. We need to have a trade off in the present scenario of growing demand for power. Dr. Sharma also felt that the specific recommendations for Gundia HEP by WGEEP is sweeping, vague and generalized and is not based on any exhaustive study in the Gundia forests. There are anomalies and contradictions in their own statements itself. The Team members and researchers visited the Project site from 29th-31st August 2010 but the biodiversity study of the area has been made by Sukumar and Shankar (2010) which itself is not complete therefore based on this study such strong recommendation seems unjustified. There are many statements in the study indicating that the forests in Gundia basin are not unique in terms of biodiversity but degraded, encroached and exploited and the biodiversity found therein is found elsewhere in the WG also. Endemic nature of species, amphibians and fishes are endemic to Western Ghats and not of Gundia basin alone. The statement on Page 69, Para 4, a) Plants, lines 7 – 12 clearly shows that there is nothing unique in Gundia basin in terms of plant diversity which is not found elsewhere in the Western Ghats and whatever is there it is of less biomass due to removal of trees. Moreover, the biodiversity part of the EIA of Gundia HEP was prepared by Dr. Sukumaran, who also happened to be the WGEEP member. Further, it is also seen from the report that the Gundia area is not harbored with unique species which are not found elsewhere in the Western Ghats. The area does not seem to be pristine or unique, but degraded and have species which are found elsewhere in the Western Ghats. The recommendations are based on secondary data and no ground truthing

has been carried out. Therefore, the WGEEP Report appears to be biased and not based on long-term scientific field study but based on arm chair research using secondary data on a GIS platform. Moreover, the Ministry has also not approved the WGEEP Report yet.

In his opinion, the EAC has already looked into these aspects and after a site visit, the Hongadahalla Dam component of Phase I of the Gundia Project was not approved which ultimately reduced the forest area to be affected from 1041 ha to 478.96 ha and submersion area from 733 ha to 191.92 ha. Therefore, adopting the sustainable development, the EAC had recommended environmental clearance for the project which should not be withdrawn. Instead, some more mitigating measures may be suggested, as given by Prof. Dhananjay and there should be strict monitoring of the environmental conditions.

Prof. T.S. Nayar felt that the Western Ghats biota is a highly precious capital to be protected for posterity at any cost as it is the result of millions of years of evolution. The report of the Western Ghats Ecology Expert Panel (WGEEP) is a welcome attempt in this direction endeavoring to assess the Western Ghats biota in its entirety. The report, at the same time, is not without flaws, the biggest being, while it makes sweeping suggestions it assumes the approach that the report is comprehensive and thorough, and hence the suggestions put forward are to be considered as the final endorsements. The idea brought forward through Ecologically Sensitive Zones 'ESZ 1-3' and Ecologically Sensitive Localities (ESL) are fine concepts but their fidelity with respect to the assigned values (Endemic species, IUCN listed mammal species, unique evergreen ecosystem, undisturbed forests, forest areas, elevations, slope, riparian vegetation) have not been investigated and proved. Action plans purely based on concepts which lack ground truthing, in spite of the fact that there are abundant chances for it, may find it difficult to take off. At least 25% of the designated ESZ1, 15% of ESZ2 and 10% of ESZ3 (% given arbitrarily with conservation value priorities) should at random be subjected to taxonomic and ecological investigations at least for two years and the result should be compared with appropriate assigned values so as to get scientific currency to the concept of ESZ as many of these zones still remain data deficient with respect to their biota. There are no conclusive evidences to prove that ESZ1 is the highest conservation value area, there can not have any scientific backing for the conclusion that Gundia enjoys the highest conservation value biota simply because Gundia is designated as an ESZ1 area. Gundia could be a high conservation value area but should be proved with supporting scientific evidences. WGEEP Chairman, along with two scientists (not in the panel) visited the site for 3 days followed by another visit with another person and a consultation meeting. It is clear that no judgment on biodiversity is possible within such a short duration. The basis of WGEEP's comprehension on the biodiversity of Gundia is from the report of Sukumar and Sanker (2010) because it heavily draws upon from this report. Precisely, as per the mandate, WGEEP has not specifically examined Gundia HEP but relied on already available report of Sukumar and Shanker, 2010. He observed that this report, although has certain flaws, provides highly valuable data on biodiversity of Gundia site when viewed in the light of the fact that it is the result of a mere two month study based on 16 days' field work. It is anybody's guess what would be the magnitude of its biodiversity if a thorough study was conducted for at least one year. The EIA conducted for Gundia HEP is also not too satisfactory and there are many discrepancies in the report. Lower groups of plants (Algae, Fungi, Lichens, Bryophytes and Pteridophytes) which could be abundant in forests like Gundia are sparingly reported. Most of the planktons are identified only up to genus level. The proponents have wrongly conceived what in-situ conservation is. Many of the conservation management strategies mentioned sound like very casual statements, not supported by good methodologies. In his opinion also Gundia site appears to be a good evergreen tropical forest

with high concentration of endemic plant and animal species but they occur elsewhere in the Western Ghats except two species of amphibians and one species of insect which are confined to Gundia. There could be a possibility of occurrence of some unreported species in the EIA study for the project, therefore; a detailed floristic and faunal survey of the area is required. It also seems the forests have high regeneration potential in degraded areas if left alone as degradation is the result of illegal logging and encroachment. He also felt that ESZ 1-3 categorisation provides only predicted or assumptive value without any scientific backing.

The Committee deliberated on the observations of the three experts and came to the conclusion that both the reports seem incomplete but at the same time, the revised EIA/EMP report of Gundia provided a good amount of information for the Committee to come to a conclusion. It is evident that there is no endemic species specifically of Gundia HEP region and there is no any species for which mitigation methods are not available. The damage due to submergence of flora and fauna of the area is mitigable. Moreover, the Committee had looked into these aspects at the time of site visit and had suggested some environmental measures which have been implemented by sacrificing one of the dams by the PP. In view of this, the Committee felt that there is no enough data and reason to go against the recommendations of EAC for environmental clearance for the Project hence reiterated its earlier recommendation with the following additional environmental conditions-

- (i) Possibility of shifting the tunnel access to the main underground powerhouse, which is located in one of the few remaining primary evergreen forest patches, may be explored. The PP may also ensure that the temple town of Subramaniyam may not face water shortage owing to construction of the dams.
- (ii) One more floristic and faunal survey covering all the different seasons may be carried out and submitted to the Ministry, before starting construction of the project. Such studies should cover all aspects of taxonomy and ecology, especially all the species present, types of their interactions, habitat specificity, habitat uses, gene flow systems etc. of organisms by specialists in respective fields. As two species of amphibians exclusively from Gundia region are reported which are new to the science, an amphibian specialist should be included in the survey team. Specialist groups may suggest after the study that fragmentation due to dam construction does not result in species loss. Each suggested management plan should be supported by sound methodology. Proponents may have to understand that ex situ conservation of animals is a huge task unlike it is projected in the EMP.
- (iii) Besides the conventional conservation measures, possibilities of modern methods like micro reserves promoting natural regeneration and restoration of habitats, establishing lobster pots, fencing of habitats, biotope management, establishment of ecological corridors etc. may be explored and incorporated in management plans to conserve affected groups of plants and animals or population of individual species.
- (iv) The Ministry, after reviewing the survey report, shall impose more mitigating measures, if required. The Project Proponent shall abide by the decision of the Ministry at that time.

The Committee felt that the Western Ghats are now are being included in the World Heritage List due to its unique biota and already about 1,821 dam structures are existing in

the Northern Western Ghats, it is important to study the carrying capacity of the Western Ghats to accommodate more dams to prevent any species loss. The Ministry may undertake the same at the earliest.

3. Agenda Item No. 3: Consideration of Project Proposals for Scoping and Environment Clearance

The following project proposals were considered-

3.1 Inter-Linking of Tamiraparani, Karumeniyar and Nambiyar Rivers in Tirunelveli and Thoothukudi Districts of Tamil Nadu by M/s. Public Works Department, Water Resources Organisation, Government of Tamil Nadu- Reconsideration for TORs.

The project was earlier considered in 53rd Meeting of EAC held on 11th-12th November, 2011 but could not be discussed at length as the Committee members did not receive hard copy of the documents. However, based on the presentation made by the Project Proponent, the Committee had asked for certain additional information which was submitted by them.

Shri S. S. Ramasubbu, Member of Parliament from Tirunelveli, Tamil Nadu apprised the Committee regarding the importance of the project for the State of Tamil Nadu. He informed that the agricultural development in Tamil Nadu mainly depends on the surface and ground water irrigation. But the State has almost utilized its surface and ground water resources hence future expansion of irrigation and agriculture in Tamil Nadu depends on linking of rivers and tributaries and by utilizing the surplus unused flood water which flows into the sea. The present scheme aims at providing irrigation to the drought prone area of Sathankulam and Thisaiyanvilai Districts of Tamil Nadu through diversion of surplus flood from the perennial Tamiraparani River to the ephemeral Karumeniyar and Nambiyar rivers. This is the first interlinking of rivers project in Tamil Nadu and the project is very important for development of his constituency. The Committee appreciated his presence and interest in the project.

Shri Sampat Kumar, Chief Engineer along with his team presented that for utilizing the surplus flood water of river Tamiraparani, the Government of Tamil Nadu had sanctioned Rs. 369 Crores for construction of a flood carrier canal from Kannadian Channel to the drought prone area of Sathankulam, Thisaiyanvilai by interlinking Tamiraparani, Karumeniyar and Nambiyar Rivers in Tirunelveli and Thoothukudi Districts of Tamil Nadu. The project area covers 4 Talukas in Tirunelveli District namely Ambasamudram,

List of EAC Members and Project Proponents who attended 59th Meeting of Expert Appraisal Committee for River Valley & Hydroelectric Power Projects held on 1st-2nd June, 2012 in New Delhi

Members of EAC

1. Shri Rakesh Nath- Chairman
2. Dr. Dhananjai Mohan
3. Prof. S.K. Mazumdar
4. Dr. (Mrs.) Maitrayee Choudhary
5. Dr. K.D. Joshi
6. Prof. T.S. Nayar
7. Prof. J.K. Sharma
8. Shri G.L. Bansal
9. Dr. Praveen Mathur
10. Ms. Sanchita Jindal, Director, MoEF
11. Dr. P.V. Subba Rao, MoEF

Inter-Linking of Tambiraparani, Karumeniyar and Nambiyar Rivers, Government of Tamil Nadu

1. Shri.M.Sampath Kumar, Chief Engineer, PWD Water Resources Organisation, Madurai.
2. Shri.S.P. Pandian, Superintending Engineer, PWD Water Resources Organisation, Madurai.
3. Shri. M.R. Mohan, Deputy Engineer, PWD Water Resources Organisation, Madurai.
4. Er. S. Subhash, Executive Engineer PWD, Madurai.
5. Shri S. Antony Anbarasu, Executive Engineer, PWD, Chennai.
6. Shri A.S. Nagarajan, Assistant Executive Engineer, PWD.
7. Shri J. Murugan Assistant Engineer, PWD.
8. Shri K. Karthikeyan, Associate Engineer, PWD.

Ghogra Minor Irrigation Project by Government of Madhya Pradesh

1. Shri R. Julania, IAS, Principal Secretary, D/o WR.
2. Shri M.G. Chowbey, Engineer-in-Charge
3. Shri S.K. Nigam, Senior Engineer
4. Shri Avinash Kulkarni, Executive Engineer
5. Shri Deepak Satpate, Executive Engineer
6. Shri P.K. Tripathi, SOO
7. Shri B.K. Jain, SOO
8. Ms Devyani, Assistant Engineer

F. No. 28-1/2012-NRM-I.
GOVERNMENT OF INDIA
Ministry of Agriculture
Department of Agriculture & Cooperation
(Natural Resource Management Division)

Shastri Bhawan, New Delhi.
Dated: 21st September, 2012

Sub:- Report of "Western Ghats Ecology Expert Panel (WGEEP)" Part-II of Ministry of Environment & Forests- comments on the measures suggested for improvement in agriculture sector- reg.

Please refer to d.o.letter No.1/1/2010-RE-ESZ dated 04.01.2012 and this Ministry's letter of even number dated 24.01.2012 on the subject mentioned above

2. Department of Agriculture & Cooperation(DAC) has to consult States of the region before finalizing its views which will be communicated to High Level Working Group(HLWG) in due course.
3. Comments of DAC transmitted earlier may, therefore, be treated as interim in nature.
4. This issues with the approval of Secretary (A&C).


