**BEFORE THE NATIONAL GREEN TRIBUNAL SOUTH ZONE**

**BENCH AT CHENNAI**

**OriginalApplicationNo. 148 of 2021**

IN THE MATTER OF

1.D. Chandramouleswara Reddy,
Age 63 years
S/oD.Shankar Reddy,
And 8 others

..... Applicants

-Vs-

1. Union of India
Represented by its
Secretary, Ministry of
JalShakti,Shram Shakti
Bhavan,NewDelhi110001
Mail:secy-mowr@nic.in
Phone:011-24695262,24695265
and 5 others .. Respondents

**COUNTER AFFIDAVIT FILED BY THE**

**6TH RESPONDENT**

Date-6.08.2021

**M/S MADHURI DONTI REDDY**
**ADVOCATE**
**STANDING COUNCIL FOR GOVERNMENT OF**
**ANDHRA PRADESH**
**A.P. POLLUTION CONTROL BOARD**
**T.T.D. SUPREME COURT OF INDIA**
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**COUNSEL FOR 6TH RESPONDENT**

**BEFORE THE NATIONAL GREEN TRIBUNAL SOUTH**

**ZONE BENCH AT CHENNAI**

(Under Section 18(1) read with Sections 14, 15 of National Green Tribunal Act,2010)

**Original Application No. 148 of 2021**

IN THE MATTER OF

D. Chandramouleswara Reddy,
Age 63 years
S/o D. Shankar Reddy,
H.No.S-1-321,Singapore Township,
Puttampalli, YSR Kadapa district,
Cell No: 9347421276
Andhra Pradesh Pin Code: 516002
And 8 others,

..... Applicants

**-Vs-**

Union of India
Represented by its Secretary,
Ministry of Jal Shakti,
Shram Shakti Bhavan,
New Delhi - 110001
Mail:secy-mowr@nic.in
Phone:011-24695262,24695265

And 5 others

..... Respondents

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**DATE-05.08.2021**

**BEFORE THE NATIONAL GREEN TRIBUNAL SOUTH**

**ZONE BENCH AT CHENNAI**

(Under Section 18(1) read with Sections 14, 15 of National Green Tribunal Act,2010)

**Original Application No. 148 of 2021**

IN THE MATTER OF

1. D. Chandramouleswara Reddy,
   Age 63 years
   S/o D. Shankar Reddy,
   H.No.S-1-321,
   Singapore Township, Puttampalli,
   YSR Kadapa district,
   Cell No: 9347421276
   Andhra Pradesh Pin Code: 516002.

2. Avva Venkatasubba Reddy,
   Age 43 years,
   S/o A. Papi Reddy,
   H.No.2-103-A,
   Jillela village, Banaganapalli,
   Kurnool district, Cell No:
   9491410720,
   Andhra Pradesh PinCode:518176.

3. Sk. Jani Basha,
   Age 47 years,
   S/o Saida Saheb,
   H.No.2-323,
   Masidbazar, Paluvai,
   Rentachintala Mandal,
   Guntur district,
   Cell No: 9704791872
   Andhra Pradesh Pin Code: 522421.

4. Vajrala Koti Reddy,
   Age 58 years
   S/o V. GaliReddy,
   H.No. 1-16A, Rajapalem (V),
   Tripuranthakam Mandal
   Prakasam district,
   Cell No: 9866668801
   Andhra Pradesh Pin Code: 523326

5. Naraboina Venkata Rao,
   Age 37 years,
   S/o N. Venkateswarlu,
   H.No : 4-125, PataPaluvai (V),
   Rentachinthala mandal,
   Prakasam district,
   Cell No: 62814 38214
   Andhra Pradesh Pin Code: 522421.

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Secretary to Government
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A.P. Secretariat, Amaravati.

6. Siddadapu Gandhi,
   Age 49 years,
   S/o Rama Raghaviah,
   H.No. 4-237,
   Madugulapost,
   Gurazala mandal,
   Guntur district,
   Cell No: 9542093969,
   Andhra Pradesh Pin Code:522415.

7. Garikapati Venkata Ramanaidu,
   Age 41years
   S/o Garikipati Raghava Rao,
   H.No.2-14 penumalli post,
   Penumalli village,
   Pedanamandal, Krishna District,
   Cell No: 9550503347
   Andhra Pradesh Pin Code: 521369.

8. Annem Soreddy,
   Age 34 years,
   S/o Gali Reddy,
   1-201/1, Gopireddygari street,
   Tallapalli Village,
   Macherla Mandal,
   Guntur District,
   Cell No : 94417 03118
   Andhra Pradesh Pin code:522426

9. Pandipati Venkaiah,
   Age 64 years,
   S/o Pandipati Yesobu,
   H.No.4206, Valiveru (V)
   Tsunduru Mandal,
   Guntur district.
   Cell No: 8886045140
   Andhra Pradesh Pin Code: 522318

..... Applicants

-VS-

1. Union of India
   Represented by its Secretary,
   Ministry of Jal Shakti,
   Shram Shakti Bhavan,
   NewDelhi Pin Code: 110001
   Mail:secy-mowr@nic.in
   Phone:011-24695262,24695265

2. Union of India
   Represented by its Secretary,
   Union Ministry of Environment, Forest & CC
   Indira Paryavaran Bhavan,
   Jorbagh,
   New Delhi Pin Code: 110003
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   Phone:011-24695262,24695265

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Secretary to Government
Water Resources Department
A.P. Secretariat, Amaravati.

3. National Board of Wildlife,
   Represented by its Chairman,
   MoEF& CC, New Delhi. Indira
   ParyavaranBhavan, Jorbagh,
   New Delhi Pin Code: 110003.

4. Krishna River Management Board,
   Represented by its Member Secretary,
   Govt. of India,
   Ministry of Water Resources,
   5th Floor, Jalasoudha,
   ErrumManzil,
   Hyderabad Pin Code: 500082.
   Mail:membersecretary-krmb@gov.in
   Phone:040-23301858

5. State of Telangana,
   Represented by its Chief Secretary,
   Secretariat,
   Hyderabad Pin Code: 500022.
   Mail:cs@telangana.gov.in
   Phone:040-23452620

6. State of Andhra Pradesh,
   Chief Secretary,
   Secretariat,Velagapudi,
   Guntur district,
   Andhra Pradesh Pin Code: 522503.
   Mail:cs@ap.gov.in
   Phone: 0863-2444461

.....Respondents

**COUNTER AFFIDAVIT FILED BY 6TH RESPONDENT**

I, Jamjam Syamala Rao, I.A.S., son of J.Satyanarayana Murthy (Late), aged about 54 years, residing at Vijayawada, do hereby solemnly affirm and sincerely state on oath as follows:

1. I am working as Secretary to Government, Water Resources Department, A.P. Secretariat, Velagapudi, Guntur district. As such, I am well acquainted with the facts of the case. I am authorised to depose on behalf of the 6th Respondent.

2. This respondent denies various averments made in the affidavit filed in support of the application as false and incorrect except those that are specifically admitted herein in this counter affidavit.

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Secretary to Government
Water Resources Department
A.P. Secretariat, Amaravati.

3. It is submitted that the 5th Respondent State of Telangana and the 6th Respondent State of Andhra Pradesh are successor States of the erstwhile State of Andhra Pradesh by virtue of Sections 3 and 4 of Andhra Pradesh State Re-organisation Act, 2014, (Act, 2014). I submit that KWDT-I allocated 811 TMC of water to the erstwhile State of Andhra Pradesh under its gazetted decision dated: 31.05.1976 and the same is binding on the successor States. The 5th and 6th Respondent States agreed to share the allocation of 811 TMC by KWDT-I in the proportion of 299 TMC and 512 TMC respectively as per the inter-state agreements dated 18th & 19th June, 2015 before Krishna River Management Board constituted under Section 85 of Act, 2014. Initially, this agreement is for the water year 2015-16. However, the said agreement being acted upon for every subsequent water years till date. On 06.10.2020, in the 2nd Apex Council meeting, it was decided that this interim arrangement should be continued till the reference under Section 89 is answered. In addition to this, the 5th Respondent and the 6th Respondent are entitled to construct projects as mentioned in Para 10 of the Eleventh Schedule. The 5th Respondent State of Telangana is permitted to construct the on-going projects of Kalwakurthy LIS and Nettempadu LIS commenced by the erstwhile State of Andhra Pradesh. Similarly, the 6th Respondent State of Andhra Pradesh is permitted to continue the construction of the on-going projects viz., Telugu Ganga, Handri Niva Sujala Sravanthi (HNSS), Galeru Nagari Sujala Sravanthi (GNSS) and Veligonda projects. Para 7 of the Eleventh Schedule states that undertaking of any other project for which KWDT-I & II did not make any allocation, it should be treated as a "***New Project***". Agreement dated 18th & 19th June, 2015 before Krishna River Management Board is filed herewith as **Annexure-1.**

4. It is submitted that as per Sections 84(3)(ii), 85(8)(d) and Para 7 of the

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Eleventh Schedule of Act, 2014, a "*New Project*" need to be appraised by the Central Water Commission and Krishna River Management Board and basing on such appraisal, Apex Council has to sanction the New project. Without following this mandatory procedure under Act, 2014, without any allocation, the 5th Respondent State of Telangana has issued G.O. Ms. No: 105 dated: 10.06.2015 in respect of Palamuru RangaReddy LIS (PR LIS) to lift 90 TMC of flood water from foreshore of Srisailam Reservoir to create irrigation for 12.3 lakh acres new ayacut and also to meet drinking water needs. G.O. Ms. No: 105 dated: 10.06.2015 is filed herewith as **Annexure-2.**

5. It is submitted that the Ministry of Environment and Forest and Climate Change has issued EIA notification dated 14.09.2006 under Subsection 3 of Section 3 of Environment (Protection) Act 1986.In view of the admitted classification, PR LIS is one falling under category 'A' as per Para 2(i) and Annexure 1(c) appended to the said notification. Any project which is so classified on the basis of material available is obligated to undertake the compliances mandated under Para 4(ii) of the said Notification. PR LIS being one classified under item 1(c) of the Schedule to the EIA Notification is subjected to the procedure and process to be complied with under the said Notification. Para 7*(II)*(ii) of the said notification categorically mandates that a prior Environmental Clearance is required for new projects. EIA Notification dated: 14.09.2006 is filed herewith as **Annexure-3.**

6. It is submitted that the projects requiring the prior environment clearance are subject to a scrutiny indicated in Clause 7(i) comprises of 4 stages viz.,

    i) Stage (1) Screening (Only for Category 'B' projects and activities)

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ii) Stage (2) Scoping
iii) Stage (3) Public Consultation
iv) Stage (4) Appraisal

and the 5th Respondent State has adopted different strategies to evade above said procedure of 4 stages by making prevaricatere presentations to the jurisdictional Tribunals. Initially, the contention of the 5th Respondent is that PR LIS is limited only to drinking water purposes; therefore, it is not subject to the rigor of the compliances under EIA Notification, dated 14.09.2006. In O.A. No. 273 of 2016 before this Hon'ble Tribunal, the Respondent No.5, has noticed orders passed by this Hon'ble Tribunal on 17-2-2017 and had changed its stand to evade scrutiny and submission of the papers as required under EIA Notification and provisions of Act, 2014.

7. It is submitted that the farmers of the 6th Respondent State of Andhra Pradesh. have filed W.P 116/2016 under Article 32 of Constitution of India on the file of Hon'ble Supreme Court questioning the unilateral construction of new projects namely 'PR LIS'& 'Dindi LIS' without any allocation and contrary to mandatory compliances of Act, 2014. The 6th Respondent State of Andhra Pradesh filed its counter affidavit stating that the 5th Respondent State of Telangana has no right to construct PR LIS and Dindi LIS as they are 'new projects' under the provisions of Act, 2014 need to be appraised by the Central Water Commission and Krishna River Management Board and to be sanctioned by Apex Council.

8. I submit that on 20.07.2016, the Hon'ble Supreme Court directed Union of India to convene a meeting of the Apex Council as per Section 84 of Act, 2014 to examine the issue of construction of PRLIS and Dindi LIS by the 5th Respondent State of Telangana. The 1st

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Respondent convened the 1st meeting of the Apex Council on 21.09.2016 and the 5th Respondent State contended that it would not stop the construction of the projects; however, it would restrict its utilization to 299 TMC. The Apex Council could not resolve the disputes and recorded the contention of the 5th Respondent that it would restrict its utilizations to its allocation. The order dated 20-7-2016 passed by the Hon'ble Supreme Court in WP.No. 116/2016 is filed herewith as **Annexure-4.**

9. I submit that the following timeline of events make it clear the evasive strategies of the 5thRespondent State of Telangana in executing PR LIS in violation of all norms including requirement of prior Environment Clearance.