(C.M.Pandey)
Additional Commissioner(NRM)
Telephone No.011-23383772

Shri Ajay Tyagi,
Joint Secretary,
Ministry of Environment & Forests
Room No.417, 4th Floor,
CGO Complex, Lodhi Road,
New Delhi

O/o J.S.(AT)E&F
Dy. No. 28/9/12
Date... 28.9.12

28(AC) - RE 28/9/12

27/9

No. 28-1/2012-NRM-I
Ministry of Agriculture
Department of Agriculture & Cooperation
(Natural Resource Management Division)

7 27/09/12

102, B-Wing, Shastri Bhawan New Delhi
Dated: 04.09.2012

Subject: Report of Western Ghats Ecology Expert Panel: Observation of
Department of Agriculture & Cooperation, Ministry of Agriculture

Reference is invited to D.O. No. 1/1/2010-RE-ESZ dated
31.8.2012, on above subject.

2. Copy of the comments/observations of Department of Agriculture &
Cooperation (DAC), Ministry of Agriculture sent earlier vide letter of even
No. dated 24.01.2012 are enclosed for kind information.

C.M. Pandey
27/9/12

(C.M. Pandey)
Additional Commissioner (NRM)

Encl: As above

✓ Shri Ajay Tyagi,
Joint Secretary,
Ministry of Environment & Forests,
Room No. 417, 4th Floor,
CGO Complex, Lodhi Road,
New Delhi-110003

Dr. Anil Kumar
to (RE)
18/9/12

27/09/12
27/09/12

Report of Western Ghats Ecology Expert Panel: Observations of Department of Agriculture & Cooperation, Ministry of Agriculture

S.I.	Measures for mitigation/ improvement	Observations of Department of Agriculture & Cooperation
2.2 Agriculture Sector		
1	Landscape planning in select regions / locations.	In hilly and undulated terrain, land development like terracing, leveling, protection wall etc. are supported under watershed programmes of Department of Agriculture & Cooperation (DAC) & Department of Land Resources. DAC supports need based land development activities /interventions for increasing production and productivity. However, Landscape planning in select regions / locations need to be taken up in holistic manner based on watershed approach to make it hydrologically sustainable.
2	Shift from monoculture to polyculture/ mixed cropping system.	Integrated Farming System including mixed farming system is being supported under newly launched scheme of Rainfed Area Development Programme (RADP) as a sub scheme of Rashtriya Krishi Vikas Yojana (RKVY).
3	Encourage/ Support ecological soil conservation measures in the Western Ghats.	Under watershed programmes, low cost agronomic / vegetative conservation measures are preferred to make it sustainable. However, in locations which are witnessing adverse hydrological conditions, viz higher volume & rate of flow of run-off etc., mechanical structures can not be completely avoided.
4	Discontinue the use of weedicides.	DAC in all its crop development programmes, encourages mechanical sowing, line transplanting, etc. which are conducive to mechanical weeding. DAC through its mechanization programme, supports farmers for procurement of different type of power and hand operated weeders to discourage use of weedicides / herbicides.
5	Phase out of the use of insecticides and fungicides.	DAC is also promoting Integrating Pest Management (IPM) emphasizing alternative tools for pest management such as cultural, physical, mechanical methods, use of bio-control agent and judicious and need based used of pesticides for control of pests.

S.I.	Measures for mitigation/ improvement	Observations of Department of Agriculture & Cooperation
6	Encourage use of organic manures.	DAC is promoting soil test - based, balanced and judicious use of chemical fertilizers in conjunction with bio-fertilizers and locally available organic measures such as farm yard manure, vermi-compost and green manure, to maintain soil health and productivity. A centrally sponsored scheme namely "National Project on Management of Soil Health and Fertility" is already in operation throughout the country. Scheme includes (a) strengthening of soil testing facilities (b) training and demonstrations on balanced use of fertilizers (c) promoting use of Integrated Nutrient Management (INM); and (d) strengthening of fertilizer testing facilities
7	Financial support to organic farmers.	DAC is implementing a scheme namely; 'National Project on Promotion of Organic Farming' (NPOF). This scheme lays stress on technical capacity building, information generation and promotion of organic farming through setting up of fruits / vegetables waste composts units and bio-fertilizers/bio-pesticides production units. Financial assistance is being provided for establishment of various organic inputs production units under Capital Investment Subsidy Scheme (CISS) to minimize gap between demand and production of organic inputs like bio-fertilizers, bio-pesticides and fruit and vegetable waste compost.
8	Selection of crops and varieties.	DAC is already implementing a programme 'Development and strengthening of infrastructure facilities for production and distribution of quality seeds across the country. This programme is also encouraging promotion of Hybrid seeds. It also encourages setting up of seed villages and boosting production of quality seeds through private sectors for enhancing food production.
9	Agro-biodiversity conservation and crop improvement.	Indian Council of Agriculture Research (ICAR) and Agricultural Universities are conducting research through plant breeding for improvement of crops. These institutions

S.L.	Measures for mitigation/improvement	Observations of Department of Agriculture & Cooperation
		take care of development and improvement of the traditional varieties suitable for each locality while performing their research through plant breeding programmes.
10	Make Western Ghats free of Genetically Modified (GM) crops, trees and animals.	Under scheme of National Horticulture Mission (NHM), activities are taken up for promotion of protected cultivation for higher production per unit of area through desirable diversification. However, it does not anticipate promotion of any GM crop.
11	Awareness building.	DAC is promoting awareness programme through Agricultural Technology Management Agency (ATMA) at District level to operationalize the extension reforms in all sectors of agriculture. ATMA has active participation of farmers/ farmer group, NGOs, Krishi Vigyan Kendra (KVKs), Panchayat/Raj institutions (PRIs) and other stakeholders operating at District level and below.
12	Educating children about organic and ecological farming and their role in conserving the biodiversity of the Western Ghats.	Programme of National Project on Organic Farming (NPOF) lays stress on technical capacity building and Human Resource Development through certified courses and distribution of literature, exhibitions, radio talks and television programmes.
13	Forest corridors.	Relates to Forest Department
14	Forest patches within and along the streams in the plantation.	Relates to Forest Department
15	Community forestry.	DAC supports community forestry which will help in availability of fodder, fuel wood and biological residue for manure preparation. Agro forestry and afforestation are eligible components under watershed programmes to promote such activities.
16	Wildlife problems.	Preventing crop damage from wild life may not be fully addressed through compensation or discouraging farmers growing crops that attract wild animals. Insurance provisions may be examined to protect loss of farmers through appropriate policy provisions.

S.I.	Measures for mitigation/ improvement	Observations of Department of Agriculture & Cooperation
		Wherever feasible alternate crops which are acceptable to farmers and do not attract animals may be supported under agriculture programmes/ schemes.
17	Marketing.	<p>DAC is already on path of agricultural marketing reforms and has been vigorously pursuing States/ UTs to promote innovative marketing channels with a view to offer remunerative price to farmers and to reduce marketing cost by providing provision of direct marketing/ purchase of produce directly from growers.</p> <p>Development of marketing for organic produce in India is in nascent stage, hence, it requires promoting formation of Farmers/ Producers Group or cooperatives to collect and add primary value to produce to make quantity and quality-wise marketable. Government may provide necessary assistance for it.</p>
18	Tribal farming.	As per recent directives of government, Scheduled Cast Sub-Plan(SCSP)/ Tribal Sub-Plan (TSP) component has been envisaged in all development programmes of DAC to protect of SC/ tribal farmers.
19	Research.	The ICAR Research Complex, Goa established in 1989 is a multidisciplinary Institute mandated to address different issues such as resource conservation, watershed approach for water conservation, conservation of biodiversity, integrated farming system approach incorporating horticulture, animal husbandry and fishery for maximum utilization of available resources, climate change impact and mitigation strategies for agriculture, employment generation and livelihood improvement, value addition and post harvest processing, agro tourism for Western Ghat agricultural system. ICAR has developed technologies namely bio engineering measures in cashew nut/coconut based agro-forestry system for rehabilitation

S.I.	Measures for mitigation/ improvement	Observations of Department of Agriculture & Cooperation
		of degraded lands in Western Ghat, organic rice cultivation, bio inoculants based INM and IPM packages, integrated farming system encompassing rice-fish-duckery-poultry-livestock- horticulture (including floriculture, mushroom cultivation & apiculture) for increasing profitability and livelihood generation of this region. Benefits of successful research are being popularized among the farmers of this region through IVLP programme, KVKs, State extension agencies etc. ICAR is also conducting Front Line Demonstrations (FLDs) on relevant technologies, imparting trainings to farmers, Subject Matter Specialists of Krishi Vigyan Kendra (KVK), State • Line Departments/NGOs etc.: publishing popular articles and technical bulletins in local languages and organizing regional workshops.

Note: Recommendations at para 2.3 & 2.4 of Report of Western Ghats Ecology Expert Panel are converted to Department of Animal Husbandry, Dairy and Fisheries

No.13-6/2012-SO-V
Government of India
Ministry of Agriculture
Department of Agriculture & Cooperation

Kirti Bhawan, New Delhi
Dated 06.07.2012

Subject: Western Ghats Ecology Expert Panel constituted by Ministry of Environment & Forests - Report - Make the Western Ghats free of Genetically Modified crops, tree and animals

CICR Nagpur has been declared as referral laboratory under the Seed Rules, 1968 to determine the presence/absence of Bt gene in all the events of Bt genes. It is premier institute known for development of cotton hybrid/varieties including Bt cotton. Comments were sought from CICR and views obtained from them are reproduced below:

The extract of Report of the Western Ghats Ecology Expert Panel Part II page 41 :

"Make the Western Ghats free of Genetically Modified crops, trees and animals: The biodiversity of the Western Ghats, one of the biodiversity hot spots of the world, although not yet fully documented, has been the source of original genes responsible for the present day cultivars. It is therefore vital to conserve them and guard them from genetic contamination from unnatural sources such as GM crops and GM trees. Since genetic contamination of local varieties from GM crops is an irremediable fact, no attempt should be allowed to introduce GM crops in the Western Ghats. Not even open field trials should be allowed. However, Bt cotton, the first genetically modified crop in the country, is being cultivated in some parts of the Western Ghats. Immediate action is called for to stop this practice and to ensure that seeds should be supplied with non-Bt cotton seeds. They should also be encouraged to go the organic way and a separate marketing channel opened up for cotton farmers in the Western Ghats. Attempts are being made to introduce GM trees such as GM rubber. This should never be allowed."

1. There is no risk to 'Western ghats biodiversity' due to the cultivation of the current GM Bt cotton hybrids.

2. The native biodiversity of cotton in India is represented only in the Desi-cotton species which have evolutionary origins in India and are known to have been cultivated in the country for 7000 years. Since the Desi cotton species *Gossypium arboreum* and *Gossypium herbaceum* have native origins, there is high level biodiversity of the Desi species in India. There is NO POSSIBILITY, whatsoever, of any of the native India Desi cotton species *Gossypium arboreum* and *Gossypium herbaceum* species getting genetically contaminated with GM Bt-cotton so as to threaten the extant biodiversity.

B Ministry of Agriculture

4. In the current Bt-cotton hybrids era of the American cotton species *Gossypium hirsutum*, the American cotton species *Gossypium hirsutum* was introduced into India in 1790 by the British East India Company and does not have much of naturally evolved biodiversity in the country. The seeds of all *Gossypium hirsutum* varieties that were developed in the country represent biodiversity of the American cotton species *Gossypium hirsutum* available in India. These are conserved and preserved in their pure form at NBPGR (National Bureau for Plant Genetic Resources) and CIOR (Central Institute for Cotton Research) and can be retrieved as and when required.

5. The species *Gossypium hirsutum* is a tetraploid with chromosome number of $4n=52$, and is genetically incompatible with the Desi species which are diploids with chromosome number of $2n=26$. The diploid species are not crossable with tetraploid species and thus reproductively incompatible with the tetraploid species *Gossypium hirsutum*.