10. It is submitted that 5th Respondent State of Telangana filed an application for Environmental Clearance on 11.01.2017 for the entire PR LIS both for drinking and irrigation purposes for Lifting 90 TMC of flood water from Srisailam Reservoir by constructing canals and storage reservoirs. The 5th Respondent State of Telangana filed project notes before KWDT-II wherein, it has stated that out of 90 TMC, 83.90 TMC is for irrigation and 6.10 TMC is towards evaporation losses and drinking water requirements. The said project notes of PR LIS filed before KWDT-II is herewith filed as **Annexure-5.**

11. It is submitted that in OA 273 of 2016, one Sri Harshavardhan challenged the unilateral actions of the 5th Respondent State of Telangana is going ahead with construction of PRLIS without obtaining mandatory prior Environmental Clearances (herein after referred as EC). The 5th Respondent State of Telangana on 17.02.2017 gave an undertaking before this Hon'ble Tribunal that it will execute the project only to the extent of Drinking water component and it will

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withdraw its application for Environmental Clearance submitted to MOEF on 11.01.2017. The order dated 17.02.2017 read as follows:

> "***On behalf of Repondents Nos 2 and 3, the Chief Engineer, Palamuru Rangareddy Lift Irrigation Scheme filed an affidavit stating that the Government of Telangana would be withdrawing the application submitted for Environmental Clearance (EC) before the Ministry of Environment, Forests and Climate Change (MoEF& CC) on 11.01.2017. The affidavit also asserts that the State of Telangana would be implementing the disputed project only with regard to the supply of drinking water and not for irrigation.....***"

Later the application OA No. 273/2016 was transmitted to the Principle bench at New Delhi and renumbered as O.A 2/2018. On 22.07.2019, the case was dismissed as not pressed by the petitioner therein. In fact, such a dismissal ought not have been permitted by the Hon'ble Tribunal without verifying the nature of PR LIS and the infrastructure being created which requires several mandatory clearances to protect environment in the State of Telangana. Such an order would not operate as resjudicata as there is no adjudication on merits by this Hon'ble Tribunal.

12. It is submitted that the 5th Respondent State of Telangana submitted a fresh proposal for Environmental Clearance on 04.09.2017. The said proposal was accepted on13.09.2017 and was considered in the 8thmeeting of EAC on 22.09.2017, vide Item No.8.4. In the fresh proposal, the 5th Respondent State of Telangana bifurcated PRLIS into two phases. Phase–I is for drinking water and Phase – II is for irrigation. The 2nd Respondent has issued TOR on 11.10.2017 and additional TOR was also issued for Phase-I. The Minutes of 8th EAC

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meeting and Standard TOR and additional TOR issued by the 2nd respondent to the 5th Respondent project proponent are filed herewith as **Annexure-6& 7** respectively.

13. It is submitted that during July 2021, the 5th Respondent State of Telangana submitted Executive Summary in respect of PR LIS to the 2nd Respondent. It is clear from the said Executive Summary that in Phase – I of PR LIS, it is proposed to construct approach channels, open canals (50.490 km), tunnels (61.577 km), pump houses (5), reservoirs (6) with total storage capacity of 67.97 TMC to conduct water through various stages of lift and storing it for beneficial uses i.e., drinking water, industrial use and irrigation. The reservoirs proposed in Phase–I are Anjanagiri, Veeranjaneya, Venkatadri, Kurumurthiya, Uddandapur, K.P.Lakshmidevipalli. The total length of the Bund in respect of these reservoirs, is about 64.223 Km, which requires large quantity of soil excavated from several lakes, tanks and other agricultural fields offending several water bodies causing several environmental concerns besides causing water, noise and air pollution and Phase – II of PR LIS involves construction of thirteen main canals totaling to a length of 915 km and distribution network to serve an ayacut of 4,97,976 hectares providing water for Kharif and Rabi irrigation season.

<table>
<tr><th>Proposal submitted on 10.01.2017</th><th>Proposal submitted on 13.09.2017</th></tr>
<tr><td>Presented as an Integrated Project</td><td>Present the proposal in two phases. i.e.<br>Phase-I for drinking<br>Phase-II for irrigation</td></tr>
<tr><td>90 TMC in 60 days</td><td>90 TMC in 60 days</td></tr>
<tr><td>4,04,858 Ha (10.00 L. Acres)</td><td>4,97,976 (12.30 L.Acres)</td></tr>
<tr><td>Submergence:</td><td>Submergence:</td></tr>
<tr><td>20 Nos Hamlets</td><td rowspan="4">Not mentioned</td></tr>
<tr><td>3 Villages</td></tr>
<tr><td>24 M House holds</td></tr>
<tr><td>11025 Population</td></tr>
</table>

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| **Proposal submitted on 10.01.2017** | **Proposal submitted on 13.09.2017** |
|---|---|
| **Land Acquisition** | **Land Acquisition** |
| Non-Forest LA – 23778.96 Ha | Canals – 15,790 Ha |
| Forest LA – 229.04 Ha | |
| Under Reservoirs – 9664 Ha | |
| Conduit – 2198 Ha | |
| Canals – 12146 Ha | |
| Amarabad Tiger Reserve – 11.95 km from Forest Core area | Not mentioned |
| Buffer area – 2.56 km | |
| Eco sensitive Zone is 1.56 km away from Anjanagiri reservoir | |
| **Break up of 90 TMC** | Not mentioned |
| 8.00 Drinking | |
| 2.00 Industries | |
| 80.00 Irrigation | |

a perusal of the above table would show that under the guise of drinking water, the 5th Respondent State of Telangana is executing major part of the Irrigation Project, misleading the ministry of Environment & Forests and also this Hon'ble Tribunal.

14. It is submitted that the infrastructure sought to be created under the guise of drinking water project, involves substantial environmental issues for which, this Hon'ble Tribunal has originally stayed the execution of the project in OA No. 273/2016. The execution of the project is contemptuous as it is in violation of undertaking given before this Hon'ble Tribunal dated 17.02.2017 and same was recorded by this Hon'ble Tribunal on the even date. Executive Summary submitted by the 5th Respondent State of Telangana for Environmental clearance of PR LIS during July, 2021 is filed herewith as **Annexure-8.**

15. It is submitted that the perusal of the Pre-Feasibility Report (PFR) of PR LIS shows that Phase –I, involves construction of six major reservoirs, canals, tunnels and lifts disproportionate to limited drinking water requirement, which can be carried in a pipeline. The Phase – I works involve

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| S.No | Name of the Reservoir | Location (Village) | Length of bund (kms) | F.R.L. (m) | Capacity (TMC) | |
|---|---|---|---|---|---|---|
| 1 | Anjanagiri | Narlapur | 6.647 | 345 | 8.51 | 7.95 |
| 2 | Veeranjaneya | Yedula | 7.716 | 445 | 6.55 | 5.91 |
| 3 | Venkatadri | Vattem | 14.75 | 542 | 16.74 | 16.4 |
| 4 | Kurumurthiraya | Karivena | 13.185 | 531 | 17.34 | 16.83 |
| 5 | Udandapur | Udandapur | 15.875 | 629 | 16.03 | 15.76 |
| 6 | K.P. Lakshmidvipally | Lakshmi-devipally | 6.05 | 670 | 2.8 | 2.49 |
| **Total** | | | **64.22** | | **67.97** | **65.33** |

16. It is submitted that the infrastructure sought to be created in Phase-I of PR LIS undisputedly includes the infrastructure necessary for irrigation, which mandatorily requires prior Environmental clearance which is offending the Environment in the State of Telangana. Due to various constructions being carried out in Phase-I of PR LIS there is submergence of 20 No's hamlets, 3 villages, 2481households, 11025 population, which specifically mentioned in the proposal dated 11.01.2017 and the said was deliberately suppressed in the proposal dated 13-9-2017. In fact, the 5th respondent called for common tenders for Phase I & II for the entire scheme. However, with an intention to mislead, entered into agreements excluding the distributary canals meant for irrigation purpose. This is nothing but ingenious way of executing PR LIS without disclosing the nature and scope of the entire work. The quantities of raw materials needed for its construction and the source from which these raw materials are

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needed for the construction is procured was deliberately suppressed. Thus, the 5th respondent State licentiously has chosen to proceed with PR LIS in scant disregard to the EIA Notification dated 14.09.2006 and the powers of scrutiny consecrated in this Hon'ble Tribunal. Thus, the 5th respondent State is misleading this Hon'ble Tribunal and MoEF & CC by adopting such tactics which are condemnable. The pre-feasibility report of PR LIS submitted by the 5th respondent to the 2nd respondent is annexed herewith and marked as **Annexure-9.**

17. It is submitted that the Phase-I construction of PR LIS should be commiserate to meet a meager demand of 6.10 TMC for drinking water needs as per the project notes filed before KWDT-II on 28-6-2019. However, under the guise of constructing a drinking water project, the 5th Respondent State of Telangana is completing entire PR LIS project including irrigation demands without obtaining prior environmental clearance as mandated under EIA Notification, dated 14.09.2006.Further, every drinking water project does not require environmental clearance, is a misnomer, especially when the 5th Respondent State of Telangana is creating a huge infrastructure for irrigation and simultaneously offending hydrological, geological, structural, climatological factors of environment in the State of Telangana in all possible ways and also by wasting thousands of cores of public money.

18. It is submitted that the minutes of the 8th meeting of EAC categorically observed that ***"After deliberations and considering all the facts of the project as presented by the Project Proponent, the committee had the concerns about Techno-Economic Viability of the project. However, the EAC***

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***recommended for grant of scoping clearance/ToR for the proposed project with the following additional conditions along with standards ToR .i. The scheme in its first phase envisages lifting of 90 TMC of floodwater in 60 days during the flood season from the foreshore of the Srisailam project on Krishna River at Yellur village through five separate stages, ending at K.P. Laxmidevipally village. Therefore, water availability analysis at Yelluru village (point of drawl) during monsoon season is to be submitted to ascertain sufficiency of water available".*** By this it is clear that the TOR issued by the MoEF is for both Phase I and Phase II not just for Phase II, which is the own assumption of the 5th respondent State.

19. It is submitted that In fact, most of the drinking water needs of the 5thRespondent State of Telangana, are met through Mission Bhagiratha, utilizing a quantity 23.4 TMC of water in Krishna Basin. The present ingenious attempt by the 5th Respondent State of Telangana is with an oblique motive to complete the construction of entire PR LIS under the guise of meeting the drinking water necessity without obtaining prior Environmental clearance. The 5th Respondent State of Telangana knows that it is not entitled for such clearance as it cannot fulfill all compliances legally required to be completed under environmental laws.

20. It is submitted that the 5th Respondent State of Telangana is not submitting any detailed proposal/compliance report to the 2ndRespondent.The 5th Respondent State of Telangana by changing the scope of the Project and illegally procuring raw materials, mineral, granite and genesis, limestone, shales and basalt, clay & alluvial soil necessary for the project earthen bund of 64.223 Km

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without taking basic safeguards and approval of SEIAA/DEIAA, which is illegal and unjust.

21. It is submitted that a resident of Telangana, Sri KosigiVenkataiah has filed an O.A 147/2021 before this Hon'ble Tribunal with respect to Environmental violations by the 5th respondent State of Telangana in procuring minerals/soils for the construction of PRLIS. In the said application (OA.No. 147/2021), it is pointed out that

    i. The project proponent has been changing the scope of the project and allowing the contractors to indulge illegally to procure mineral/soil for the project earthen bund without taking basic safeguards and approval of SEIAA/DEIAA.

    ii. The TOR specifies that there is no displacement under the project. But the project authorities directed about 3000 inhabitants residing in Udandapur and Vallur villages to vacate in order to store the water under Udandapur Reservoir.

    iii. to verify the environmental violation and damage caused due to soil mining for construction of PRILS from the lakes such as Nasarullabad cheruvu, Polepally cheruvu in Jedcherla Mandal, Edgonpally cheruvu, Boorgucheruvu of Rajapur, Nallacheruvu of Kucherla village, Roppukunta lake, Tungakunta lake, Kothakunta lake of Chennavelli village in Rajapurmandal, Kuchurcheruvu, Yenmangala cheruvu, Lokirevu cheruvu, Lenkela cheruvu in Chennaredypalli village, Ippatur cheruvu in Nawabpet mandal of Mahabubunagar District in the 5th respondent State of Telangana.