6. Further, there is no record of occurrence of any tetraploid wild cotton species in India or any other Malvaceous species in India or more specifically in the Western ghats, that are possible or even remotely likely to be contaminated with the American cotton species *Gossypium hirsutum* or Bt cotton. Clearly, there is no reason whatsoever to enforce a restriction on cultivation of Bt cotton in the Western ghats, especially since there is no perceived threat to any form of biodiversity of tetraploid cotton species or related tetraploid wild species present in the Western ghats. Therefore cultivation of Bt cotton (tetraploid) in Western ghats does not threaten any biodiversity since the tetraploid Bt cotton cannot contaminate the diploid Desi cotton species. A blanket ban on Bt cotton in Western ghats with an unreasonable pretext of 'Threat to biodiversity' is not backed by scientific principles or research and thus is inappropriate. It is suggested that any future GM crop proposals may be examined case-by-case depending on the possible impact of the proposed specific GM crop species on biodiversity of the Western ghats.

This is issued with the approval of Competent Authority.


(Shri. Shri. Shri.)
Director (Secy)

Dr. Anil K. Singh, Deputy Director
Ministry of Environment & Forests,
111 D-Block, Govt. of India
Room No. 535, P. V. Narayana Murthy
Bldg Complex, Lodi Road
New Delhi-110003

F.No.28-1/2012/NRM-I
 Government of India
 Ministry of Agriculture
 Department of Agriculture & Cooperation
 (Natural Resource Management Division)

Shastri Bhawan, New Delhi.

Dated: 8th April, 2013

Sub: Revised comments of DAC on recommendation of Report of Western Ghats Ecology Expert Panel (WGEEP) - regarding.

Reference is invited to D.O. letter No.1/1/2010-RE (ESZ) dated 31.08.2012 of Dr. K. Kasturirangan, Member, Planning Commission, New Delhi addressed to Secretary (A&C) and this Departments' letter of even number dated 24.01.2012 and subsequent letter dated 21.09.2012 on the above subject.

2. As per the Seventh Schedule of the Constitution, all matters related to land and agriculture comes under the purview of State Governments, therefore, it is for the State Governments of Western Ghats Region (WGR) to accept or reject recommendations of Western Ghats Ecology Expert Panel (WGEEP) in so far as they relate to shift from monoculture to polyculture / mixed cropping system, discontinuation of the use of weedicides, phasing out the use of insecticides and fungicides, agro-biodiversity conservation, crop improvement and making Western Ghats free of Genetically Modified (GM) crops, etc.

3. In view of above, Ministry of Agriculture, Department of Agriculture & Cooperation (DAC) circulated extract of recommendations of report of WGEEP pertaining to agriculture sector to all States of WGR for comments. Based on the inputs received from all State Governments of WGR, revised comments on each recommendations relating to agriculture sector are as under:-

O/o J.S. (AT) E&F
 Dy. No. 1/1/12/159
 Date: 10/4/13

DD (CAL)

 10/4/13

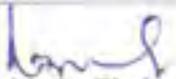
Recommendation	Revised comments of DAC
Landscape planning in select regions / locations.	Acceptable. Process of soil erosion and its formation are natural processes occurring simultaneously to maintain equilibrium in the natural eco-system. Landscape planning & its management can be achieved through integration of soil & water conservation measures, which are proven to be effective in prevention of soil erosion, land degradation and conserving natural ecology of the areas. Therefore, need based, site specific, hydrologically sustainable measures for ensuring sustainable foodgrain production should be adopted. In hilly and undulated terrains, interventions like terracing, land leveling, protection wall etc. are required wherever loose boulder structures with agronomic practices are not sustainable.
Shift from monoculture to polyculture/ mixed cropping systems.	Acceptable in so far as promotion of practices for shifting from monoculture crops to mixed cropping systems, which depend on soil type, soil fertility, topography of the area, availability of critical inputs and economic return of farm produce are concerned. Polyculture/ mixed cropping systems lead to enhancing livelihood security and increasing farm income and are accordingly supported. However, such

	shifts should not be made mandatory but should be promoted through a system of incentives, dissemination of improved practices & establishment of requisite infrastructure.
Encourage/ Support ecological soil conservation measures in the Western Ghats.	Acceptable. Vegetative soil and water conservation measures like, loose boulder structures with agronomical practices are insufficient in high runoff areas, therefore, stone pitching, construction of waste weirs, nala stabilization structures, drop-spill ways, stone walls will have to be constructed at vulnerable locations.
Discontinue the use of weedicides.	Discontinuation of use of weedicides in entire WGR in single phase may not be possible keeping in view the diversity of weeds. Effective, safe and environmentally sound methods as alternative to chemical weedicides need to be encouraged, so that use of weedicides is minimized.
Phase out of the use of insecticides and fungicides.	Phasing out of the use of insecticides and fungicides may not be possible as this depends upon the efficacy of other measures relating to pest control and farmer's choice. However, Integrated Pest Management (IPM) will have to be encouraged and technical capacity building, information generation and promotion of organic farming, setting up of fruits/ vegetables waste compost units and bio-fertilizers/bio-pesticides production units will have to be promoted to minimize use of insecticides and fungicides.
Encourage use of organic manures	It would not be practicable to phase out use of Chemical fertilizers. However, farmers are to be encouraged for balanced and judicious use of chemical fertilizers in conjunction with bio-fertilizers, promoting locally available organic matters such as farm yard manure, vermicompost and green manure etc. Supplementary use of chemical fertilizers based on soil test will have to be continued, as only organic farming may not be sufficient to meet increasing demand of foodgrains.
Financial support to organic farmers.	Acceptable. States are providing financial support to minimize gap between demand and production of organic inputs like bio-fertilizers, bio-pesticides and fruit & vegetable waste compost etc.
Selection of crops and varieties.	Acceptable. States are encouraging promotion of suitable seeds through ongoing schemes for production and distribution of quality seeds, besides, encouraging setting up of seed villages and boosting production of quality seeds through private sector for enhancing food production so that farmer will have a choice to adopt low input and high yielding varieties.
Agro-biodiversity conservation and crop improvement	Acceptable. Indian Council of Agriculture Research (ICAR) and State Agricultural Universities are conducting research in the area of plant breeding for improvement of crop production. These institutions are also taking care of development and improvement of traditional varieties suitable for each Agro-Climate Zone (ACZ). <i>Adoption of High</i>

	<i>Yielding Crop/Food Crop Varieties cannot be totally ignored to meet the ever increasing demand of foodgrains of ever increasing population. Promotion of drought resistant low input and less water & fertilizers requiring indigenous/local variety suitable to ACZ along with conservation and promotion of resource efficient technologies is the need of the hour.</i>
Make the Western Ghats free of Genetically Modified (GM) crops, trees and animals.	Not acceptable. Use of bio technology for the development of plant, animal and fish varieties that are climate resilient, resistance to biotic and a-biotic stresses and heat resistance is necessary for food security. Use of Genetically Modified (GM), Bt-cotton hybrid cannot be discontinued, as this is being cultivated mainly in Gujarat and Maharashtra States of Western Ghats Region and its productivity is many fold higher as compared to Desi-cotton. Besides, Bt cotton cultivation does not require much use of insecticides/pesticides and does not threaten any biodiversity since the tetraploid Bt cotton cannot contaminate diploid Desi cotton species.
Awareness building.	Acceptable. State Governments of WGR will have to undertake special awareness building activities, training and educating programmes by organizing Krishi Mahotsavs and other extension activities for educating the farmers regarding residual impact of use of high quantity of insecticides and pesticides and its impact on ecology of the region and would be motivated for minimizing such uses.
Educating children about organic and ecological farming and their role in conserving the biodiversity of the Western Ghats.	DAC supports this view.
Forest corridors.	Relates to Forest Department
Forest patches within and along the streams in the plantation.	Relates to Forest Department
Community forestry.	Community forestry is supported as long as it does not encroach upon existing agricultural land and reduces agricultural production & productivity.
Wildlife problems.	Preventing crop damage from wild animals may not be able to be fully addressed through compensation or discouraging farmers from growing crops that attract wild animals. States may explore suitable alternate crops acceptable to farmers that do not attract animals. For protection of crop/plantation, wherever possible physical barriers i.e. stone boulder wall, cattle proof trench, Solar Fencing (delivers a mild but effective electric shock to animals that may happen to come into contact with it) need

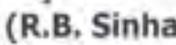
	to be encouraged. Solar Fencing has been tested as pilot project in Maharashtra and has proved to be a boon for farmers troubled by heavy crop damages due to intrusion of herbivores from forest.
Marketing.	Acceptable. States will have to take steps for ensuring agricultural marketing reforms to promote innovative marketing channels to offer remunerative prices to farmers, to reduce marketing costs by allowing direct marketing/ purchase of produce from growers. Promotion of formation of Farmers/ Producers Group or Cooperatives will be encouraged to collect and add primary value to produce quantity and quality-wise marketable. Model APMC Act has been formulated and circulated to the all the States including the States of WGR for adoption.
Tribal farming.	Acceptable, Government has launched a scheme for promotion of Nutri-Cereals under RKVY which is to be implemented in districts identified to be suffering from mal-nutrition several of which are in the tribal dominated areas of the country.
Research.	Acceptable. ICAR, Research Complex, Goa is mandated to undertake research issues such as resource conservation, watershed approach for water conservation, conservation of biodiversity, integrated farming system approach incorporating horticulture, animal husbandry and fishery, climate change impact and mitigation strategies for agriculture and agro tourism for Western Ghats agricultural system. Institute has developed various site specific technologies including integrated farming system encompassing rice-fish-duckery-poultry-livestock for increasing profitability and livelihood generation of this region. Benefits of successful research are being popularized among the farmers by ICAR and State extension agencies etc.

4. This issues with approval of Secretary (A&C).


(R.B. Sinha)
Joint Secretary (NRM)

✓ Shri Ajay Tyagi,
Joint Secretary,
Ministry of Environment & Forests,
Room No.417, 4th Floor,
CGO Complex, Lodi Road,
New Delhi

Copy for kind information to Dr.K. Kasturirangan, Member, Planning Commission, Yojana Bhawan, New Delhi with reference to d.o. letter No.1/1/2010-RE(ESZ), dated 31st August, 2012 addressed to Secretary (A&C).


(R.B. Sinha)
Joint Secretary (NRM)

F. No.- 3/1010/2012-Plant.Coord
Government of India
Ministry of Commerce & Industry
Department of Commerce
[Plantation Division]

New Delhi, Dated: 17th September, 2012.

OFFICE MEMORANDUM

Subject:- Report of Western Ghats Ecology Expert Panel (WGEEP) headed by Prof. Madhav Gadgil- Comments thereon regarding.

The undersigned is directed to refer to above-mentioned subject and to state that in connection with the oral evidence of the representatives of the Department of Commerce before the Parliamentary Standing Committee on Commerce held on 18.7.2012, the Committee desired the reactions of this Department on the report of Western Ghats Ecology Expert Panel (WGEEP). The Committee further desired the impact on coffee cultivation and plantations in the Western Ghats if the recommendations of the report are adopted. Accordingly, it was decided to examine the recommendations contained in the report of the WGEEP in consultations with the Commodity Boards, viz. Tea Board, Coffee Board, Rubber Board & Spices Board and comments were sought from the Boards on the recommendations contained in the report.

2. It is mentioned that plantations are major economic activity in the Western Ghats and there are livelihood issues for those connected with them historically, apart from issues of production and productivity of the plantation crops. The WGEEP has made far-reaching recommendations that will impact large number of people and it is noticed that Commodity Boards were not invited for stakeholder consultations that are stated to have taken place. The Boards have submitted their

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views on the recommendations contained in the report, which are, in brief, as under: -

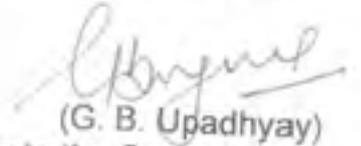
- a. The Boards were not consulted by the Panel although the Report mentions that the stakeholder consultations were done.
- b. Among the recommendations on various sectors, the recommendations on Agriculture sector will have direct impact on the plantation sector crops in the Western Ghats region.
- c. Practicing organic farming over the entire area and phasing out all chemical fertilizers, pesticides, fungicides would make plantation crops unviable as there will be substantial decline in productivity of plantations due to depleted nutrient status of soil and likely flare-up of major pests. Certain use of chemicals (fertilizers, agricultural lime, Bordeaux mixture etc) within the recommended levels is necessary to maintain the soil fertility, sustain the growth of plants and to control the pests and diseases.
- d. Coffee is cultivated with a good cover of overhead shade comprising of mostly native trees. The shade grown coffee agro-forests contribute significantly towards ecosystem services like bio-diversity conservation, carbon sequestration, rain water harvesting etc.
- e. Agro-forestry reduces the burden on natural forests for fuel wood, timber and provides fruits & medicinal plants and other livelihood options of the local population.
- f. Adoption of integrated sustainable cultivation of coffee has proved successful for growing coffee commercially and these have been accepted by various international eco-certification programmes like Rainforest Alliance, Bird friendly coffee (Smithsonian Migratory Bird Centre), UTZs Certified etc.
- g. More than 70% Of Indian coffee is being exported to countries including USA, Europe, Japan, Middle East, Gulf and Russia, where stringent measures are already in place as regards use of hazardous and other

chemicals. Unless there is a proven biological insecticides to control the major pest and diseases on coffee, phasing out of fungicides and pesticides will render the coffee cultivation unviable and unproductive.

- h. Coffee cultivation in the Western Ghats is not going to affect the biodiversity, flora and fauna of the region or is polluting the environment as feared in the Report. Coffee cultivation is an eco-friendly agricultural activity giving livelihood for nearly 2,82,000 coffee farmers and their families apart from providing employment opportunity for nearly one million workers directly and indirectly.
- i. Tropical evergreen forests of Western Ghats are the place of origin of spices like Cardamom (small) and black pepper as it is congenial for cultivation of these spices particularly. Gambodge and Kokum are spices, which are natural elements of these forests. Nutmeg and clove are also cultivated as intercrop in Western Ghats.
- j. The story of cardamom had a change from late 1990s after introduction of a high yielding variety called 'Njallani', which responds well to inputs especially chemical fertilizers, irrigation and pesticides applied at regular intervals. If the Report is implemented, cardamom cannot be cultivated in the present intensive way in the Western Ghats, especially in Kerala, where the variety cultivated is Njallani. If the old traditional varieties are brought back, we will lose the international market share and we cannot compete with Guatemala cardamom.
- k. It is also likely that the farmers may abandon cardamom cultivation which might lead to tree felling/ deforestation.
- l. Western Ghats accounts for 80% of pepper produced in India. If the Report is accepted, pepper cultivation has to be brought under organic system and there would be no reliable organic method to control foot rot disease.

- m. In short, if the recommendations of Gadgil Committee are accepted, spices indigenous to India like cardamom, pepper and some of the tree spices might suffer heavily, which will adversely affect our spices trade.
- n. Rubber Board is of the view that the report is highly one-sided. It talks only about the ecology of the region and does not bother to consider the people living there. There is no concern in the Report on the livelihoods of millions of small and marginal agriculturists living in these ecologically sensitive zones of the country. These are concerns that are as important as the ecological concerns, but they go poorly addressed in the Report.
- o. Going 100% organic may not be logical, and it may be impractical and dangerous. The volume of organic matter to replace chemical fertilizers in the region if 100% of the plant nutrients should come from organic sources alone will be enormous and inaccessible.
- p. Natural rubber is a strategic industrial raw material. The demand for NR in India is projected to grow fast in the foreseeable future and there is an increasing scarcity for NR world over. If India does not produce enough NR, the country will be left with no option but to import this vital industrial raw material at exorbitant prices, if at all this is available elsewhere.
- q. Further, a decline in productivity on account of not using chemical fertilizers would render Indian rubber less competitive in the international market. It may also be noted that NR produced with 100% organic materials will not attract any price premium, as it is an industrial raw material.
- r. Similarly, the recommendations about GM, no cultivation beyond certain slopes etc are also one-sided and not logical. There is considerable amount of research done on how NR cultivation has helped to prevent continued degradation of the ecosystem and improve economic development in the region.

- s. The region's economy is largely dependant on the plantation and spices crops cultivated in the niche ecosystems of the Western Ghats. There are practically no other areas in the country where these crops can be profitably cultivated (except certain patches in the Eastern Ghats, parts of sub-Himalayan North East etc.)
3. It is learnt that M/o Environment & Forests have set up an Expert Panel under Shri Kasturirangan, Member Planning Commission to look into the Gadgil Committee recommendations. Accordingly, the M/o Environment & Forests are requested that the comments of the Commodity Boards may be placed before the Kasturirangan Panel for its consideration.
4. This issues with the approval of the Minister of State (Commerce & Industry).



(G. B. Upadhyay)
Deputy Secretary to the Govt. of India
Telephone No. 011-23062510

Ministry of Environment & Forests
[Dr. T. Chatterjee, Secretary],
Paryavaran Bhawan,
Room No.401,
CGO Complex,
Lodhi Road,
New Delhi-110003.

URGENT

No. 8/2/2012-M.V
Government of India
Ministry of Mines

New Delhi, the March, 2013

OFFICE MEMORANDUM

Subject: Western Ghat Ecology Expert Panel Report-Regarding

The undersigned is directed to refer to Secretary, Ministry of Environment & Forests DO letter no. 1/1/2010-RE (ESZ) Pt-NGT dated 7.03.2013 addressed to Secretary, Ministry of Mines on the above subject and to forward herewith the comments of this Ministry.

2. This issues with the approval of Hon'ble Minister for Mines.

DD(CAL)
M/W
15/3/13


(Rokhum Lalremruata)
Director (Mines)
Telefax: 23388345

Encl.: as above

Ministry of Environment & Forests
(Shri Ajay Tyagi, Joint Secretary)
Paryavaran Bhavan, CGO Complex
Lodhi Road, New Delhi – 110 003

Copy to:

Dr. K. Kasturirangan, Member(Science) - w.r.t. DO no. 1-4/2012-RE, dated 19.2.2013
Planning Commission
Yojana Bhavan,
New Delhi – 110 001

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COMMENTS OF MINISTRY OF MINES

1. Eco-sensitive zone is an area around protected areas, such as national parks, wild life sanctuaries etc., which acts as a shock absorber. The area acts as a transition zone from high protection areas to areas involving lesser protection. Many of the existing protected areas have already undergone tremendous development in close vicinity to their boundaries, therefore, the extent of eco-sensitive zone around protected area has been kept flexible and confined to specifics of the protected area in question.

2. The thrust of the Report is on protection of ecologically fragile and sensitive zones of the environment. An omnibus ban on mining activity in the ecologically sensitive zones of the WG may not be appropriate. Even the Western Ghats Ecology Expert Panel (WGEEP) admitted in the Report that there are still serious lacunae in the methodology for determining ecological sensitive zones (ESZs). In particular, their database is yet to incorporate considerations of habitat continuity. It is also weak in terms of information on streams, rivers and other wetlands, as well as ground water and further careful work is needed to identify, protect and sustainably manage aquatic habitats and water resources. Since their focus is on hill areas, this database also leaves out of consideration issues of significance for the West Coast and coastal plains, such as mangrove forests and khajan lands (page 9 of the Executive Summary of the Report). Therefore, there is a need to re-look the definition of what constitutes an 'ecologically sensitive zone', to identify areas/zones which are in imminent danger to the flora/fauna. Once such areas are identified, we may ban all kinds of economic activities in the most ecological sensitive areas.

3. The requirement of economic development should be considered while formulating a policy for Western Ghat. With the advancements in technology and scientific management in mining, there is ample possibility to limit the adverse environmental impacts to acceptable levels. There are many environmental-friendly technologies available such as the use of ripper/ dozers or "surface miners" which obviates the need for blasting. In certain deposits, underground mining is an option in

which case environmental impacts are much less than in open-cast mining. Therefore, it is possible to embark on sustainable mining which would be safe and with least impact to the environment. There is definitely a scope for allowing such ecologically sustainable mining in the WG.

4. Of the 134 Talukas in 44 districts falling in Western Ghats, 83 talukas (62%) have been identified as falling in ESZ -1. To suggest a complete ban on mining activities in ESZ-1 needs to be understood from the perspective of the potential adverse impact on the economy.

5. Bauxite, Iron ore, Manganese and Gold are major minerals found in the Western Ghats. The other minerals found are lime stone, chromite, china clay, laterite, fireclay etc. As on 1.4.2010, mineral reserves of Iron ore, Bauxite and Manganese in the Western Ghats area are 7312 million tonnes, 86.8 million tonnes and 24.08 million tonnes respectively. A sizeable area of Western Ghats falls into Obviously Geologically Potential (OGP) area from minerals availability point of view, which was identified by GSI. GSI is undertaking geophysical and geochemical mapping of OGP area which may further lead to enhancement in the mineral resources in the Western Ghats. Therefore, exploration of mineral resources in the Western Ghats by GSI and MECL may be permitted irrespective of the area falling in any category.

6. Digging of minor minerals such as earth, sand, gravel etc. for construction or repair of own houses shall not be prohibited in any category of Ecological Sensitive Zone.

7. Specific Comments on recommendations with respect to each category of Ecological Sensitive Zone

1. WGEEP recommendations on ESZ-1

- (i) No new licenses to be given for mining.
- (ii) Where mining exists, it should be phased out in 5 years, by 2016.
- (iii) Detailed plans for environmental and social rehabilitation of mines which are to be closed.

(iv) Illegal mining to be stopped immediately.

Comments of the Ministry

- (i) In order to ensure that mining is undertaken in a responsible manner, new mining leases for minerals of national importance i.e. minerals contributing significantly to the economy of the country directly / indirectly such as iron ore, bauxite etc. [Minerals in part 'C' of First Schedule to the Mines and Minerals (Development and Regulation) (MMDR) Act, 1957] and 'rare earth minerals' and 'atomic minerals' should be permitted/granted only to Central / State PSUs with 100% Government equity subject to the following stringent conditions:
1. Undertake underground mining to the extent possible.
 2. Sustainable Development Mining which, inter-alia, includes:
 - a. Incorporating Environmental and Social Sensitivities in mining operations;
 - b. Managing adverse environmental impacts by following international best practices to minimize any adverse impact on environment such as ISO 14001 Environmental Management Systems;
 - c. Addressing Land, Resettlement and Other Social Impacts appropriately;
 - d. Community engagement and contribution to socio-economic development of surrounding areas; and
 - e. Scientifically Mine Closure and Post Closure;
 3. Environmental Auditing as enumerated in ISO 14010, 14011, 14012 on regular basis by an agency of repute.
- (ii) In respect of existing private sector working mining leases, mining should be allowed for maximum 5 years to continue till the known mineral reserve is exhausted. Existing lease area may be explored within one year to know available reserves.
- (iii) We may agree with recommendation.
- (iv) Yes, illegal mining shall not be allowed under any circumstance.

2. WGEEP recommendations on ESZ-2

- (i) No new mining licenses will be granted. This moratorium can be reviewed on a case by case basis.
- (ii) Existing mining to adopt good practice mining and be under strict regulation and social audit.
- (iii) Detailed plans for environmental and social rehabilitation of mines to be closed.
- (iv) Illegal mining to be stopped immediately.

Comments of the Ministry

- (i) Renewals or grant of new mining leases for mineral of national importance i.e. minerals specified in Part 'C' of the First Schedule to the MMDR Act, 1957 and 'rare earth minerals' and 'atomic minerals' should be permitted subject to all conditions as mentioned above in the case of ESZ – 1.
- (ii) We may agree with recommendation.
- (iii) We may agree with recommendation.
- (iv) Yes, illegal mining shall not be allowed under any circumstance.

3. WGEEP recommendations on ESZ-3

- (i) New mining may be taken up only for scarce minerals not available on the plains and should be under strict regulation and social audit, subject to free prior informed consent of tribal and other communities and in recognition of tribal rights.
- (ii) Existing mining to adopt good practice mining and be under strict regulation and social audit.
- (iii) Illegal mining to be stopped immediately.

Comments of the Ministry

- (i) Renewals or new mining leases should be granted for all minerals subject to strict regulation and engaging community as mentioned above in the case of ESZ – 1.
- (ii) We may agree with recommendation.
- (iii) Yes, illegal mining shall not be allowed under any circumstance.

Most Immediate



No. 27/1/2012-H-II

भारत सरकार

Government of India

विद्युत मंत्रालय

Ministry of Power

Shram Shakti Bhawan, Rafi Marg, New Delhi – 110001

Telephone No. 2371 5507; Fax No. 2371 7519

Dated: 07.09.2012

Office Memorandum

Subject: Western Ghats Ecology Expert Panel Report- regarding.