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22. It is submitted that the TOR specifies that there should not be any displacement under PR LIS. However, several persons are displaced due to construction going on to store water under the six reservoirs in Phase-I itself, besides disturbing flora & fauna and several tanks& lakes due to soil mining. By virtue of the order dated 15.07.2021 passed in the above O.A, this Hon'ble Tribunal, directed an Expert Joint Committee to submit a report on the various illegalities being committed by the 5th Respondent State of Telangana. The Committee is directed to ascertain

***"(i) whether there were any violations of Environmental loss committed by respondents 2 and 4 in carrying out of the project in question***

***(ii) Whether there were doing any illegal mining without obtaining necessary permission, it so what is the quantum of mineral that had been extracted by doing such alleged illegal act and assess the value of the same and also assess damage cause to the environment on account of such alleged illegal activity and assess environmental compensation as well,***

***(iii) The committee also directed to suggest the remediation, if any required***

***(iv) whether in executing the projects, any displacement of persons have taken place as against the undertaking given by them that they are limiting the scope of the project for drinking water purpose alone and***

***(v) Violation of the terms of reference issued when the applied for environmental clearance which was later withdrawn. The committee directed to submit the report on or before27.08.2021".***

23. It is submitted that the 5th Respondent State of Telangana has obtained forest clearance from MoEF & CC vide proceedings F.No.8-43/2017-FC dated: 25.01.2019. It is only permission to deforest the proposed land for pre-construction works but not for actual construction of the project. However, PR LIS is being executed without any prior Environmental clearances and a physical inspection would disclose more offences being

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committed by the 5th Respondent State of Telangana. The construction of PRLIS is causing air, water, noise, soil, land pollution and the adverse impact on biodiversity (flora and fauna), wildlife, and socio-economic status. All these facts need to be verified and need to be collected within 10 Km radius of the main component of the project i.e. dam side and power-house side. It is also clear that baseline data for noise, water and air pollution was collected in six villages only viz., Boinpally (Ranga Reddy District), Munimoksham (Mahaboobnagar District), Mudanapuram (Wanaparthi District), Bandandiguduru (Ranga Reddy District), MedipalliKalan (Ranga Reddy District) and Yenikapalli (Ranga Reddy District). Thus, it is clear that baseline data collection is mainly from one district, whereas, PR LIS affects six districts viz., Mahabubnagar, Nagarkurnool, Rangareddy, Vikarabad and Nalgonda. Thus, the baseline data in TOR does not depict the complete picture of the quality of the air, water, and soil and land nature concerned with the entire project.

24. It is submitted that the 5th Respondent cannot construct PR LIS as there are sensitive Wildlife Sanctuary areas especially in core Amrabad Tiger Reserve in the project area, which is rich in Wildlife such as Tigers, Leopards Bears, Deer's, Peacocks etcetera. Even as per the proposal submitted on 10.01.2017 by the 5th respondent to the 1st respondent admitted that the PR LIS going through Amrabad Tiger reserve and the eco-sensitive zone is very near to the Anjanagiri reservoir. The 2nd respondent while granting the in-principle approval dated 03.04.2018 and Final/Stage-II approval dated 25.01.2019 did not consider the sensitive Wildlife Sanctuary areas which was recognized while sanctioning the environmental clearance to SLBC on 22.04.1994 vide proceedings No. GoI/MoEF/J.11016/13/8 5-I.A.1 dated 22.04.1994. In fact, these clearances need a relook by the Ministry of Forest as the 5th

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respondent misled every sanctioning authority in all possible ways.

25. It is submitted that the 5th Respondent has no right to construct PR LIS as there are Chenchu Tribes in the sensitive areas under this project and there is a special procedure to be followed when a project is displacing tribal in the agency area. Giving go by to all the mandatory requirements, the 5th respondent is constructing PR LIS contrary to the TOR, by misrepresenting the facts at every stage. The 2nd respondent while granting the in-principle/Stage-I Forest clearance approval dated 03.04.2018 and Final /Stage-II approval dated 25.01.2019 did not consider these aspects and Ministry ought not to have given the forest clearance. This Hon'ble Tribunal requires directing the Ministry to have a relook and reconsideration as it is not entitled for such forest clearance. There is no clearance from National Board of Wildlife under Wildlife (Protection) Act and without such mandatory permission; the 5th respondent has no right to proceed with the construction of PR LIS.

26. It is submitted that, further there are several components like pumping stations and reservoirs, which are situated in the vicinity of Eco Sensitive Zone and the data from these locations ought to have been collected. Thus, the data to be collected as per the TOR is not sufficient to assess the actual damage caused to biodiversity in the project area. As per TOR, drainage pattern and map of the river catchment up to the proposed site is not furnished.

27. It is submitted that the 5th Respondent State of Telangana cannot take umbrage under the State Amendment Act 30 of 2013, when Environment is being offended in several ways and it is not open for the 5th Respondent State in proceeding with construction of PR LIS under guise

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that phase I is a drinking water project and there is no necessity of prior Environmental clearance. I submit that even for Phase-I no exemption from mandatory laws can be given in view of the massive construction, which includes the components required for irrigation. Thus, Phase-I is not exclusively for drinking water alone, as admitted by the 5th respondent itself in its Executive summary for Environmental clearance of PR LIS of July, 2021.

28. It is submitted that, in fact, Krishna River Management Board vide letter dated 30.05.2020 directed the 5thRespondent as instructed by 1st respondent that not to proceed with the all the new projects which include PR LIS. In fact, in the 12th meeting of KRMB held on 04.06.2020 and in the 2nd meeting of the Apex council held on 06.10.2020 directed the 5th respondent to submit the DPR of PR LIS and to get the appraisal from CWC and KRMB. The 5th respondent never cared to submit a DPR either to CWC or to KRMB. However, offending all the binding law and mandatory procedures to be followed, the 5th respondent State is proceeding with the construction of PR LIS, hence; there is every necessity to stop the construction of the project. Since, it is clouded in secrecy at every stage.

29. It is submitted that the 5th Respondent cannot be permitted to construct PR LIS without obtaining the mandatory prior Environmental clearances under EIA Notification dated 14.09.2006 and also appraisal and sanction of New project under provisions of Act, 2014 and with such construction the 5th respondent cannot project a case for ex-post facto clearances, which is unknown to Environmental jurisprudence. In fact, ex-post facto clearances, envisaged vide EIA Notification 14.03.2017 is limited to projects in existence then i.e. on 24-7-2016 not for new projects. It does

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not apply to PR LIS and construction of PR LIS is illegal and unauthorized.

30. It is submitted that there is no water allocation for PR LIS and undertaking PR LIS without any allocations is not permissible. The water availability for the PR LIS is beyond the scope of allocations made by KWDT–I & II and also beyond the scope of provisions of Act, 2014. The 5th Respondent State of Telangana proposing to draw flood water from +800 feet level from Srisailam reservoir and the question of drawing flood water at +800 feet level does not arise. The water available at that level in Srisailam reservoir is dependable water meant for existing irrigation projects. KWDT-II distributed water of Inter-state River Krishna up to Average flows i.e., 2578 TMC, this is the theoretical upper limit for utilizable flows. Thereafter, the ongoing projects mentioned in Para 10 of the Eleventh schedule have to get water to an extent of 197.50 TMC (227.50- 30) (deducting 30 TMC under SLBC) and if any water is available over and above that, if the 5th respondent State is given any right to utilize remaining water over and above 2775 TMC (2578+197),then only it can utilize any water, if available, for this project. The 5th respondent State of Telangana due to its geographical dominance proceeding with the construction of PR LIS unilaterally without any right to draw dependable water from Srisailam reservoir surreptitiously meant for existing irrigation system.

31. It is submitted that the actual hydrology as per the Central Water Commission gauge data at various reservoir sites in executing PR LIS need to be established. After the demands of projects for which KWDT-I & II made allocations and also for ongoing projects mentioned under Para 10 of the Eleventh schedule of AP Re-organization Act, 2014 are met. The source of water cannot be shown as flood flows from Srisailam reservoir

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as a simplifier without considering mandatory compliances to be obtained, the same is illegal and unjust.

32. It is submitted that as per the guidelines of Central Water Commission for the appraisal of projects, it need to be established that the project has legal allocation and such use does not impact the allocations of respective downstream projects within the State of Telangana on river Krishna as well as the downstream projects in the 6th respondent State of Andhra Pradesh dependent on river Krishna are not affected. Even as per the check list under EIA Notification dated.14.09.2006 such impact need to be examined as any new project is constructed in the upstream would naturally changes the flow pattern available to the lowest riparian State and negatively impact the water available to the age old projects of the 6th respondent State.

33. It is submitted that the pumping station at Yelluru, Anjanagiri reservoir are within 10 Km of Amarabad Tiger Reserve / Eco Sensitivity Zone as seen from the Google maps.

34. It is submitted that as per Clause 7(III)(iii) of EIA Notification, dated 14.09.2006, a public hearing shall be conducted in the close proximity of the project and affected areas. If no proper public hearing is conducted the regulatory authority shall engage another public agency/authority to complete the process of public hearing. It has to be comprehensively assessed in respect of all affected districts and the impact on Environmental degradations. No public hearing is conducted for phase I as the 5th Respondent State fancifully assumed that no such public hearing need to be conducted for phase I. In fact, even in respect of phase I public hearing should be undertaken in all the affected districts due to unilateral construction of PR LIS. The Public hearing was announced by

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the 5th respondent State of Telangana on 08-07-2021 in respect of phase II only and scheduled to be held on 10-08-2021 is not legal, since, there is no public hearing for phase I. Thus, the public hearing should be conducted for phase I and II as well in respect of all the 5 districts, which are covered under PR LIS.

35. It is submitted that the assumption of 5th Respondent State that Phase I doesn't require Environmental Clearance is wrong as it is build up substantial Infrastructure required for irrigation component of phase II and not just for drinking water alone and Ministry's TOR is very clear and it doesn't distinguish between phase 1 and phase 2 and Additional TOR is given for Phase 1 in addition to Standard TOR. Further, the TOR of PR LIS expires on 10th October, 2021. Hence, hurriedly the 5th respondent State of Telangana called for public hearing which is not a legal compliance to the EIA Notification.

36. It is submitted that a perusal of TOR would indicate that it is meant for the entire 90 TMC and it does not say that it is for Phase – II only. In fact, Phase – II is only a minor component of execution of distributary canals from the reservoir.

37. It is submitted that a perusal of the minutes of the 8th meeting of EAC clearly disclose that imposing additional condition along with standard TOR since the scheme involved lifting 90 TMC flood water in 60 days during the flood season from the foreshore of Srisailam Reservoir of Inter-State River Krishna at Yelluru Village through 5 pumping stages. The water availability at Yelluru Village during monsoon season is to be ascertained sufficiency of water availability without affecting allocations of all the downstream projects.

38. It is submitted that in view of the above, this Hon'ble Tribunal may be

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pleased to restrain the 5th Respondent from proceeding with PR LIS without obtaining prior environmental clearances as mandated under the EIA notification, 2006, Act 6 of 2014and in contravention to the undertaking given before this Hon'ble Tribunal.

39. It is submitted that the 5th Respondent in violating all the mandatory laws and proceeding with the construction of PR LIS and try to complete the scheme by the end of December, 2021 as directed by its Chief Minister. I am here with filing photographs showing present stage of construction of PR LIS. The 5th Respondent may operate some pumps to falsely claim that the project has become operational. The pumps should not be permitted to be installed, which can draw more than 90 TMC and up to 120 TMC. If the construction of PR LIS is completed and brought into operation either fully or partially, the 6th Respondent and its inhabitants will suffer irreparable loss and injury. Photographs showing construction of PR LIS is filed herewith as **Annexure-10.**

40. It is submitted that this respondent craves leave of this Hon'ble Tribunal to raise additional counter in the course of proceedings, if required.