The undersigned is directed to refer to D.O. No. 1/1/2010-RE(ESZ) dated 31.08.2012 received from Shri K. Kasturirangan, Member, Planning Commission, & Chairman of the High Level Working Group to examine the reports of WGEEP. In this connection, it is informed that the report submitted by WGEEPs was examined by this Ministry in consultation with the Central Electricity Authority, a technical body under this Ministry. The comments of the CEA is enclosed at Annex-I. The CEA also referred the matter to WAPCOS to furnish its comments on environmental aspects. The comment of WAPCOS has also been enclosed at Annex-II. As desired, the comments of both CEA & WAPCOS are forwarded herewith for further necessary action at your end.

Encl: As above.

(Ajit Kumar)

Under Secretary to the Govt. of India

Tel.: 23714169

Email: kumar.ajit@nic.in

Ministry of Environment and Forest
[Kind Attn: Sh. Ajay Tyagi, JS(MoEF)
Member Convenor, HLWG on WGEEP]
Paryavaran Bhawan
CGO Complex, Lodi Road
New Delhi-110 003

Background Note on Western Ghat Ecology Expert Panel Report

The MoEF constituted Western Ghat Ecology Expert Panel (WGEEP) under the Chairmanship of Prof. Madhav Gadgil to, inter alia, (i) demarcate ecologically sensitive areas in Western Ghats, (ii) recommend measures for management of these ecologically sensitive areas, (iii) recommend measures for preservation, conservation and rejuvenation of this environmentally sensitive and ecologically significant region and (iv) recommend modalities for the establishment of Western Ghat Ecology Authority under the Environment (Protection) Act, 1986.

A report was prepared by Western Ghat Ecology Expert Panel (WGEEP) and was submitted to MoEF recommending broad sectoral guidelines for different ecosensitive zones in Western Ghats region. These guidelines covers important sectors such as agriculture, land use, mining, industry, tourism, water resources, power, roads and railways. Further, the WGEEP report also explicitly mentions about implementation of provisions of Forest Rights Act, 2006.

The MoEF solicited the comments of Ministry of Power on the report of WGEEP. MoP forwarded the report of Western Ghats Ecology Expert Panel (WGEEP) for examination of comments of CEA. The report was examined in CEA and it was seen that WGEEP has given the following recommendations for Power/Energy Sector:

A. General Recommendations for Power/Energy Sector given in para 13:

1. Educate the energy consumer about the environmental and social impacts of energy production and for reducing "luxury" demand.
2. Encourage demand side management enhanced energy efficiency across sector.
3. Launch "smart" campaigns as key components of demand side management focusing on smart grids, smart buildings, smart power logistics and smart motors.
4. Promote decentralized electricity, use of solar power.
5. No diversion of streams / rivers allowed for any power projects and if already existing to be stopped immediately.
6. Catchment area treatment in a phased manner following watershed principles; continuous non-compliance of clearance condition for three years would entail decommissioning of exiting project.
7. Dams and thermal projects that have crossed their viable life span (for dams the threshold is 30-50 years) to be decommissioning in phased manner.
8. All project categories to be jointly operated by LSGs by and power boards with strict monitoring for complication under DECs.

B. Recommendations for Thermal and Hydro Projects including other modes of Energy Generation in three Ecological Zones namely ESZ1,ESZ2 and ESZ3 given in para 13

WGEEP has given some recommendations in respect of Ecologically Sensitive Zone-1 (ESZ1), ESZ2 and ESZ3 which inter-alia denotes (i) Regions of highest sensitivity or

Ecologically Sensitive Zone (ESZ1), (2)Regions of high sensitivity or ESZ2, and the (3) Regions of moderate sensitivity or ESZ3.

ESZ1:

- i) Allow run of the river schemes with maximum height of 3 m permissible which would serve local energy needs of tribal/local communities/plantation colonies subject to consent of gram sabha and all clearances from WGEA,SEA and DEC's.
- ii) No forest clearance or stream diversion for new projects.
- iii) Run of the river schemes not allowed in first order or second order streams.
- iv) Promote small scale, micro and pico hydropower systems, that are people owned & managed and are off grid.
- v) New small hydropower projects (10 MW and below) are permissible.
- vi) No new thermal power plants.
- vii) Strict environmental regulation of existing thermal power plants.
- viii) Existing thermal plants to actively promote alternate uses of fly ash – such as in road making in addition to the existing practice of manufacture of fly ash bricks.
- ix) No large scale wind power projects.
- x) Promote biomass based/solar sources for decentralized energy needs.

ESZ2:

- i) Small bandharas permissible for local and tribal community use/local self government use.
- ii) No new dams above 15 m or new thermal plants permissible.
- iii) New hydro projects between 10-25 MW (up to 10 m ht) permissible.
- iv) All project categories subject to very strict clearance and compliance conditions through SEA and DEC's of WGEA.
- v) Have run off the river hydropower projects but after cumulative impact study of the river basin is done.
- vi) Regulated wind power projects but after cumulative environmental impact assessment (CEIA).
- vii) Zero pollution to be required of existing Thermal Power Plants.

ESZ3:

- i) Large Power plants are allowed subject to strict environmental regulations including-
 - cumulative impact assessment studies
 - carrying capacity studies
 - minimum forest clearance (norms to be set by WGEA)
 - based on assessment of flows required for downstream needs including the ecological needs of the river.
- ii) Existing power plants subjects to strict regulation and social audit.
- iii) Zero pollution to be required for new thermal power plants.
- iv) Wind projects only after CEIA.

- v) For already existing dams reservoir operations to be rescheduled for allowing more water downstream.

C. Recommendations for Athirappilly HEP and Gundia HEP given in para 15

Recommendations given by WGEEP in regard to Athirapally HEP

The WGEEP recommends to the MoEF that the Athirapilly – Vazhachal area should be protected as such and the permission for the proposed hydro-electric project at Athirappilly should not be given.

Recommendations given by WGEEP in regard to Gundia HEP

1. The execution of the Gundia project in three stages and two phases will cause large scale land cover changes in this basin. The impacts on the habitat and biodiversity would come not only from submergence but also associated activity including building constructions as well as roads to access the various project sites.
2. The project would alter the hydrological regime of the river basin. Kumaradhara River, a perennial source of water to the important temple-township at Subramanya, will lose water due to its diversion to the Bettakumari dam. This may have implications for the pilgrims visiting the temple. The implications of land cover changes on the catchment yield as well as diversion of waters as envisaged in the project are not clear. Current perennial streams could become seasonal (as has happened in the Sharavathi river basin), while the altered hydrology downstream could affect livelihoods of local people.
3. The tunnel access to the main underground power house is located in an area of primary forest cover. This location is not desirable as it would cause disturbance to one of the few remaining patches of primary evergreen forests of the Gundia basin.
4. The proposed Gundia hydro electric project falls in an area that has been classified as Ecologically Sensitive Zone I by the WGEEP. WGEEP recommends that no large storage dams be permitted in ESZI.
5. The recommendation of the WGEEP is therefore not to permit the execution of the Gundia HE Project (in three stages and two phases) as the loss of biodiversity and environmental impacts would be significant.

Comments of CEA

Thermal Projects:

The recommendations on thermal power as contained in para 13 of the report of WGEEP have been examined. As per these recommendations, no new thermal power plant may be permitted in ESZI and ESZ2. From Appendix II it is seen that talukas in Uttar Kannada district of Karnataka consisting of Honavar and Ankola have been assigned to ESZI and taluka Kumta has been assigned to ESZ2. In this regard it may be mentioned that Central Mines Planning and Design Institute Ltd (CMPDI), Ranchi has carried out a study on behalf of CEA for identification of potential sites for thermal power stations in the coastal zone of the state of Karnataka based on remote sensing data. CMPDI in their

report has identified potential sites for thermal power projects in the above mentioned three talukas namely Honavar, Ankola and Kumta. The sites have been identified taking into account the availability of land, sea water, infrastructure facilities, R&R issues and environmental aspects. In this regard, it may be mentioned that earlier many sites have been explored in Karnataka but no suitable sites could be finalized so far for the ultra mega power project (UMPP) in Karnataka. A team of officers from CEA/ CMPDI and the state government agencies including state pollution control board propose to visit these sites identified by CMPDI to select one suitable site for the UMPP in Karnataka.

It is suggested that WGEEP may review the recommendations in regard to location of thermal power plants in regard to the above mentioned talukas.

Hydro Projects:

The recommendations on Hydro Projects as contained in para 13 of the report of WGEEP indicates that in ESZ1, Run of the river schemes are not allowed in first order or second order streams and only New small hydropower projects (10 MW and below-Run of the River schemes with maximum height of 3 m) are permissible while in ESZ2, New hydro projects between 10-25 MW (up to 10 m ht) permissible. In ESZ3, Large Power plants are allowed subject to strict environmental regulations including-

- cumulative impact assessment studies
- carrying capacity studies
- minimum forest clearance (norms to be set by WGEA)
- based on assessment of flows required for downstream needs including the ecological needs of the river.

In this connection, it is to mention that the first order and second order streams are not defined in the report and the categorization of ESZ1,ESZ2 and ESZ3 have been done taluka- wise. No information is available in CEA regarding the schemes likely to be affected in these talukas . The information regarding the number of projects in the proposed ESZ at taluka level may be available in the respective States. Therefore, it is suggested that comments from the respective states in Western Ghat area may be obtained. Based on the information available in CEA , one hydro scheme namely Kundah Pumped storage scheme in Nilgiris district of TamilNadu ,whose DPR was returned by CEA in December'2007 is falling under the ESZ area. However, the same needs to be confirmed from respective State Govt.

The Recommendation that Dams and Thermal projects that have crossed their viable life span (for dams the threshold is 30-50 years) should be decommissioned in phased manner, is worth considering.

The Recommendation that there should be no diversion of streams / rivers for any power projects and if already existing to be stopped immediately will hamper the hydro development in the country . Therefore, it is suggested that instead of putting a blanket ban, the merits and demerits of individual project may be examined and the decision should be taken on case to case basis. If considered necessary, environmental flows could be stipulated to maintain downstream environment instead of putting a blanket ban.

Status of Athirapilly Hydro Electric Project

Concurrence to Athirapilly Hydro Electric Project located in Kerala by Kerala State Electricity Board was accorded by CEA vide letter dated on 31.03.2005 with an installed capacity of (2x80 + 2x1.5 = 163 MW) at an estimated cost of Rs. 385.6 crores at 2004-05 price level.

Athirapilly HEP envisages construction of a 23m high & 311m long concrete gravity dam, a 210m long power tunnel intake, a 4690m long & 6.4m dia. power tunnel, a 57m high & 20m dia. surge tank, a 102 m high & 6.4m dia. vertical pressure shaft, 464m long & 6.4m dia. high pressure RCC tunnel, 202m long & 5m dia. steel lined tunnel, 50m long & 3.4m dia 2 penstocks, a 2x80 MW main surface power house with vertical Francis Turbine, 59m long & 2.6m dia. penstock pipe for dam toe power house bifurcating into 2 nos. 1.96m dia each and a 2x1.5 MW dam toe power house with tubular turbines to utilize the water release for maintaining the Athirapilly water falls.

The combined annual energy generation of the project in 90% dependable year with 95 % machine availability is 234.33 MU (226.24 MU from main power house and 8.09 MU for Dam Toe Power house) with operating net design heads of 147.5m at main PH and 19.5 m at dam toe PH. MOEF have earlier accorded environmental clearance during July'2007 but subsequently issued notice to KSEB on issues regarding effect on Tribals and Biodiversity. The matter is under correspondence between MOEF and KSEB.

Status of Gundia Hydro Electric Project

Concurrence to Gundia Hydro Electric Project Phase-I located in Karnataka by M/s Karnataka Power Corporation Limited was accorded by CEA vide letter dated on 25.04.2008 with an installed capacity of (1 x 200 = 200 MW) at an estimated cost of Rs. 1119.56 crores at November, 2007 price level.

Gundia HEP envisages construction of 15m high Yettina hole weir, 13m high Kerohole weir, 87m high Hongadhalla storage dam, 36m high Hongadhalla weir, 62m high Bettakumari dam, 4237m long & 5m dia. & 4895m long 5.5m dia. inter-connecting tunnels between Yettihole weir & Bettakumari dam Reach-1 & Reach-2 respectively, 365m long cut & cover reach, 8060m long & 6.5m dia. head race tunnel, 122m high & 10m dia. surge shaft, 770m long & 4.25m dia. pressure shaft, 83m long (37m for phase-1 + 46m for Phase-2) & 3.2m dia. steel lined penstock, and 1 x 200 MW underground power house with Pelton turbine.

Annual energy generation of the project in 90% dependable year with 95 % machine availability is 613 MU with operating net design head 600m.

Comments on Athirapilly and Gundia HEP

It has been mentioned that location of Athirapilly HEP and Gundia HEP falls in ESZ1 area. These two hydro electric projects are in advanced stage of development. Stopping these projects would further hamper the development of Hydro Power. It is suggested that decision on these projects may be reviewed and comments of concerned state Government may also be obtained.

Comments on Environment Aspects

The comments of WAPCOS on Environment aspects of the report have been solicited as CEA has no expertise in assessing Environmental Impact of the recommendations made in the report of WGEEP.

**Comments on Report of the Western Ghats Ecology Expert
Panel-Hydropower related aspects**

The report of the Western Ghats Ecology Expert Panel has been reviewed. The outcome of the Report includes a set of recommendations for sustainable Development of the Region.

- On pages 16 to 19, section 9 of Volume-I, Report has recommended categorization of Western Ghats as below :

ESZ1 : Region of highest sensitivity or ecologically sensitive zone

ESZ2 : Region of high sensitivity

ESZ3 : Region of moderate sensitivity.

The above categorization is recommended in addition to already declared protected areas, under regulations prescribed by various acts. The WGEEP has prepared maps covering the entire Western Ghats Region depicting Protected Areas, ESZ1, ESZ2 and ESZ3. The report also confirms (Page 18 of Volume-I) that there still are serious lacunae w.r.t. data used for categorization of Ecologically Sensitive Areas. The database used to classify various categories of ecological sensitivity is weak in terms of habitat continuity, information on streams, river and other wetlands, as well as groundwater. However, on pages 45 and 46, the report gives recommendation for hydropower development.

Without studying the river in details in terms of water availability, water quality and aquatic ecology, recommendations need not be made about hydropower development, as there is no basis for such recommendations.

The recommendations given too are sweeping in nature, without considering the ground realities which can be attributed to absence of adequate studies. The response to various recommendations are given in Tables 1 to 3.

**Table-1 : Response to recommendations given for hydropower development for ESZ1
Category (Region of highest sensitivity or ecologically sensitive zone)**

S.No.	Comment	Response
1.	Allow run of the river schemes with maximum height 3 m permissible which would serve to meet local energy needs subject to consent of gram sabha and all clearance for WGEA, SEA and DEC's	<ul style="list-style-type: none"> • Basis of allowing maximum height of 3 m not clear. • Correlation of project capacity with respect to water availability after considering quantum of water to be diverted in various seasons needs to be made. This would have sufficient Environmental Flows for sustenance of downstream water requirements. ○ <i>This condition needs to be reviewed.</i>
2.	No forest clearance on stream diversion for new projects	<ul style="list-style-type: none"> • Contradictory to first recommendation. If power project with dam height upto 3 m requires forest clearance, then will the project be scrapped. • <i>This condition needs to be reviewed.</i>

S.No.	Comment	Response
3	Runoff the river schemes not allowed in first order or record order streams	Accepted, as it is necessary for sustenance of riverine ecology including fish movement
4	Promote small scale, micro and pico hydropower systems that are people owned and managed and are off grid	This concept is very good, but without state intervention, there will be difficulty in implementation of Environmental management Plan and Monitoring Programme. There will be a tendency to generate maximum energy, which will affect the release of adequate quantity of Environmental Flows. <i>The implementation mechanism of this condition needs to be reviewed.</i>
5	New Small hydropower project (10 MW and below) are permissible	<ul style="list-style-type: none"> • Basis of arriving capacity of 10MW is not clear. • Contradictory to recommendations no. 1 and 2 If such projects require dam height greater than 3 m or need forest land acquisition, then these projects will have to be scrapped as per recommendations given at S.No. 1 and 2. • Limit on capacity of project be excluded • Environmental Clearance to be taken as per the guidelines of EIA notification of September 14, 2006 and its subsequent amendments. • Forestry Clearance as per the existing Forestry clearance norms • <i>This condition needs to be reviewed..</i>

Table-2 : Response to recommendations given for hydropower development for ESZ2 Category (Region of High Sensitivity)

S.No.	Comment	Response
1.	Small Bandharas Permissible for local/tribal/community use/local self government use.	<ul style="list-style-type: none"> • Basis for such a recommendation not given • This recommendation needs to be excluded • Projects with strict clearance and compliance conditions be allowed. • Environmental Clearance to be taken as per the guidelines of EIA notification of September 14, 2006 and its subsequent amendments. • Forestry Clearance as per the existing Forestry clearance norms • <i>This recommendation needs to be reviewed.</i>
2.	No new dams above 15 m permissible	<ul style="list-style-type: none"> • Basis for restriction of dam height to 15 m not given • <i>This recommendation needs to be</i>

S.No.	Comment	Response
		<p><i>reviewed.</i></p> <ul style="list-style-type: none"> • Projects with strict clearance and compliance conditions be allowed. • Environmental Clearance to be taken as per the guidelines of EIA notification of September 14, 2006 and its subsequent amendments. • Forestry Clearance as per the existing Forestry clearance norms
3.	New hydropower projects between 10-25 MW upto 10 m height permissible	<ul style="list-style-type: none"> • Basis for selection of dam height 10 m is contradictory to recommendation at S.No. 2, as it allows dam upto 15 m height • <i>This recommendation needs to be reviewed.</i> • Basis for restriction to project capacity between 10-25 MW not given • Projects with strict clearance and compliance conditions be allowed. • Environmental Clearance to be taken as per the guidelines of EIA notification of September 14, 2006 and its subsequent amendments. • Forestry Clearance as per the existing Forestry clearance norms
4.	All project categories subject to very strict clearance and compliance conditions through SEA and DEC's of WGEA	Accepted but it is contradictory to recommendation No. 3, which limits the capacity of hydropower projects to 10-25 MW.
5.	Have run off the river hydropower projects but after cumulative impact status of the river basin is done	Accepted, However, basin study needs to be done by government institutes, research institutions, PSUs, who have experience in conducting such studies. The TORs for such studies can be formulated by WGEA in consultation with Expert Appraisal Committee for River Valley Projects of MoEF. The study should be done by one or more agencies and the Study Team should comprise of Experts namely Ecologists, Forestry Expert, Fisheries Expert, Hydrologist, Environmental Engineers.

Table-3 : Response to recommendations given for hydropower development for ES 23
Category(Region of Moderate Sensitivity)

S.No.	Comment	Response
1.	<p>Power plants are allowed subject to strict environmental regulations including</p> <p>a) Cumulative Impact Assessment Studies</p> <p>b) Carrying capacity study</p> <p>c) Minimum forest clearance (norms to be set by WGEA)</p> <p>d) based on assessment of flows requires for downstream needs including ecological needs of the river.</p>	<p>Accepted and power projects should be allowed based on a Basin study which should assess the power potential of the basin. The study shall assess the number of projects that can be allowed and for the identified projects a cumulative Impact Assessment study be done.</p> <p>Basin study needs to be done by government institutes, research institutions, PSUs, who have experience in conducting such studies. The TORs for such studies can be formulated by WGEA in consultation with Expert Appraisal Committee for River Valley Projects of MoEF. The study should be done by one or more agencies and the Study Team should comprise of Experts namely Ecologists, Forestry Expert, Fisheries Expert, Hydrologist, Environmental Engineers.</p> <p>The forestry clearance should be as per existing norms of Ministry of Environment & Forests. Additional norms can be suggested by WGEA can be reviewed by MoEF and if required can be addressed during the course of Forestry Clearance.</p> <p>Accepted.</p>
2.	Existing power plants subject to strict regulation and social audit	Accepted

Conclusions and Recommendations

- Scientific basis for recommendations of norms/guidelines have not been given.
- As accepted in the report, the detailed data base on rivers, streams, etc. is not available. In view of this the recommendation seem to be arbitrary in nature.
- The recommendations for projects in various categories of Ecological Sensitivity have been recommended on similar lines of categories (Category –A, Category-B, Category-C) given in EIA notification of September 14, 2006. No scientific basis for limit on project sizes on various categories has been given.

- Various projects should be reviewed under existing Environmental and Forestry Clearance processes of Ministry of Environment and Forests (MoEF). WGEA can suggest various measures for improvement of the process, which if applicable, can be addressed during the clearance process.
- Projects with adequate Environmental Measures including clear free flow of river stretch and Environmental Flows be allowed after taking clearance from Forest Department or SEIAA or EAC of MoEF as per the EIA notification of September 14, 2006.
- Basin study should be conducted for each river basin in the Western Ghats Region. The basin study shall cover the following aspects:
 - Modification in hydrologic regime due to diversion of water for hydropower generation.
 - Depth of water available in river stretches during lean season, and its assessment of its adequacy vis-à-vis various fish species.
 - Length of river stretches with normal flow due to commissioning of various hydroelectric projects due to diversion of flow for hydropower generation.
 - Impacts on discharge in river stretches during monsoon and lean seasons due to diversion of flow for hydropower generation.
 - Impacts on water users in terms of water availability and quality
 - Impacts on aquatic ecology including riverine fisheries as a result of diversion of flow for hydropower generation.
 - Assessment of maintaining minimum releases of water during lean season to sustain riverine ecology, maintain water quality and meet water requirements of downstream users.
 - Impacts due to loss of forests
 - Impacts on rare, endangered and threatened species
 - Impacts on economically important plant species
 - Impacts due to increased human interferences

The key outcomes of the Basin study shall be to provide sustainable and optimal ways of hydropower development in the basin, keeping in view of the environmental setting of the basin.

No. S-14017/1/2012-DDP
Government of India
Ministry of Rural Development
Department of Land Resources
(DDP Section)

Block 11, 6th Floor, CGO Complex,
Lodhi Road, New Delhi
Dated 17th September, 2012

Office Memorandum

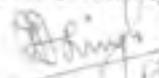
Subject: Comments on the Report of the Western Ghats Ecology Expert Panel (WGEEP) constituted by the Ministry of Environment & Forests under the Chairmanship of Prof. Madhav Gadgil.

The undersigned is directed to refer to Shri Kasturirangan, Member, Planning Commission's D.O. letter No. 1/1/2010-RE (ESZ) dated 31.08.2012 on the subject noted above and to state that the Report of WGEEP has suggested proposed guidelines/ Summary Recommendations for Sector-wise activities for Ecologically Sensitive Zone (ESZ¹), ESZ2 & ESZ3.

The Department of Land Resources has been implementing three major area based programmes namely, Drought Prone Areas Programme (DPAP), Desert Development Programme (DDP) and Integrated Wastelands Development Programme (IWDP) on watershed approach since 1995-96. All the three programmes have been integrated and consolidated into a single modified programme called Integrated Watershed Management Programme (IWMP) with effect from 26.02.2009. Under IWMP, watershed projects are implemented on rain-fed/ degraded lands in the country. The major activities of the scheme are ridge area treatment, drainage line treatment, soil and moisture conservation, rainwater harvesting, nursery raising, afforestation, horticulture, pasture development etc.

As the proposed recommendations contained in the Report of WGEEP are not clashing with Watershed Management Programme, the Department of Land Resources has no objection to the demarcation of Western Ghats into Ecologically Sensitivity Zones and guidelines for preservations of the biological diversity of the area.

Yours faithfully,


(Jagdish Singh)
DIG (WM)

Tel. No. 011-24362569

Shri Ajay Tyagi,
Joint Secretary,
Ministry of Environment & Forests,
Room No. 417, Paryavaran Bhawan,
CGO Complex, Lodhi Road, New Delhi.



Manu Goel
Executive Director/Heritage

भारत सरकार
रेल मंत्रालय, (रेलवे बोर्ड)
नई दिल्ली-110 001
GOVERNMENT OF INDIA
MINISTRY OF RAILWAYS
(RAILWAY BOARD)
NEW DELHI-110 001

No. 2012/Heritage/Western Ghats

New Delhi, dated 4-10-2012

Dear Shri Tyagi,

Kindly refer to Shri K. Kasturangan, Member, Planning Commission's letter No. 1/12010-RE(ESZ) dated 31.8.2012, addressed to Shri Vinay Mittal, Chairman, Railway Board, calling Ministry of Railway's comments on the Western Ghat Ecology Expert Panel (WGEEP) Report.