In the above said circumstances, it is humbly prayed that this Hon'ble Tribunal may be pleased to give appropriate directions to the 2nd respondent in pursuance of the application made by the 5th respondent; the following aspects have to be considered before either granting or rejecting the application of the 5th respondent in respect of PR LIS:

i) Air Environment:
- Changes in ambient and ground level concentrations due to total emissions from point, line and area sources
- Effect on soils, material, vegetation and human health
- Impact of emissions from DG sets used for power during the construction
- Pollution due to fuel combustion in equipment's and vehicles

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- Fugitive emissions from various sources
- Impact on microclimate

ii) Water Environment:

- Changes in surface and ground water quality.
- Step to develop pisci-culture and recreational facilities.
- Changes in hydraulic regime and downstream flow.
- Water pollution due to disposal of sewage.
- Water pollution from labor colony and washing equipment

iii) Land Environment:

- Adverse impact on land stability (a) due to considerable road construction/widening activity (b) blasting for excavation
- Changes in land use/ land cover and drainage pattern.
- Immigration of labor population.
- Changes in land quality including effects of waste disposal.
- River bank and their stability

iv) Biological Environment:

- Impact on forests, flora fauna including wildlife, migratory avi-fauna, rare and endangered species, medicinal plants etc.
- Pressure on existing natural resources.
- Deforestation and Disturbance to wildlife, habitat fragmentation and wild animal's migratory corridors.
- Compensatory afforestation-Identification of suitable native tree species for compensatory afforestation and green belt development.
- Impact on fish migration and habitat degradation due to decreased flow of water
- Impact on breeding and nesting grounds of animals and fish.

v) Socio Economic Environment:

- Impact on Locals community including demographic profile
- Impact on socio-economic status.
- Impact on human health due to water/vector borne disease.
- Impacts of blasting activity during project construction which generally destabilize the land mass and lead landslides, damage to properties and drying up of natural springs and cause noise pollution will be studied. Proper record shall be maintained of the base line information in the post project period.
- Positive as well as negative impacts likely to be occurred due to the project are to be listed.

Thus, there should be comprehensive assessment of damage to the

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Environment considering the ToR, additional ToR and also in respect of above mentioned aspects. All these have to be established before commencement of the construction of PR LIS, however, in order to avoid the scrutiny of various compliances to be made; the 5th respondent is executing the project in secrecy by misleading and misrepresenting to jurisdictional authorities.

Hence, it is prayed that this Hon'ble Tribunal may be pleased to allow the above O.A.No.148 of 2021 and pass such other order or orders as this Hon'ble Tribunal deems fit and proper.

DEPONENT

J. SYAMALA RAO, I.A.S.,
Secretary to Government
Water Resources Department
A.P. Secretariat, Amaravati.

Solemnly affirmed at Vijayawada
On this the 5th day of August 2021
and signed his name in my Presence.

BEFORE ME

ADVOCATE

PENUMAKA AJAY BABU
ADVOCATE M.A.,L.L.M.,
HIGH COURT OF A.P.
CELL:9493494444,9966370959

**Annexure-1**

**Brief record of the discussion of the meeting held on 18th and 19th June, 2015 to discuss issues related to regulation of water by Krishna River Management Board**

A meeting was held on 18th and 19th June, 2015 under the Chairmanship of Additional Secretary, MoWR,RD&GR to discuss the issues related to regulation of water use byKrishna River Management Board between Andhra Pradesh and Telangana State. In addition to the officials of Ministry of Water Resources, River Development and Ganga Rejuvenation, officials from Government of Telangana and Andhra Pradesh and Krishna River Management Board were present in the meeting. The list of participants is enclosed.

2. While welcoming the participants, Additional Secretary, MoWR, RD & GR requested the representatives of both the states to present their views in this regard.

3. The representative of Govt. of Andhra Pradesh requested to notify the projects for taking over under the jurisdiction of Krishna River Management Board urgently for the purpose of regulation of water. He also cited that at present the directives of the Board are not followed. Representative of the State of Telangana stated that before taking any decision regarding notification of projects and regulation of water, it is necessary that broad principles of water regulation and an appropriate implementation mechanism are worked out. In this regard, he highlighted that as per KWDT-I award the erstwhile State of Andhra Pradesh has been allocated 811 TMC for utilization in various projects as enbloc. However, as per the arrangement/various decisions taken by the erstwhile State of Andhra Pradesh revised allocations in both the parts of the State came to be 512 TMC in Andhra Pradesh and 299 TMC in Telangana.

4. The representative of Andhra Pradesh contested that the share of Telangana is only 279 TMC and additional 20 TMC will be available to them for Bhima Lift Project only after the completion of modernization of Krishna Delta System. The representative of Telangana contended that revised allocations statement submitted by the erstwhile Andhra Pradesh before KWDT-II has to be adhered to by both the states.

5. It was agreed in the meeting that the figures of share of the two states as mentioned in the list of projects dated 18.10.2013 (appended herewith as Annexure) may be followed as the working arrangementfor the current yearonly without prejudice to the rights of the two states about their entitlements which have been raisedor to be raised before appropriate fora.

6. The representatives of both the States agreed that they may utilize their share of waterwherever they decidesubject to availability of water at that place and without affecting the rights of other State.

7. Thereafter, project related issues were discussed and following working arrangements for the water year 2015-2016 only were agreed as a temporary measure.

***Nagarjuna Sagar Project:***

8. After detailed deliberations, it was agreed that the water share of both the States from this project would be as mentioned in the Annexure. KRMBwould duly consider the requirements of both Andhra Pradesh as well as Telangana State as per existing practicewhile regulating the water of Left Bank Canal.

9. It was agreed that while considering the demands of two states the due priority would be given to the drinking water requirements of all the areas including the twin cities of Hyderabad and Secunderabad as per Schedule XI of AP Reorganisation Act, 2014.

**Krishna Delta System**

10. As per the Tribunal award, 181.2 TMC of water has been allocated for Krishna Delta Project, i.e. Prakasham Barrage at Vijayawada. However, as per Annexure enclosed the share of Krishna Delta is 151.2 TMC.

11.The water requirements for Krishna Delta are met from intermediate contribution supplemented by NSP. In so far utilisable water yield downstream of Nagarjuna Saagar by Paleru, Munneru and Musi is concerned, Govt of Andhra Pradesh stated that this is only 20 TMC. According to representative of Govt of Telangana, this yield is 101.2 TMC. It was agreed that actual utilizable water from intermediate catchment may be taken into consideration by KRMB while determining releases to Krishna Delta. The utilizable quantity of water from the intermediate catchment downstream of Nagarjuna Sagar would be assessed by the CWC for consideration of KRMB by taking the flow data from Musi, Paleru and Munneru streams, storage in Pulichintala and measurement of actual discharges through the canals in Krishna Delta. That quantity shall be deducted from the total allocation and the same shall be supplemented through Nagarjuna Sagar Project for the irrigation and command of Krishna Delta System.

12. The representative of Govt of Andhra Pradesh mentioned that the cost of Krishna Delta Modernization should be shared by Govt of Telangana if 20 TMC of water is to be utilized for Bhima Project. Representative of Govt. of Telangana vehemently opposed this idea of cost sharing.

13. It was suggested that the water would be regulated at Nagarjuna Sagar Project duly considering the requirements of its Canal System and requirements of Krishna Delta System.

**Srisailam Reservoir Project**

14. It was noted that there is 5 TMC requirement for Chennai Water Supply (AP and TS share) through Telugu Ganga Canal and another 19 TMC requirement for SRBC. It was agreed that while making releases for power generation the committed utilisations for Nagarjuna Sagar and Srisailam Reservoir as mentioned above/in the Annexure may be ensured.

**Implementation Mechanism**

15. A Committee comprising of E-in-Cs of the two States and Member Secretary of KRMB would consider the indents raised by the project authorities

keeping in view of the overall availability of water and requirements raised by the concerned project authorities and make recommendation to KRMB. The decision taken by KRMB shall be implemented by the concerned State project authorities.

16. The above mentioned Committee will also regulate the release of water through K C Canal, Jurala and RDS as mentioned in the Annexure.

17. It was agreed that for current year the quantity of water available after allocation of 811 TMCwould be shared proportionately. Similarly, the deficit below 811 TMC would also be shared accordingly.

18 The entire arrangements agreed for the current year would be without any prejudice to the stand of both the States before any forum.

The meeting ended witha vote of thanks to the Chair.

**A.N. Das**
**Principal Secretary, WRD Govt. of Andhra Pradesh**

**S.K. Joshi**
**Principal Secretary, I&CAD**
**Govt. of Telangana**

**Dr. Amarjit Singh**
**Additional Secretary**
**Ministry of WR,RD&GR**

## Andhra Pradesh & Telangana projects in Krishna Basin

Figures in TMC

| S. No. | Name of the Project | As per Bachawat Report | Reallocation | Regionwise allocations | | | |
|---|---|---|---|---|---|---|---|
| | | | | Rayalaseema | Coastal Andhra | Telangana | Total |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| I | **Specific projects in region** | | | | | | |
| 1 | Krishna Delta | 181.20 | 152.20 | | 152.20 | | 152.20 |
| 2 | Muniyeru Project | 3.30 | 3.30 | | 3.30 | | 3.30 |
| 3 | Pakhal lake | 2.60 | 2.60 | | | 2.60 | 2.60 |
| 4 | Wyra | 3.70 | 3.70 | | | 3.70 | 3.70 |
| 5 | Palair | 4.00 | 4.00 | | | 4.00 | 4.00 |
| 6 | Dindi | 3.70 | 3.50 | | | 3.50 | 3.50 |
| 7 | Kurnool-Cuddapah Canal | 39.90 | 31.90 | 31.90 | | | 31.90 |
| 8 | Koilsagar | 3.90 | 3.90 | | | 3.90 | 3.90 |
| 9 | Tungabhadra Right Bank Low Level Canal | 29.50 | 29.50 | 29.50 | | | 29.50 |
| 10 | Tungabhadra Right Bank High Level Canal Stage-I&II | 32.50 | 32.50 | 32.50 | | | 32.50 |
| 11 | Rajolibunda Diversion Scheme | 15.90 | 15.90 | | | 15.90 | 15.90 |
| 12 | Bhairavanitippa | 4.90 | 4.90 | 4.90 | | | 4.90 |
| 13 | Musi | 9.40 | 9.40 | | | 9.40 | 9.40 |
| 14 | Lankasagar | 1.00 | 1.00 | | | 1.00 | 1.00 |
| 15 | Vaikuntapuram Pumping Scheme | 2.60 | 2.00 | | 2.00 | | 2.00 |
| 16 | Kotipallivagu | 2.00 | 2.00 | | | 2.00 | 2.00 |
| 17 | Guntur Channel | 4.00 | 4.00 | | 4.00 | | 4.00 |
| 18 | Okachettivagu | 1.90 | 1.90 | | | 1.90 | 1.90 |
| 19 | Gajuladinne | 2.00 | 2.00 | 2.00 | | | 2.00 |
| 20 | Jurala | 17.84 | 17.84 | | | 17.84 | 17.84 |
| 21 | Water supply to Twin cities of Secunderabad and Hyderabad | 3.90 | 5.70 | | | 5.70 | 5.70 |
| 22 | Minor Irrigation | 116.26 | 111.26 | 12.24 | 9.87 | 89.15 | 111.26 |
| | **Total(I)** | **486** | **445** | **113.04** | **171.37** | **160.59** | **445.00** |
| II | **Common Projects** | | | | | | |
| 23 | Nagarjunasagar Project | 281 | 280 | | 174.30 | 105.70 | 280.00 |
| 24 | Srisailam(Evaporation losses) | 33 | 33 | 11.00 | 11.00 | 11.00 | 33.00 |
| 25 | Chennai city Water Supply | | 5 | 1.66 | 1.67 | 1.67 | 5.00 |
| | **Total(II)** | **314** | **318** | **12.66** | **186.97** | **118.37** | **318.00** |

| S. No. | Name of the Project | As per Bachawat Report | Reallocation | Regionwise allocations | | | |
|---|---|---|---|---|---|---|---|
| | | | | Rayalaseema | Coastal Andhra | Telangana | Total |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| III | New Projects based on savings & return flows | | | | | | |
| 26 | Srisailam Right Branch Canal | | 19.00 | 19.00 | | | 19.00 |
| 27 | Pulichintala Project | | 9.00 | | 9.00 | | 9.00 |
| 28 | Rajiv (Bhima) Lift Scheme | | 20.00 | | | 20.00 | 20.00 |
| 29 | Return flows | 11.00 | | | | | |
| | **Total(III)** | **11.00** | **48.00** | **19.00** | **9.00** | **20.00** | **48.00** |
| | **Total(I+II+III)** | **811** | **811** | **144.70** | **367.34** | **298.96** | **811.00** |

**Note:**

1. The above statement is prepared based on the location of the projects for which allocations are made by KWDT-I.

2. Hyderabad water supply scheme was taken up with consumptive use of 3.3 TMC by making reallocations of 0.2 TMC from Dindi project, 0.6 TMC from Vikuntapuram P.S, 1.0 TMC from Nagarjunasagar project and saving of 1.50 TMC out of 3.9 TMC towards water supply to Twin cities. (Govt. of Andhra Pradesh Irr Dept GO Ms No.19 dated:5/2/2003).

3. Bhima Lift Irrigation project in Mahabubnagar District(20 TMC) and Pulichintala project(9TMC towards evaporation losses) are takenup against the savings proposed by modernizing the Krishna delta. (CWC approval vide 64$^{th}$ meeting of the Advisory Committee letter no. 10/27/96-PA(N)/502-550 dt:16-04-96).

4. Srisailam Right Branch Canal was taken up with the return flow of 11 TMC allocated by Bachawat tribunal and 8 TMC by way of savings due to modernization of K.C. canal system. (CWC approval vide 58$^{th}$ meeting of the Advisory Committee letter no. 16/27/94-PA(N) dt: 4$^{th}$ July 1994).

5. 5 TMC reallocated towards AP's contribution for Chennai water supply as per the Agreement dated 14.4.1976 among the Govt of A.P., Karnataka and Maharashtra. This 5 TMC is shown equally among three regions out of minor irrigation allocations.

6. The evaporation loss of 33 TMC for Srisailam reservoir is shown equally among three regions.

7. The allocation of Nagarjunasagar project is shown as per "Nagarjunasagar Project, Third Revised project Estimate 2000" and the evaporation loss is included in proportion to allocations.

Yours faithfully,
Sd/- dt 18.10.2013
Chief Engineer(OSD), IS & WR

For Chief Engineer(OSD)/IS & WR

## *LIST OF PARTICIPANTS*

### From Ministry of Water Resources, RD&GR

| | | |
|---|---|---|
| 1. | Dr. Amarjit Singh | Additional Secretary |
| 2 | Sh. K. Vohra | Commissioner (Indus) |
| 3. | Sh. R.K. Pachauri | Commissioner (Pen.Riv.) |
| 4. | Dr. Naresh Kumar | Sr. Joint Commissioner (Pen.Riv.) |

### Participants from KRMB

| | | |
|---|---|---|
| 1. | Sh. S.K.G. Pandit | Chairman |
| 2 | Sh. R.K. Gupta | Member Secretary |

### Participants from Govt. of Andhra Pradesh

| | | |
|---|---|---|
| 1. | Shri Aditya N.Das | Principal Secretary, WRD |
| 2 | Shri M. Venkateswara Rao | Engineer-in-Chief (Irrigation) |
| 3 | Shri D. Rama Krishna | Chief Engineer (IS&WR) |
| 4. | Sh. B. P. Venketeshwaralu | Member, TAC |
| 5 | Shri P. Rama Raju | Member, TAC |
| 6 | Shri P Ramakrishna Murthy | SE (IS & WR) |
| 7. | Sh. K.B. Gangadhar Rao | DEE |

### Participants from Govt. of Telangana

| | | |
|---|---|---|
| 1. | Sh. R. VidyaSagar Rao | Advisor, Govt. of Telangana |
| 2 | Sh. S.K. Joshi | Principal Secretary (I&CAD) |
| 3. | Sh. B.Negandra Rao | Chief Engineer (IS & WR) |
| 4. | Sh.V. Ravinder Rao | Legal Advisor |

**Annexure-2**

**GOVERNMENT OF TELANGANA**
**ABSTRACT**

PALAMURU – RANGA REDDY LIFT IRRIGATION PROJECT **-** For Lifting of flood water in 60 days from foreshore of Srisailam Reservoir in Mahabubnagar district to serve net ayacut of 10.00 Lakh acres in drought prone areas of Mahabubnagar (7.00 Lakh acres), Rangareddy (2.70 Lakh acres) and Nalgonda (0.30 Lakh acres) Districts including providing drinking water facilities to enroute villages and industrial water use excluding the ayacut under Medium and Minor Irrigation tanks - Administrative approval for an amount of Rs 35,200 crore – Accorded – Orders – Issued.

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**IRRIGATION AND CAD (PROJECTS-I) DEPARTMENT**

**G.O.MS.No. 105** **Dated:10-06-2015**
**Read:**

From the Engineer-in-Chief (Irrigation), Hyderabad, Lr No. ENC(I)/ DCE-IV/OT4/ AEE10/ CE/PRLIS/2015, Dt:04-06-2015 & 09.06.2015.

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**ORDER:**

In the reference read above, the Engineer-in-Chief (Irrigation), Hyderabad has informed that the Palamuru -Ranga Reddy Lift Irrigation Scheme envisages to irrigate upland areas of about a net ayacut of 10 lakh acres, drinking water to Hyderabad city and industrial use in Mahabubnagar, Rangareddy and Nalgonda districts, by lifting 90 TMC of flood water in 60 days during flood season ( i.e., 1.50 TMC per day) from foreshore of Srisailam Project located on Krishna river in Mahabubnagar district to Laxmidevipally(V), Kondurg (M) near Shadnagar town (from +250.00 M to +675.00m) which is the highest elevation in between Mahabubnagar and Ranga Reddy districts with 5 stage lifting and then utilizing water by gravity. The scheme contemplates enroute Irrigation under different reservoirs as per their command ability. There are five stages in the project starting from foreshore of Srisailam Reservoir and ending with K.P.Laxmidevipally Reservoir. The work is proposed to be taken up during the year 2015-16 by calling tenders on e-procurement platform.

2. The ENC has requested to accord administrative approval to the project for an amount of Rs.35,250 crore with SSR 2014-15.

3. The Government after careful examination of the proposal of the Engineer-in-Chief (Irrigation), Hyderabad hereby accord Administrative approval to the Palamuru – Rangareddy Lift Irrigation Scheme for an amount of Rs 35,200 Crore (Rupees thirty five thousand two hundred crore only).

4. The Chief Engineer(Projects), Mahabubnagar shall take necessary action accordingly.

5. This order issues with the concurrence of Finance (W&P) Department, vide their U.O. No. 3526/133/WP/A1/15, dated:08.06.2015.

**(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)**

**SHAILENDRA KUMAR JOSHI**
**PRINCIPAL SECRETARY TO GOVERNMENT**

To
The Engineer-in-Chief (Irrigation), Hyderabad
The Chief Engineer(Projects), Mahabubnagar
**Copy to:**
The Accountant General, T.S., Hyderabad.
The Director of Works & Accounts, Hyderabad.
The Finance (W&P) Dept.
The OSD to Minister for Irrigation.
The P.S. to Prl. Secretary.

**//FORWARDED :: BY ORDER//**

**SECTION OFFICER**

**Annexure-3**

**(To be published in the Gazette of India, Extraordinary, Part-II, and Section 3, Sub-section (ii)**
**MINISTRY OF ENVIRONMENT AND FORESTS**

**New Delhi 14th September, 2006**

## Notification

S.O. 1533 Whereas, a draft notification **under sub-rule (3) of Rule 5 of the Environment (Protection) Rules, 1986 for imposing** certain restrictions and prohibitions on new projects or activities, or on the expansion or modernization of existing projects or activities based on their potential environmental impacts as indicated in the Schedule to the notification, being undertaken in any part of India[1], unless prior environmental clearance has been accorded in accordance with the objectives of National Environment Policy **as approved by the Union Cabinet on 18th May, 2006** and the procedure specified in the notification, by the Central Government or the State or Union territory Level Environment Impact Assessment Authority (SEIAA), to be constituted by the Central Government in consultation with the State Government or the Union territory Administration concerned under sub-section (3) of section 3 of the Environment (Protection) Act, 1986 for the purpose of this notification, was published in the Gazette of India ,Extraordinary, Part II, section 3, sub-section (ii) vide number S.O. 1324 (E) dated the 15th September ,2005 inviting objections and suggestions from all persons likely to be affected thereby within a period of sixty days from the date on which copies of Gazette containing the said notification were made available to the public;

And whereas, copies of the said notification were made available to the public on 15th September, 2005;

And whereas, all objections and suggestions received in response to the above mentioned draft notification have been duly considered by the Central Government;

Now, therefore, in exercise of the powers conferred by sub-section (1) and clause (v) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986, read with clause (d) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986 and in supersession of the notification number S.O. 60 (E) dated the 27th January, 1994, except in respect of things done or omitted to be done before such supersession, the Central Government hereby directs that on and from the date of its publication the required construction of new projects or activities or the expansion or modernization of existing projects or activities listed in the Schedule to this notification entailing capacity addition with change in process and or technology shall be undertaken in any part of India only after the prior environmental clearance from the Central Government or as the case may be, by the State Level Environment Impact Assessment Authority, duly constituted by the Central Government under sub-section (3) of section 3 of the said Act, in accordance with the procedure specified hereinafter in this notification.

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[1]Includes the territorial waters

**2. Requirements of prior Environmental Clearance (EC):-** The following projects or activities shall require prior environmental clearance from the concerned regulatory authority, which shall hereinafter referred to be as the Central Government in the Ministry of Environment and Forests for matters falling under Category 'A' in the Schedule and at State level the State Environment Impact Assessment Authority (SEIAA) for matters falling under Category 'B' in the said Schedule, before any construction work, or preparation of land by the project management except for securing the land, is started on the project or activity:

(i) All new projects or activities listed in the Schedule to this notification;

(ii) Expansion and modernization of existing projects or activities listed in the Schedule to this notification with addition of capacity beyond the limits specified for the concerned sector, that is, projects or activities which cross the threshold limits given in the Schedule, after expansion or modernization;

(iii) Any change in product - mix in an existing manufacturing unit included in Schedule beyond the specified range.

**3. State Level Environment Impact Assessment Authority:- (1)** A State Level Environment Impact Assessment Authority hereinafter referred to as the SEIAA shall be constituted by the Central Government under sub-section (3) of section 3 of the Environment (Protection) Act, 1986 comprising of three Members including a Chairman and a Member – Secretary to be nominated by the State Government or the Union territory Administration concerned.

(2) The Member-Secretary shall be a serving officer of the concerned State Government or Union territory administration familiar with environmental laws.

(3) The other two Members shall be either a professional or expert fulfilling the eligibility criteria given in Appendix VI to this notification.

(4) One of the specified Members in sub-paragraph (3) above who is an expert in the Environmental Impact Assessment process shall be the Chairman of the SEIAA.

(5) The State Government or Union territory Administration shall forward the names of the Members and the Chairman referred in sub- paragraph 3 to 4 above to the Central Government and the Central Government shall constitute the SEIAA as an authority for the purposes of this notification within thirty days of the date of receipt of the names.

(6) The non-official Member and the Chairman shall have a fixed term of three years (from the date of the publication of the notification by the Central Government constituting the authority).

(7) All decisions of the SEIAA shall be unanimous and taken in a meeting.

**4. Categorization of projects and activities:-**

(i) All projects and activities are broadly categorized in to two categories - Category A and Category B, based on the spatial extent of potential impacts and potential impacts on human health and natural and man made resources.

(ii) All projects or activities included as Category 'A' in the Schedule, including expansion and modernization of existing projects or activities and change in product mix, shall require prior environmental clearance from the Central Government in the Ministry of Environment and Forests (MoEF) on the recommendations of an Expert Appraisal Committee (EAC) to be constituted by the Central Government for the purposes of this notification;

(iii) All projects or activities included as Category 'B' in the Schedule, including expansion and modernization of existing projects or activities as specified in sub paragraph (ii) of paragraph 2, or change in product mix as specified in sub paragraph (iii) of paragraph 2, but excluding those which fulfill the General Conditions (GC) stipulated in the Schedule, *will* require prior environmental clearance from the State/Union territory Environment Impact Assessment Authority (SEIAA). The SEIAA shall base its decision on the recommendations of a State or Union territory level Expert Appraisal Committee (SEAC) as to be constituted for in this notification. In the absence of a duly constituted SEIAA or SEAC, a Category 'B' project shall be treated as a Category 'A' project;

**5. Screening, Scoping and Appraisal Committees**:-

The same Expert Appraisal Committees (EACs) at the Central Government and SEACs (hereinafter referred to as the (EAC) and (SEAC) at the State or the Union territory level shall screen, scope and appraise projects or activities in Category 'A' and Category 'B' respectively. EAC and SEAC's shall meet at least once every month.