This Ministry fully shares the need for strict regulations and social audits before permitting new development in the Economic Sensitive Zone (I, II & III). At the same time, this Ministry would also like to emphasize on the need for infrastructural development in the country and the role of the Railways as a vital and indispensable instrument for such a development. With regard to the specific Railway projects mentioned in the Report, the views of the Ministry are as under:-

A total of five rail projects are listed in the Report. Out of these, the following three projects have been sanctioned. These new railway lines are considered essential for the development of the region due to the following reasons:-

- **Hubli-Ankola NL(167 kms)** - Hubli is an existing Jn. station on Hospet-Dharwad SL section. Ankola is an existing station on Karwar-Udupi section. This will provide an alternate route to and from Konkan Railway and for Karwar port. The Mormugao port is getting saturated and this project will facilitate movement of freight trains via alternate route.
- **Bangalore-Satyamangalam-Mettupalayam** - Bangalore is an existing station on Mysore-Yashwanipur section of South Western Railway. Mettupalayam is an existing station on Coimbatore-Mettupalayam Single Line section of Southern Railway. There is Narrow Gauge line available between Mettupalayam to Uttagamandalam. Presently, Satyamangalam is not on rail head. This will provide an alternate route from Bangalore to Down South and it will be utilized for passenger traffic. There is a steady growth of 8% passenger traffic in the last one year and the trend is likely to continue during the XII & XIII Plan periods also because overnight and intercity travel will be the main stay for the passenger traffic for Railways.
- **Sabrimala-Angamali** - Angamali is an existing station on Ernakulam-Shoranur Double Line section of Southern Railway. Presently, Sabrimala is not connected with rail head. This will cater to passenger traffic and also serve for pilgrimage purpose. It is seen from the trend in the past that the pilgrimage traffic to all destinations in the country is going up steadily and there is constant demand for new trains and new connectivity for the pilgrimage places.

The Mysore - Kannur and Talguppa-Honnavar lines are not yet surveyed, hence no comments can be offered at this stage. Further, it is recommended that Ministry of Railways should also be represented in the proposed Sub-Committee on the transport sector under the Western Ghat Ecology Authority so that exchange of information on Railway related projects can be ensured.

With regards,

Yours sincerely,

(Manu Goel)

Shri Ajay Tyagi
Joint Secretary
Ministry of Environment & Forest
Room No. 517, 4th Floor
CGO Complex, Lodhi Road
New Delhi - 110 003.

No. 12(13)/2012-RM-I

भारत सरकार

Government of India

इस्पात मंत्रालय

Ministry of Steel

उद्योग भवन, नई दिल्ली

Udyog Bhawan, New Delhi

दिनांक / Date: 26.04.2012

OFFICE MEMORANDUM

Subject: Report of the Western Ghats Ecology Expert Panel (WGEEP) – regarding.

The undersigned is directed to refer to Ministry of Environment and Forest D.O. letter No.1/1/2010-RE-ESZ dated 4th January 2012 and to furnish the comments/ views of Ministry of Steel on the Report of WGEEP as under:

(i) For equitable growth of any region, economic development and environmental protection should go side by side. Due attention should be given to the integration of economic, trade, and environmental strategies so that they supplement and strengthen each other. Therefore, a sustainable and integrated approach may be adopted for the whole of the western region with due consideration to the economic and industrial development of the region, along with the environmental protection. It, however, appears that the recommendations of WGEEP regarding moratorium on mining activities and recommendations regarding industrial and infrastructural projects (including railway lines and roads) may have negative impact on the industrial growth of the region, as these stringent provisions may not only drift away the industries from the demarcated zones, but may also adversely affect development of requisite infrastructure in the region.

(ii) It is agreed that the Western Ghats are rich in biological resources and are ecologically sensitive areas. However, while due priority needs to be given to their rich ecological heritage, this objective should not be achieved by closure or keeping moratorium on the economic activities but by maintaining a healthy balance between growth and ecological preservation. This Ministry is of the view that while taking measures for ecological safeguards, for ensuring industrial and economic development of the region industries may be allowed within the carrying capacity of the region/ area, with suitable safeguards and measures for preservation of ecology, flora and fauna.

(iii) Iron and Steel sector is one of the most important infrastructural sectors of the country, contributing significantly to overall economic growth and development of the nation. Iron and Steel Industry, which is a critical infrastructure for the country's growth, depends on the mining industry for fulfilling the requirement of various raw materials, including iron ore.

-contd-

(iv) Most of the magnetite iron ore resources in India (about 8 billion tonnes out of total about 28 billion tonnes of iron ore resources of the country) are located in the Western Ghats. Closure or moratorium on mining activities in this region would result in non-availability of this precious resource for use by the iron and steel industry of the country. This may not be in long term interest of the domestic iron and steel industry. Natural resources are national assets and their judicious use in the development of the country is of critical importance. This Ministry is of the view that possibilities of exploration of magnetite resources located in Western Ghats needs to be explored through underground and scientific mining using modern technologies, so that the precious mineral resources of the country may be made available for larger national interest, while at the same time not damaging the ecology and environment in any manner. This aspect needs to be kept in consideration, while acting on the report of WGEEP. It could also be explored whether some mining by the Public Sector Undertaking, having reputation for scientific and sound mining practices, could be allowed for providing raw materials for the local industry within the carrying capacity of the region, without causing any environmental degradation.

(v) The report suggests the formation of a Western Ghats Ecology Authority (WGEA), a statutory authority which enjoys the powers under the Environment (Protection) Act. As the Western Ghats is an extensive region spanning over six States, it is desirable that the WGEA functions in a coordinated fashion with six constituent State Western Ghats Ecology Authorities (SWGEA), appointed jointly by the State Governments and the Central Ministry of Environment and Forests, to avoid administrative delays in environmental clearances. If required, Central PSUs like KIOCL Ltd and NMDC Ltd., which have extensive experience of working in the region could also be considered to be associated with WGEA and SWGEA.

2. This issues with the approval of Secretary (Steel).

27/4/2012
(Sanjay Mangal)
Director
Tele: 2306 3770

✓
Ministry of Environment & Forest
{Kind Attn: Dr. G.V. Subrahmanyam, Advisor (RE&NMNH)}
Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi

DD(AC) 30/4/12.

ASIT GOPAL
DIRECTOR
Tele: 011-23070508



भारत सरकार
GOVERNMENT OF INDIA
जनजातीय कार्य मंत्रालय
MINISTRY OF TRIBAL AFFAIRS
शास्त्री भवन, नई दिल्ली-110001
SHASTRI BHAWAN, NEW DELHI-110001

3528/JS (AT)/12
16/11
D.O.No.23011/29/2012-FRA

Dated: 7.11.2012

Dear Sir,

Kindly refer to your DO letter No.1-4/2012-RE dated 11.10.2012, addressed to Secretary, Tribal Affairs seeking comments of this Ministry on the identified issues related to the recommendations of the Western Ghats Ecology Expert Panel Report.

2. It is observed that the Western Ghats Ecology Expert Panel (WGEEP) in its report has made a number of observations/ recommendations relating to implementation of Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, administered by this Ministry. The comments of the Ministry on the observations/ recommendations of the Panel are given in the Annexure.

With regards,

AS (AL)
16/11

Yours sincerely,

Asit Gopal
(Asit Gopal)

Encls.: As above.

✓ Shri Ajay Tyagi,
Joint Secretary,
Ministry of Environment & Forests,
Room No.417, 4th Floor,
Paryavaran Bhawan,
CGO Complex, Lodi Road,
New Delhi-110003

ANNEXURE

Comments of the Ministry of Tribal Affairs on the observations/ recommendations relating to Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 contained in the Report of the Western Ghats Ecology Expert Panel (WGEEP).

Sl.No.	Observations/ recommendations	Comments of the Ministry of Tribal Affairs
1.	<p>In Box 9 : A summary of feedback of citizens in Mahabaleshwar – Panchgani ESZ, it has been stated that citizens are not informed of and no attempt is made to implement Acts that would involve them actively in conservation efforts, eg. Biological Diversity Act, Protection of Plants Varieties and Farmer's Rights Act and Community Forest Resources, Forest Rights Act.</p> <p>It is further stated that Gram Sabhas in small forest hamlets should be especially made aware of provisions like Forest Rights Act.</p>	<ul style="list-style-type: none"> ➤ As per the provisions of the Forest Rights Act, the onus of implementation of the Act lies with the State/ UT Governments. ➤ These observations/ recommendations may be brought to the notice of the Government of Maharashtra for taking necessary action. ➤ Ministry of Tribal Affairs is taking up task of awareness building at State level. Ministry of Panchayati Raj may need to build capacity of PR representatives.
2.	<p>In para 13 of Part 1 of the Report, the WGEEP has proposed certain guidelines/ summary recommendations for sector-wise activities. For sector "Forestry: Government lands", the Panel has recommended that the Forest Rights Act be implemented in its true spirit by reaching out to people to facilitate their claims and the Community Forest Resource provisions under FRA should replace all current Joint Forest Management Programmes.</p>	<ul style="list-style-type: none"> ➤ This Ministry agrees with the recommendation of the Panel that the Forest Rights Act should be implemented in its true spirit by reaching out to people to facilitate their claims. Action in this regard is, however, to be taken by the concerned State Governments. ➤ As regards the other recommendation that Community Forest Resource provisions under FRA should replace all current Joint Forest Management Programmes, it may be mentioned that section 2(a) of FRA defines the term "community forest resource", section 3(1)(i) recognizes the right of the forest dwelling Scheduled Tribes and other traditional forest dwellers relating to protection, regeneration or conservation or management of any community forest resource, and section 5(e) empowers the forest rights holders to ensure that the decisions taken in the Gram Sabha to regulate access to community forest resources are complied with. These provisions relating to community forest

		<p>resources under FRA are different from the Joint Forest Management Programmes implemented by the Ministry of Environment & Forests.</p> <ul style="list-style-type: none"> ➤ The Ministry has recently notified the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Amendment Rules, 2012 on 6.9.2012, laying down a specific procedure for recognition of rights relating to community forest resources under the Act. ➤ In view of the Amendment Rules, 2012, the claims relating to community forest resources have to be recognized and vested as per the laid down procedure. ➤ The Community Forest Resource Provisions under FRA and the Rules framed thereunder do not envisage replacement of current Forest Management Programmes.
3.	In para 13 of the Report, for the sector "Forestry: private lands", the WGEEP has recommended for recognition of rights of all small scale, traditional private land holders under FRA.	<ul style="list-style-type: none"> ➤ The FRA envisages recognition and vesting of the forest rights in the forest dwelling Scheduled Tribes and other traditional forest dwellers on the "forest land", as defined in section 2(d) of the Act. The FRA does not envisage recognition of forest rights of small scale, traditional private land holders
4.	In para 14.1 of the Report, the WGEEP has proposed constitution of an apex authority for the entire Western Ghats, to be known as the Western Ghats Ecological Authority (WGEA) along with State Western Ghats Authorities for each State and within them District Ecological Committees (DEC) for addressing the various environmental challenges of the Western Ghats. The composition and the functions of these authorities have also been specified.	<ul style="list-style-type: none"> ➤ It is observed from the composition of the (WGEA), State Western Ghats Authorities and District Ecological Committees (DEC) that no representation has been given to a representative of the Ministry of Tribal Affairs or the State Tribal Welfare Department in these authorities/ committees. <p>It is suggested that, while a representative of Ministry of Tribal Affairs of the level of Joint Secretary may also be included as an Official Member in the Western Ghats Ecology Authority (WGEA), a representative of the State Tribal Welfare Department may be included in the State Western Ghats Authorities and District Ecological Committees (DEC).</p>

5.	<p>In para 15 of the Report, the WGEEP has proposed that environmental clearance should not be given to any large scale storage dams in ESZ1 and ESZ2. While recommending that MoEF should refuse environmental clearance to Athirappilly and Gundia Hydel projects, the WGEEP has noted that the process of proper assignment of rights has not been completed in either of these areas and it is, therefore, quite improper to accord Environmental or Forest Clearances to these two projects. While examining the impact of Athirappilly Project on the tribal population, the WGEEP has observed that although most of the tribal dwellings in the area will not be affected by the project, there habitats will certainly be seriously affected. Further, no action has been taken as per the statutory provisions of the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, under which there are special provisions to recognize "rights over community tenures of habitat and habitation for primitive tribal groups and pre-agricultural communities".</p>	<ul style="list-style-type: none"> ➤ In view of the fact that the process of proper assignment of rights of the forest dwelling Scheduled Tribes and other traditional forest dwellers has not been completed in the Athirappilly and Gundia Hydel project areas, as per the provisions of the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, this Ministry agrees with the recommendation of the WGEEP that environment clearances or forest clearances for these two projects should not be given. ➤ MoEF should ensure that the provisions of the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 for recognition and vesting of the forest rights of the forest dwelling Scheduled Tribes and other traditional forest dwellers, residing in these project areas, are complied with before any environment clearance or forest clearance is accorded.
6.	<p>In para 16 of the report, while examining the issue related to development of mining, power production and polluting industry in Rantagiri and Sindhudurg districts of Maharashtra, the WGEEP has observed that an important Act empowering people in hilly, forested tracts like Ratnagiri – Sindhudurg – Goa is Scheduled Tribes and other Traditional Forest</p>	<ul style="list-style-type: none"> ➤ This Ministry agrees with the recommendations of the WGEEP in this para of the Report.