(a) The composition of the EAC shall be as given in Appendix VI. The SEAC at the State or the Union territory level shall be constituted by the Central Government in consultation with the concerned State Government or the Union territory Administration with identical composition;

(b) The Central Government may, with the prior concurrence of the concerned State Governments or the Union territory Administrations, constitutes one SEAC for more than one State or Union territory for reasons of administrative convenience and cost;

(c) The EAC and SEAC shall be reconstituted after every three years;

(d) The authorised members of the EAC and SEAC, concerned, may inspect any site(s) connected with the project or activity in respect of which the prior environmental clearance is sought, for the purposes of screening or scoping or appraisal, with prior notice of at least seven days to the applicant, who shall provide necessary facilities for the inspection;

(e) The EAC and SEACs shall function on the principle of collective responsibility. The Chairperson shall endeavour to reach a consensus in each case, and if consensus cannot be reached, the view of the majority shall prevail.

**6. Application for Prior Environmental Clearance (EC):-**

An application seeking prior environmental clearance in all cases shall be made in the prescribed Form 1 annexed herewith and Supplementary Form 1A, if applicable, as given in Appendix II, after the identification of prospective site(s) for the project and/or activities to which the application relates, before commencing any construction activity, or preparation of land, at the site by the applicant. The applicant shall furnish, along with the application, a copy of the pre-feasibility project report except that, in case of construction projects or activities (item 8 of the Schedule) in addition to Form 1 and the Supplementary Form 1A, a copy of the conceptual plan shall be provided, instead of the pre-feasibility report.

**7. Stages in the Prior Environmental Clearance (EC) Process for New Projects:-**

**7(i)** The environmental clearance process for new projects will comprise of a maximum of four stages, all of which may not apply to particular cases as set forth below in this notification. These four stages in sequential order are:-

- Stage (1) Screening (Only for Category 'B' projects and activities)
- Stage (2) Scoping
- Stage (3) Public Consultation
- Stage (4) Appraisal

I. **Stage (1) - Screening**:

In case of Category 'B' projects or activities, this stage will entail the scrutiny of an application seeking prior environmental clearance made in Form 1 by the concerned State level Expert Appraisal Committee (SEAC) for determining whether or not the project or activity requires further environmental studies for preparation of an Environmental Impact Assessment (EIA) for its appraisal prior to the grant of environmental clearance depending up on the nature and location specificity of the project . The projects requiring an Environmental Impact Assessment report shall be termed Category 'B1' and remaining projects shall be termed Category 'B2' and will not require an Environment Impact Assessment report. For categorization of projects into B1 or B2 except item 8 (b), the Ministry of Environment and Forests shall issue appropriate guidelines from time to time.

II. **Stage (2) - Scoping**:

(i) "Scoping": refers to the process by which the Expert Appraisal Committee in the case of Category 'A' projects or activities, and State level Expert Appraisal Committee in the case of Category 'B1' projects or activities, including applications for expansion and/or modernization and/or change in product mix of existing projects or activities, determine detailed and comprehensive Terms Of Reference (TOR) addressing all relevant environmental concerns for the preparation of an Environment Impact Assessment (EIA) Report in respect of the project or activity for which prior environmental clearance is sought. The Expert Appraisal Committee or State level Expert Appraisal Committee concerned shall determine the Terms of Reference on the basis of the information furnished in the prescribed application Form1/Form 1A including Terns of Reference proposed by the applicant, a site visit by a sub- group of Expert Appraisal Committee or State level Expert Appraisal Committee concerned only if considered necessary by the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned, Terms of Reference suggested by the applicant if furnished and other information that may be available with the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned. All projects and activities listed as Category 'B' in Item 8 of the Schedule (Construction/Township/Commercial Complexes /Housing) shall not require Scoping and will be appraised on the basis of Form 1/ Form 1A and the conceptual plan.

(ii) The Terms of Reference (TOR) shall be conveyed to the applicant by the Expert Appraisal Committee or State Level Expert Appraisal Committee as concerned within sixty days of the receipt of Form 1. In the case of Category A Hydroelectric projects Item 1(c) (i) of the Schedule the Terms of Reference shall be conveyed along with the clearance for pre-construction activities .If the Terms of Reference are not finalized and conveyed to the applicant within sixty days of the receipt of Form 1, the Terms of Reference suggested by the applicant shall be deemed as the final Terms of Reference approved for the EIA studies**.** The approved Terms of

Reference shall be displayed on the website of the Ministry of Environment and Forests and the concerned State Level Environment Impact Assessment Authority.

(iii) Applications for prior environmental clearance may be rejected by the regulatory authority concerned on the recommendation of the EAC or SEAC concerned at this stage itself. In case of such rejection, the decision together with reasons for the same shall be communicated to the applicant in writing within sixty days of the receipt of the application.

III. **Stage (3) - Public Consultation**:

(i) "Public Consultation" refers to the process by which the concerns of local affected persons and others who have plausible stake in the environmental impacts of the project or activity are ascertained with a view to taking into account all the material concerns in the project or activity design as appropriate. All Category 'A' and Category B1 projects or activities shall undertake Public Consultation, except the following:-

(a) modernization of irrigation projects (item 1(c) (ii) of the Schedule).

(b) all projects or activities located within industrial estates or parks (item 7(c) of the Schedule) approved by the concerned authorities, and which are not disallowed in such approvals.

(c) expansion of Roads and Highways (item 7 (f) of the Schedule) which do not involve any further acquisition of land.

(d) all Building /Construction projects/Area Development projects and Townships (item 8).

(e) all Category 'B2' projects and activities.

(f) all projects or activities concerning national defence and security or involving other strategic considerations as determined by the Central Government.

(ii) The Public Consultation shall ordinarily have two components comprising of:-

(a) a public hearing at the site or in its close proximity- district wise, to be carried out in the manner prescribed in Appendix IV, for ascertaining concerns of local affected persons;

(b) obtain responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity.

(iii) the public hearing at, or in close proximity to, the site(s) in all cases shall be conducted by the State Pollution Control Board (SPCB) or the Union territory Pollution Control Committee (UTPCC) concerned in the specified manner and forward the proceedings to the regulatory authority concerned within 45(forty five ) of a request to the effect from the applicant.

(iv) in case the State Pollution Control Board or the Union territory Pollution Control Committee concerned does not undertake and complete the public hearing within the specified period, and/or does not convey the proceedings of the public hearing within the prescribed period

directly to the regulatory authority concerned as above, the regulatory authority shall engage another public agency or authority which is not subordinate to the regulatory authority, to complete the process within a further period of forty five days,.

(v) If the public agency or authority nominated under the sub paragraph (iii) above reports to the regulatory authority concerned that owing to the local situation, it is not possible to conduct the public hearing in a manner which will enable the views of the concerned local persons to be freely expressed, it shall report the facts in detail to the concerned regulatory authority, which may, after due consideration of the report and other reliable information that it may have, decide that the public consultation in the case need not include the public hearing.

(vi) For obtaining responses in writing from other concerned persons having a plausible stake in the environmental aspects of the project or activity, the concerned regulatory authority and the State Pollution Control Board (SPCB) or the Union territory Pollution Control Committee (UTPCC) shall invite responses from such concerned persons by placing on their website the Summary EIA report prepared in the format given in Appendix IIIA by the applicant along with a copy of the application in the prescribed form , within seven days of the receipt of a written request for arranging the public hearing . Confidential information including non-disclosable or legally privileged information involving Intellectual Property Right, source specified in the application shall not be placed on the web site**.** The regulatory authority concerned may also use other appropriate media for ensuring wide publicity about the project or activity. The regulatory authority shall, however, make available on a written request from any concerned person the Draft EIA report for inspection at a notified place during normal office hours till the date of the public hearing. All the responses received as part of this public consultation process shall be forwarded to the applicant through the quickest available means.

(vii) After completion of the public consultation, the applicant shall address all the material environmental concerns expressed during this process, and make appropriate changes in the draft EIA and EMP. The final EIA report, so prepared, shall be submitted by the applicant to the concerned regulatory authority for appraisal. The applicant may alternatively submit a supplementary report to draft EIA and EMP addressing all the concerns expressed during the public consultation.

**IV. Stage (4) - Appraisal**:

(i) Appraisal means the detailed scrutiny by the Expert Appraisal Committee or State Level Expert Appraisal Committee of the application and other documents like the Final EIA report, outcome of the public consultations including public hearing proceedings, submitted by the applicant to the regulatory authority concerned for grant of environmental clearance. This appraisal shall be made by Expert Appraisal Committee or State Level Expert Appraisal Committee concerned in a transparent manner in a proceeding to which the applicant shall be invited for furnishing necessary clarifications in person or through an authorized representative. On conclusion of this proceeding, the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned shall make categorical recommendations to the regulatory authority concerned either for grant of prior environmental clearance on stipulated terms and conditions, or rejection of the application for prior environmental clearance, together with reasons for the same.

(ii) The appraisal of all projects or activities which are not required to undergo public consultation, or submit an Environment Impact Assessment report, shall be carried out on the basis of the prescribed application Form 1 and Form 1A as applicable, any other relevant

validated information available and the site visit wherever the same is considered as necessary by the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned.

(iii) The appraisal of an application be shall be completed by the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned within sixty days of the receipt of the final Environment Impact Assessment report and other documents or the receipt of Form 1 and Form 1 A, where public consultation is not necessary and the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee shall be placed before the competent authority for a final decision within the next fifteen days .The prescribed procedure for appraisal is given in Appendix V ;

**7(ii). Prior Environmental Clearance (EC) process for Expansion or Modernization or Change of product mix in existing projects**:

All applications seeking prior environmental clearance for expansion with increase in the production capacity beyond the capacity for which prior environmental clearance has been granted under this notification or with increase in either lease area or production capacity in the case of mining projects or for the modernization of an existing unit with increase in the total production capacity beyond the threshold limit prescribed in the Schedule to this notification through change in process and or technology or involving a change in the product –mix shall be made in Form I and they shall be considered by the concerned Expert Appraisal Committee or State Level Expert Appraisal Committee within sixty days, who will decide on the due diligence necessary including preparation of EIA and public consultations and the application shall be appraised accordingly for grant of environmental clearance.

**8.Grant or Rejection of Prior Environmental Clearance (EC):**

(i) The regulatory authority shall consider the recommendations of the EAC or SEAC concerned and convey its decision to the applicant within forty five days of the receipt of the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned or in other words within one hundred and five days of the receipt of the final Environment Impact Assessment Report, and where Environment Impact Assessment is not required, within one hundred and five days of the receipt of the complete application with requisite documents, except as provided below.

(ii) The regulatory authority shall normally accept the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned. In cases where it disagrees with the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned, the regulatory authority shall request reconsideration by the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned within forty five days of the receipt of the recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned while stating the reasons for the disagreement. An intimation of this decision shall be simultaneously conveyed to the applicant. The Expert Appraisal Committee or State Level Expert Appraisal Committee concerned, in turn, shall consider the observations of the regulatory authority and furnish its views on the same within a further period of sixty days. The decision of the regulatory authority after considering the views of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned shall be final and conveyed to the applicant by the regulatory authority concerned within the next thirty days.

(iii) In the event that the decision of the regulatory authority is not communicated to the applicant within the period specified in sub-paragraphs (i) or (ii) above, as applicable, the

applicant may proceed as if the environment clearance sought for has been granted or denied by the regulatory authority in terms of the final recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned.

(iv) On expiry of the period specified for decision by the regulatory authority under paragraph (i) and (ii) above, as applicable, the decision of the regulatory authority, and the final recommendations of the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned shall be public documents.

(v) Clearances from other regulatory bodies or authorities shall not be required prior to receipt of applications for prior environmental clearance of projects or activities, or screening, or scoping, or appraisal, or decision by the regulatory authority concerned, unless any of these is sequentially dependent on such clearance either due to a requirement of law, or for necessary technical reasons.

(vi) Deliberate concealment and/or submission of false or misleading information or data which is material to screening or scoping or appraisal or decision on the application shall make the application liable for rejection, and cancellation of prior environmental clearance granted on that basis. Rejection of an application or cancellation of a prior environmental clearance already granted, on such ground, shall be decided by the regulatory authority, after giving a personal hearing to the applicant, and following the principles of natural justice.

**9. Validity of Environmental Clearance (EC):**

The "Validity of Environmental Clearance" is meant the period from which a prior environmental clearance is granted by the regulatory authority, or may be presumed by the applicant to have been granted under sub paragraph (iv) of paragraph 7 above, to the start of production operations by the project or activity, or completion of all construction operations in case of construction projects (item 8 of the Schedule), to which the application for prior environmental clearance refers. The prior environmental clearance granted for a project or activity shall be valid for a period of ten years in the case of River Valley projects (item 1(c) of the Schedule), project life as estimated by Expert Appraisal Committee or State Level Expert Appraisal Committee subject to a maximum of thirty years for mining projects and five years in the case of all other projects and activities. However, in the case of Area Development projects and Townships [item 8(b)], the validity period shall be limited only to such activities as may be the responsibility of the applicant as a developer. This period of validity may be extended by the regulatory authority concerned by a maximum period of five years provided an application is made to the regulatory authority by the applicant within the validity period, together with an updated Form 1, and Supplementary Form 1A, for Construction projects or activities (item 8 of the Schedule). In this regard the regulatory authority may also consult the Expert Appraisal Committee or State Level Expert Appraisal Committee as the case may be.

**10. Post Environmental Clearance Monitoring:**

(i) It shall be mandatory for the project management to submit half-yearly compliance reports in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.

(ii) All such compliance reports submitted by the project management shall be public documents. Copies of the same shall be given to any person on application to the concerned regulatory authority. The latest such compliance report shall also be displayed on the web site of the concerned regulatory authority.

**11. Transferability of Environmental Clearance (EC):**

A prior environmental clearance granted for a specific project or activity to an applicant may be transferred during its validity to another legal person entitled to undertake the project or activity on application by the transferor, or by the transferee with a written "no objection" by the transferor, to, and by the regulatory authority concerned, on the same terms and conditions under which the prior environmental clearance was initially granted, and for the same validity period. No reference to the Expert Appraisal Committee or State Level Expert Appraisal Committee concerned is necessary in such cases.

**12. Operation of EIA Notification, 1994, till disposal of pending cases:**

From the date of final publication of this notification the Environment Impact Assessment (EIA) notification number S.O.60 (E) dated 27th January, 1994 is hereby superseded, except in suppression of the things done or omitted to be done before such suppression to the extent that in case of all or some types of applications made for prior environmental clearance and pending on the date of final publication of this notification, the Central Government may relax any one or all provisions of this notification except the list of the projects or activities requiring prior environmental clearance in Schedule I , or continue operation of some or all provisions of the said notification, for a period not exceeding one year from the date of issue of this notification.

**[No. J-11013/56/2004-IA-II (I)]**

**(R.CHANDRAMOHAN)**
**JOINT SECRETARY TO THE GOVERNMENT OF INDIA**

**SCHEDULE**

**(See paragraph 2 and 7)**

**LIST OF PROJECTS OR ACTIVITIES REQUIRING PRIOR ENVIRONMENTAL CLEARANCE**

| **Project or Activity** | | **Category with threshold limit** | | **Conditions if any** |
|---|---|---|---|---|
| | | **A** | **B** | |
| **1** | | **Mining, extraction of natural resources and power generation (for a specified production capacity)** | | |
| **(1)** | (2) | (3) | (4) | (5) |
| **1(a)** | Mining of minerals | ≥ 50 ha. of mining lease area<br><br>Asbestos mining irrespective of mining area | <50 ha<br>≥ 5 ha .of mining lease area. | General Condition shall apply<br>Note<br>Mineral prospecting (not involving drilling) are exempted provided the concession areas have got previous clearance for physical survey |
| **1(b)** | Offshore and onshore oil and gas exploration, development & production | All projects | | Note<br>Exploration Surveys (not involving drilling) are exempted provided the concession areas have got previous clearance for physical survey |
| **1(c)** | River Valley projects | (i) ≥ 50 MW hydroelectric power generation;<br>(ii) ≥ 10,000 ha. of culturable command area | (i) < 50 MW ≥ 25 MW hydroelectric power generation;<br>(ii) < 10,000 ha. of culturable command area | General Condition shall apply |
| **1(d)** | Thermal Power Plants | ≥ 500 MW (coal/lignite/naphta & gas based);<br>≥ 50 MW (Pet coke diesel and all other fuels -) | < 500 MW (coal/lignite/naptha & gas based);<br><50 MW<br>≥ 5MW (Pet coke ,diesel and all other fuels ) | General Condition shall apply |

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| **1(e)** | Nuclear power projects and processing of nuclear fuel | All projects | - | |
| **2** | | **Primary Processing** | | |
| **2(a)** | Coal washeries | ≥ 1 million ton/annum throughput of coal | <1million ton/annum throughput of coal | General Condition shall apply<br><br>(If located within mining area the proposal shall be appraised together with the mining proposal) |
| **2 (b)** | Mineral beneficiation | ≥ 0.1million ton/annum mineral throughput | < 0.1million ton/annum mineral throughput | General Condition shall apply<br><br>(Mining proposal with Mineral beneficiation shall be appraised together for grant of clearance) |

| | | | | |
|---|---|---|---|---|
| **3** | | **Materials Production** | | |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| **3(a)** | Metallurgical industries (ferrous & non ferrous) | a)Primary metallurgical industry<br><br>All projects | | |
| | | b) Sponge iron manufacturing<br>≥ 200TPD | Sponge iron manufacturing<br><200TPD | General Condition shall apply for Sponge iron manufacturing |
| | | c)Secondary metallurgical processing industry | Secondary metallurgical processing industry | |
| | | All toxic and heavy metal producing units<br>≥ 20,000 tonnes /annum | i.)All toxic andheavymetal producing units<br><20,000 tonnes /annum | |
| | | - | ii.)All other non –toxic secondary metallurgical processing industries<br><br>>5000 tonnes/annum | |
| **3( b)** | Cement plants | ≥ 1.0 million tonnes/annum production capacity | <1.0 million tonnes/annum production capacity. All Stand alone grinding units | General Condition shall apply |

| | | | | |
|---|---|---|---|---|
| **4** | | **Materials Processing** | | |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| **4(a)** | Petroleum refining industry | All projects | - | - |
| **4(b)** | Coke oven plants | ≥2,50,000 tonnes/annum<br>- | <2,50,000 &<br>≥25,000 tonnes/annum | - |
| **4(c )** | Asbestos milling and asbestos based products | All projects | - | - |
| **4(d)** | Chlor-alkali industry | ≥300 TPD production capacityor a unit located out side the notified industrial area/ estate | <300 TPD production capacity<br>and located within a notified industrial area/ estate | Specific Condition shall apply<br><br>No new Mercury Cell based plants will be permitted and existing units converting to membrane cell technology are exempted from this Notification |
| **4(e)** | Soda ash Industry | All projects | - | - |
| **4(f)** | Leather/skin/hide processing industry | New projects outside the industrial area or expansion of existing units out side the industrial area | All new or expansion of projects located within a notified industrial area/ estate | Specific condition shall apply |
| **5** | | **Manufacturing/Fabrication** | | |
| **5(a)** | Chemical fertilizers | All projects | - | - |
| **5(b)** | Pesticides industry and pesticide specific intermediates (excluding formulations) | All units producing technical grade pesticides | - | - |

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| **5(c)** | Petro-chemical complexes (industries based on processing of petroleum fractions & natural gas and/or reforming to aromatics) | All projects<br>- | - | - |
| **5(d)** | Manmade fibres manufacturing | Rayon | Others | General Condition shall apply |
| **5(e)** | Petrochemical based processing (processes other than cracking & reformation and not covered under the complexes) | Located out side the notified industrial area/ estate<br>- | Located in a notified industrial area/ estate | Specific Condition shall apply |
| **5(f)** | Synthetic organic chemicals industry (dyes & dye intermediates; bulk drugs and intermediates excluding drug formulations; synthetic rubbers; basic organic chemicals, other synthetic organic chemicals and chemical intermediates) | Located out side the notified industrial area/ estate | Located in a notified industrial area/ estate | Specific Condition shall apply |
| **5(g)** | Distilleries | (i)All Molasses based distilleries<br><br>(ii) All Cane juice/ non-molasses based distilleries ≥30 KLD | All Cane juice/non-molasses based distilleries – <30 KLD | General Condition shall apply |
| **5(h)** | Integrated paint industry | - | All projects | General Condition shall apply |

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| **5(i)** | Pulp & paper industry excluding manufacturing of paper from waste paper and manufacture of paper from ready pulp with out bleaching | Pulp manufacturing and<br><br>Pulp& Paper manufacturing industry<br>- | Paper manufacturing industry without pulp manufacturing | General Condition shall apply |
| **5(j)** | Sugar Industry | -<br>- | ≥ 5000 tcd cane crushing capacity | General Condition shall apply |
| **5(k)** | Induction/arc furnaces/cupola furnaces 5TPH or more | -<br>- | All projects | General Condition shall apply |
| **6** | | **Service Sectors** | | |
| **6(a)** | Oil & gas transportation pipe line (crude and refinery/ petrochemical products)**,** passing through national parks /sanctuaries/coral reefs /ecologically sensitive areas including LNG Terminal | All projects<br>- | | - |

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| **6(b)** | Isolated storage & handling of hazardous chemicals (As per threshold planning quantity indicated in column 3 of schedule 2 & 3 of MSIHC Rules 1989 amended 2000) | - | All projects | General Condition shall apply |
| **7** | | **Physical Infrastructure including Environmental Services** | | |
| **7(a)** | Air ports | All projects | - | - |
| **7(b)** | All ship breaking yards including ship breaking units | All projects | - | - |
| **7(c)** | Industrial estates/ parks/ complexes/ areas, export processing Zones (EPZs), Special Economic Zones (SEZs), Biotech Parks, Leather Complexes. | If at least one industry in the proposed industrial estate falls under the Category A, entire industrial area shall be treated as Category A, irrespective of the area**.**<br><br>Industrial estates with area greater than 500 ha. and housing at least one Category B industry. | -Industrial estates housing at least one Category B industry and area <500 ha.<br><br>Industrial estates of area> 500 ha. and not housing any industry belonging to Category A or B. | Special condition shall apply<br><br>Note:<br>Industrial Estate of area below 500 ha. and not housing any industry of category A or B does not require clearance**.** |
| **7(d)** | Common hazardous waste treatment, storage and disposal facilities (TSDFs) | All integrated facilities having incineration &landfill or incineration alone | All facilities having land fill only | General Condition shall apply |

| (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|
| **7(e)** | Ports, Harbours | ≥ 5 million TPA of cargo handling capacity (excluding fishing harbours) | < 5 million TPA of cargo handling capacity and/or ports/ harbours ≥10,000 TPA of fish handling capacity | General Condition shall apply |
| **7(f)** | Highways | i) New National High ways; and<br><br>ii) Expansion of National High ways greater than 30 KM, involving additional right of way greater than 20m involving land acquisition and passing through more than one State. | i) New State High ways; and<br><br>ii) Expansion of National / State Highways greater than 30 km involving additional right of way greater than 20m involving land acquisition. | General Condition shall apply |
| **7(g)** | Aerial ropeways | | All projects | General Condition shall apply |
| **7(h)** | Common Effluent Treatment Plants (CETPs) | | All projects | General Condition shall apply |
| **7(i)** | Common Municipal Solid Waste Management Facility (CMSWMF) | | All projects | General Condition shall apply |

| (1) | (2) | ~~(3)~~ | (4) | (5) |
|---|---|---|---|---|
| **8** | | **Building /Construction projects/Area Development projects and Townships** | | |
| **8(a)** | Building and Construction projects | | ≥20000 sq.mtrs and <1,50,000 sq.mtrs. of built-up area# | #(built up area for covered construction; in the case of facilities open to the sky, it will be the activity area ) |
| **8(b)** | Townships and Area Development projects. | | Covering an area ≥ 50 ha and or built up area ≥1,50,000 sq .mtrs ++ | ++All projects under Item 8(b) shall be appraised as Category B1 |

**Note:-**

**General Condition (GC):**

Any project or activity specified in Category 'B' will be treated as Category A, if located in whole or in part within 10 km from the boundary of: (i) Protected Areas notified under the Wild Life (Protection) Act, 1972, (ii) Critically Polluted areas as notified by the Central Pollution Control Board from time to time, (iii) Notified Eco-sensitive areas, (iv) inter-State boundaries and international boundaries.