	<p>Dwellers (Recognition of Forest Rights) Act, 2006, but regrettably, the correct state of implementation of FRA is characterized by a series of serious problems. The WGEEP has suggested that a careful Cumulative Impact Analysis of various development activities in these tracts must be immediately undertaken, which should ensure that people's deep locality specific knowledge of environmental issues and their developmental aspirations are taken on board. To this end, the MoEF should ask the State Forest Department to proactively assist the Tribal Welfare Department in implementation of the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. The implementation of the Community Forest Resources provisions of this Act would greatly help create broad based stakes for people in safeguarding the environment of this region.</p>	
7.	<p>In para 17 of the report, while reviewing the current moratorium on fresh clearances for mining in Goa, the WGEEP has recommended an indefinite moratorium on new environmental clearances for mining in ESZ 1 and 2 in Goa and a phasing out of mining to 2016 in ESZ 1, as defined by the Panel. While examining the governance issues in Goa, the Panel has observed that the total failure to implement the community forest resources provisions of FRA in Goa has absolutely no justification. Citing a specific case of the Devapon</p>	<ul style="list-style-type: none"> ➤ In view of the lack of progress by the State Government in implementing the community forest resources provisions of FRA, as observed by the Panel; the Ministry agrees with the recommendation of the WGEEP that sanction of the Devapon Dongar mine of Caurem village in Quepem taluka of Goa, located on a hill sacred to the Velips, against serious local opposition, and without completing the implementation of FRA is thoroughly inexcusable. ➤ The MoEF should, however, investigate the matter as to how the environment clearance or forest clearance for the above-said Devapon Dongar mine was accorded without compliance with the provision of FRA and take remedial measures.

	<p>Dongar mine of Caurem village in Quepem taluka of Goa, located on a hill sacred to the Velips, a Scheduled Tribe group, the Panel has pointed out that to sanction a mine on this hill against serious local opposition, and without completing the implementation of FRA is thoroughly inexcusable.</p>	
8.	<p>In para 2 of Part II of the Report, the WGEEP, while discussing the key sectors relating to Western Ghats, in respect of the sector "Forest and Bio-diversity", has inter-alia made a number of observations, such as, -</p> <p>i) Many people have misgivings about people oriented Acts, especially, FRA;</p> <p>ii) It is imperative that we strive to implement not only the letter but also the spirit of pro-people legislations such as Joint Forest Management (JFM), PESA, Protection of Plant Variety and Farmers' Rights Act (PPVRF), Biological Diversity Act (BDA) and Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 (FRA);</p> <p>iii) All JFM areas as well as forests under exclusive village management should be claimed by the community under Section 3(1)(i) of FRA and managed as a community resource. To facilitate this process, the Forest Department should provide protection and technical support, and be responsible for ensuring compliance with sustainable use</p>	<ul style="list-style-type: none"> ➤ This Ministry agrees with the recommendation of the WGEEP that the FRA needs to be implemented not only in letter but also in the spirit. Towards this end, the Ministry has recently issued comprehensive guidelines to the State/ UT Governments on 12.7.2012 and also notified the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Amendment Rules, 2012 on 6.9.2012 to ensure better implementation of the Act. ➤ As regards the recommendation of the WGEEP that all JFM areas as well as forests under exclusive village management should be claimed by the community under Section 3(1)(i) of FRA and managed as a community resource, it may be stated that the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Amendment Rules, 2012, notified on 6.9.2012 lay down the procedure for claiming rights to community forest resource under Section 3(1)(i) of the Act. ➤ However, if the Gram Sabha or the community is not keen to take over management of JFM forests under FRA, or management claims are not accepted under FRA, the Act and the Rules framed thereunder do not permit the State Government to take <i>suo moto</i> action to place JFMs under the Gram Sabha.

	<p>and conservation regulations. In case the Gram Sabha or community is not keen to take over management of JFM forests under FRA, or management claims are not accepted under FRA, the Government should take <i>suo moto</i> action to place JFMs under the Gram Sabha;</p> <p>iv) In addition to guaranteeing that FRA is implemented in letter and spirit, three inter-related issues need to be addressed for ensuring that forest dwellers' livelihoods are supported and enriched by NTFPs, namely, how to increase NTFP production, how to improve access of the poor to NTFPs, and how to maximize their income through marketing.</p> <p>The Panel has observed that FRA has yet to be implemented in its true spirit and the State Forest Department need to be alerted to the fact that implementation of this Act is needed for future for forestry governance.</p>	
9.	<p>In para 3 of Part II of the Report, the WGEEP, while focusing on the issues of governance and proposing specific measures towards multi-centered governance in the Western Ghats has inter-alia discussed poor implementation of FRA and the reasons for the same and recommended that there is a need for a 2nd phase of FRA implementation in all States, in which primary focus is on Community Forest Rights (CFRt). Progress with CFRt implementation needs to be monitored as a special exercise, as</p>	<ul style="list-style-type: none"> ➤ The Ministry agrees with the recommendation of the WGEEP that there is a need for a 2nd phase of FRA implementation in all States, in which primary focus should be on community forest rights (CFRt). The comprehensive guidelines issued by the Ministry on 12.7.2012 and the FR Amendment Rules, 2012 notified on 6.9.2012 also focus on recognition on community forest rights. ➤ As regards monitoring of the progress of CFRt implementation, it may be stated that the Amendment Rules, 2012 notified on 6.9.2012 already prescribe a format for furnishing a quarterly report by the State Governments on the process of recognition, verification and vesting of

<p>part of the overall monitoring process by the National Forest Rights Council. A simple "how to" guide on CFRt needs to be produced by MoTA which can be adapted by State nodal agencies as appropriate, and issued in large numbers to communities and relevant officials.</p>	<p>forest rights, including community forest rights and details of Community Forest Resources being managed. The Ministry is, however, in the process of reviewing the current reporting and monitoring mechanism (including formats) on implementation of FRA and developing comprehensive Reporting Formats (for State, District and Sub-division level) by the State/ UT Governments for assessing the implementation of the Act in the light of the guidelines/ Amendment Rules notified by the Ministry.</p> <ul style="list-style-type: none"> ➤ A guide containing Frequently Asked Questions (FAQ) is also being prepared, which after finalization will be printed for circulation to States for adaptation in regional languages.
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Government of India
Ministry of Tourism
(NT Division)

C-I Hutments
Dalhousie Road
New Delhi - 110 011.

File No.5. NT(8)/2011

12th September, 2012

OFFICE MEMORANDUM

Subject : **Finalization of draft background notes for the High Level Segment of COP 11 from 17-19 October, 2012**

Reference D.O. Letter No.1/1/2010-RE(ESZ) dated 31st August, 2012 from Shri K. Kasturirangan, Member, Planning Commission, New Delhi addressed to Secretary, Ministry of Tourism requesting comments from Ministry of Tourism on the Western Ghats Ecology Expert Panel (WGEEP) Report to the High Level Working Group constituted by Ministry of Environment and Forests.

The comments from the Ministry of Tourism on the WGEEP Report were earlier communicated to Dr.G. V. Subrahmanyam, Advisor (RE & NMNH) vide letter No.3.NT(3)/2012 dated 7th August, 2012. The copy of the same is enclosed herewith.

SS/AL, RE NMNH
14/9


(S.K. Chakrabarty)
Deputy Secretary (Niche Tourism)

Shri Ajay Tyagi
Joint Secretary
Ministry of Environment and Forests
Room No.417, 4th Floor
CGO Complex, Lodhi Road
New Delhi - 110 003

Encl : As above.

Copy for Information to Shri K. Kasturirangan, Member, Planning Commission, New Delhi



भारत सरकार
पर्यटन मंत्रालय

GOVERNMENT OF INDIA
MINISTRY OF TOURISM

(NICHE TOURISM DIVISION)

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File No. 3-NT (3) 2012

Date: 7.08.2012

To
Dr. G.V. Subrahmanyam
Advisor (RE & NMNH)
Ministry of Environment and Forests
Paryavaran Bhavan
CGO Complex, Lodi Road
New Delhi -110003

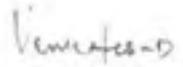
Sir,

Sub: Western Ghats Ecology Expert panel Report - reg.

Kindly refer to DO letter No. 1/1/2010-RE-ESZ of Secretary (E&F), dated 4th January, 2012 and subsequent correspondences (Letter No. 1/1/2010-RE (ESZ), dated 21st February, 2012 & Letter No. 1/1/2010-RE (ESZ), dated 1st May, 2012).

The undersigned is directed to inform you that the recommendations made by the Western Ghats Ecology Expert Panel, are similar to the Ministry of Tourism's Sustainable Tourism criteria approach. The Ministry agrees with the recommendations contained in the report. While mentioning that a special cell be constituted in the Western Ghats Ecological Authority; for considering tourism issues, the cell may have a representative of the Ministry of Tourism.

Yours faithfully,


(D. Venkatesan)
Assistant Director General

Incredible India

सि 1 जेटमेटस इन्फर्मीटी रोड अइ विल्डी 110011 (भारत) दूरवाच 011-23012804, 23014074, 23014581



No A-11020/5/2012-CCC
Government of India
Ministry of Urban Development
(Carbon Credit Cell)

202-A, C-Wing, Nirman Bhawan
New Delhi, dated 31st October, 2012

Office Memorandum

Subject:- Western Ghats Ecology Expert Panel Report – regarding

The undersigned is directed to refer to Planning Commission's D.O. letter No.1/1/2010-RE(ESZ)- dated 31.8.2012 on the subject cited above and to say that the Ministry recommends to accept the spirit of the recommendations of 'The Western Ghats Ecology Expert Panel Report' subject to the following changes in respect of enforcement arrangements:-

- The Report moots creation of a Regional Authority for the entire Western Ghats, chaired by a retired Supreme Court Judge and State Level Authority chaired by a retired High Court Judge. The fixation with 'retired judges' in such bodies needs to be revisited. If a person has retired, he/she should, as a general practice, go away from public offices. Else, Govt. should consider extending the age of retirement. Rather than retired judges as chairpersons, the other option given in the report (i.e. eminent experts) can be adopted.
- Notwithstanding, as above, the concept of proliferation of authorities need to be reviewed, as those are seriously undermining the authority of Constitutional authorities such as the Central and State Governments and the Municipalities, Panchayats, DPC and MPCs. The approach should be to make specific laws for such regulations and require the same to be enforced by the respective Constitutional authorities, subject to supervision by the respective legislative Committees in one hand and legal bodies (Courts) on the other.

(Veena Kumari Meena)
Director (LSG)
☎23062425

To
✓ Planning Commission
(Kind Attn.: Shri K. Kasturirangan, Member)
Yojana Bhawan
New Delhi-110001

Ministry of Environment & Forests
(Kind Attn.: Shri Ajay Tyagi, JS)
Room No.417, 4th Floor
CGO Complex, Lodhi Road
New Delhi-110003
(w.r.t. their D.O. No.1-4/2012-RE
dated 11.10.12)

CLC-RE-TRAIN D.O No. 1-4/2012-RE
dt- 11/10/12

✓ Ado (E&F)
P