**Specific Condition (SC):**

If any Industrial Estate/Complex / Export processing Zones /Special Economic Zones/Biotech Parks / Leather Complex with homogeneous type of industries such as Items 4(d), 4(f), 5(e), 5(f), or those Industrial estates with pre –defined set of activities (not necessarily homogeneous, obtains prior environmental clearance, individual industries including proposed industrial housing within such estates /complexes will not be required to take prior environmental clearance, so long as the Terms and Conditions for the industrial estate/complex are complied with (Such estates/complexes must have a clearly identified management with the legal responsibility of ensuring adherence to the Terms and Conditions of prior environmental clearance, who may be held responsible for violation of the same throughout the life of the complex/estate).

**APPENDIX I**

**(See paragraph – 6)**

**FORM 1**

**(I) Basic Information**

Name of the Project:

Location / site alternatives under consideration:

Size of the Project: *

Expected cost of the project:

Contact Information:

Screening Category:

- *Capacity corresponding to sectoral activity (such as production capacity for manufacturing, mining lease area and production capacity for mineral production, area for mineral exploration, length for linear transport infrastructure, generation capacity for power generation etc.,)*

**(II) Activity**

1. **Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)**

| S.No. | Information/Checklist confirmation | Yes/No | Details thereof (with approximate quantities /rates, wherever possible) with source of information data |
|---|---|---|---|
| 1.1 | Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan) | | |
| 1.2 | Clearance of existing land, vegetation and buildings? | | |
| 1.3 | Creation of new land uses? | | |
| 1.4 | Pre-construction investigations e.g. bore houses, soil testing? | | |
| 1.5 | Construction works? | | |

| | | | |
|---|---|---|---|
| 1.6 | Demolition works? | | |
| 1.7 | Temporary sites used for construction works or housing of construction workers? | | |
| 1.8 | Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations | | |
| 1.9 | Underground works including mining or tunneling? | | |
| 1.10 | Reclamation works? | | |
| 1.11 | Dredging? | | |
| 1.12 | Offshore structures? | | |
| 1.13 | Production and manufacturing processes? | | |
| 1.14 | Facilities for storage of goods or materials? | | |
| 1.15 | Facilities for treatment or disposal of solid waste or liquid effluents? | | |
| 1.16 | Facilities for long term housing of operational workers? | | |
| 1.17 | New road, rail or sea traffic during construction or operation? | | |
| 1.18 | New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc? | | |
| 1.19 | Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements? | | |
| 1.20 | New or diverted transmission lines or pipelines? | | |
| 1.21 | Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers? | | |
| 1.22 | Stream crossings? | | |
| 1.23 | Abstraction or transfers of water form ground or surface waters? | | |
| 1.24 | Changes in water bodies or the land surface affecting drainage or run-off? | | |

| | | | |
|---|---|---|---|
| 1.25 | Transport of personnel or materials for construction, operation or decommissioning? | | |
| 1.26 | Long-term dismantling or decommissioning or restoration works? | | |
| 1.27 | Ongoing activity during decommissioning which could have an impact on the environment? | | |
| 1.28 | Influx of people to an area in either temporarily or permanently? | | |
| 1.29 | Introduction of alien species? | | |
| 1.30 | Loss of native species or genetic diversity? | | |
| 1.31 | Any other actions? | | |

2. **Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):**

| **S.No.** | **Information/checklist confirmation** | **Yes/No** | **Details thereof (with approximate quantities /rates, wherever possible) with source of information data** |
|---|---|---|---|
| 2.1 | Land especially undeveloped or agricultural land (ha) | | |
| 2.2 | Water (expected source & competing users) unit: KLD | | |
| 2.3 | Minerals (MT) | | |
| 2.4 | Construction material – stone, aggregates, and / soil (expected source – MT) | | |
| 2.5 | Forests and timber (source – MT) | | |
| 2.6 | Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW) | | |
| 2.7 | Any other natural resources (use appropriate standard units) | | |

**3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.**

| S.No. | Information/Checklist confirmation | Yes/No | Details thereof (with approximate quantities/rates, wherever possible) with source of information data |
|---|---|---|---|
| 3.1 | Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies) | | |
| 3.2 | Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases) | | |
| 3.3 | Affect the welfare of people e.g. by changing living conditions? | | |
| 3.4 | Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc., | | |
| 3.5 | Any other causes | | |

**4. Production of solid wastes during construction or operation or decommissioning (MT/month)**

| S.No. | Information/Checklist confirmation | Yes/No | Details thereof (with approximate quantities/rates, wherever possible) with source of information data |
|---|---|---|---|
| 4.1 | Spoil, overburden or mine wastes | | |
| 4.2 | Municipal waste (domestic and or commercial wastes) | | |
| 4.3 | Hazardous wastes (as per Hazardous Waste Management Rules) | | |

| | | | |
|---|---|---|---|
| 4.4 | Other industrial process wastes | | |
| 4.5 | Surplus product | | |
| 4.6 | Sewage sludge or other sludge from effluent treatment | | |
| 4.7 | Construction or demolition wastes | | |
| 4.8 | Redundant machinery or equipment | | |
| 4.9 | Contaminated soils or other materials | | |
| 4.10 | Agricultural wastes | | |
| 4.11 | Other solid wastes | | |

**5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)**

| **S.No.** | **Information/Checklist confirmation** | **Yes/No** | **Details thereof (with approximate quantities/rates, wherever possible) with source of information data** |
|---|---|---|---|
| 5.1 | Emissions from combustion of fossil fuels from stationary or mobile sources | | |
| 5.2 | Emissions from production processes | | |
| 5.3 | Emissions from materials handling including storage or transport | | |
| 5.4 | Emissions from construction activities including plant and equipment | | |
| 5.5 | Dust or odours from handling of materials including construction materials, sewage and waste | | |

| | | | |
|---|---|---|---|
| 5.6 | Emissions from incineration of waste | | |
| 5.7 | Emissions from burning of waste in open air (e.g. slash materials, construction debris) | | |
| 5.8 | Emissions from any other sources | | |

## 6. Generation of Noise and Vibration, and Emissions of Light and Heat:

| S.No. | Information/Checklist confirmation | Yes/No | Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data |
|---|---|---|---|
| 6.1 | From operation of equipment e.g. engines, ventilation plant, crushers | | |
| 6.2 | From industrial or similar processes | | |
| 6.3 | From construction or demolition | | |
| 6.4 | From blasting or piling | | |
| 6.5 | From construction or operational traffic | | |
| 6.6 | From lighting or cooling systems | | |
| 6.7 | From any other sources | | |

**7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:**

| S.No. | Information/Checklist confirmation | Yes/No | Details thereof (with approximate quantities/rates, wherever possible) with source of information data |
|---|---|---|---|
| 7.1 | From handling, storage, use or spillage of hazardous materials | | |
| 7.2 | From discharge of sewage or other effluents to water or the land (expected mode and place of discharge) | | |
| 7.3 | By deposition of pollutants emitted to air into the land or into water | | |
| 7.4 | From any other sources | | |
| 7.5 | Is there a risk of long term build up of pollutants in the environment from these sources? | | |

**8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment**

| S.No. | Information/Checklist confirmation | Yes/No | Details thereof (with approximate quantities/rates, wherever possible) with source of information data |
|---|---|---|---|
| 8.1 | From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances | | |
| 8.2 | From any other causes | | |
| 8.3 | Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)? | | |

**9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality**

| S. No. | Information/Checklist confirmation | Yes/No | Details thereof (with approximate quantities/rates, wherever possible) with source of information data |
|---|---|---|---|
| 9.1 | Lead to development of supporting. lities, ancillary development or development stimulated by the project which could have impact on the environment e.g.:<br>• Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.)<br>• housing development<br>• extractive industries<br>• supply industries<br>• other | | |
| 9.2 | Lead to after-use of the site, which could havean impact on the environment | | |
| 9.3 | Set a precedent for later developments | | |
| 9.4 | Have cumulative effects due to proximity to other existing or planned projects with similar effects | | |

**(III) Environmental Sensitivity**

| S.No. | Areas | Name/ Identity | Aerial distance (within 15 km.) Proposed project location boundary |
|---|---|---|---|
| 1 | Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value | | |

| | | | |
|---|---|---|---|
| 2 | Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests | | |
| 3 | Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration | | |
| 4 | Inland, coastal, marine or underground waters | | |
| 5 | State, National boundaries | | |
| 6 | Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas | | |
| 7 | Defence installations | | |
| 8 | Densely populated or built-up area | | |
| 9 | Areas occupied by sensitive man-made land uses *(hospitals, schools, places of worship, community facilities)* | | |
| 10 | Areas containing important, high quality or scarce resources *(ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)* | | |
| 11 | Areas already subjected to pollution or environmental damage. *(those where existing legal environmental standards are exceeded)* | | |
| 12 | Areas susceptible to natural hazard which could cause the project to present environmental problems (*earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions*) | | |

**(IV). Proposed Terms of Reference for EIA studies**

## APPENDIX II

**(See paragraph 6)**

**FORM-1 A (only for construction projects listed under item 8 of the Schedule)**

**CHECK LIST OF ENVIRONMENTAL IMPACTS**

**(Project proponents are required to provide full information and wherever necessary attach explanatory notes with the Form and submit along with proposed environmental management plan & monitoring programme)**

### 1. LAND ENVIRONMENT

**(Attach panoramic view of the project site and the vicinity)**

1.1. Will the existing landuse get significantly altered from the project that is not consistent with the surroundings? (Proposed landuse must conform to the approved Master Plan / Development Plan of the area. Change of landuse if any and the statutory approval from the competent authority be submitted). Attach Maps of (i) site location, (ii) surrounding features of the proposed site (within 500 meters) and (iii)the site (indicating levels & contours) to appropriate scales. If not available attach only conceptual plans.

1.2. List out all the major project requirements in terms of the land area, built up area, water consumption, power requirement, connectivity, community facilities, parking needs etc.

1.3. What are the likely impacts of the proposed activity on the existing facilities adjacent to the proposed site? (Such as open spaces, community facilities, details of the existing landuse, disturbance to the local ecology).

1.4. Will there be any significant land disturbance resulting in erosion, subsidence & instability? (Details of soil type, slope analysis, vulnerability to subsidence, seismicity etc may be given).

1.5. Will the proposal involve alteration of natural drainage systems? (Give details on a contour map showing the natural drainage near the proposed project site)

1.6. What are the quantities of earthwork involved in the construction activity-cutting, filling, reclamation etc. (Give details of the quantities of earthwork involved, transport of fill materials from outside the site etc.)

1.7. Give details regarding water supply, waste handling etc during the construction period.

1.8. Will the low lying areas & wetlands get altered? (Provide details of how low lying and wetlands are getting modified from the proposed activity)

1.9. Whether construction debris & waste during construction cause health hazard? (Give quantities of various types of wastes generated during construction including the construction labour and the means of disposal)

### 2. WATER ENVIRONMENT

2.1. Give the total quantity of water requirement for the proposed project with the breakup of requirements for various uses. How will the water requirement met? State the sources & quantities and furnish a water balance statement.

2.2. What is the capacity (dependable flow or yield) of the proposed source of water?

2.3. What is the quality of water required, in case, the supply is not from a municipal source? (Provide physical, chemical, biological characteristics with class of water quality)

2.4. How much of the water requirement can be met from the recycling of treated wastewater? (Give the details of quantities, sources and usage)

2.5. Will there be diversion of water from other users? (Please assess the impacts of the project on other existing uses and quantities of consumption)

2.6. What is the incremental pollution load from wastewater generated from the proposed activity? (Give details of the quantities and composition of wastewater generated from the proposed activity)

2.7. Give details of the water requirements met from water harvesting? Furnish details of the facilities created.

2.8. What would be the impact of the land use changes occurring due to the proposed project on the runoff characteristics (quantitative as well as qualitative) of the area in the post construction phase on a long term basis? Would it aggravate the problems of flooding or water logging in any way?

2.9. What are the impacts of the proposal on the ground water? (Will there be tapping of ground water; give the details of ground water table, recharging capacity, and approvals obtained from competent authority, if any)

2.10. What precautions/measures are taken to prevent the run-off from construction activities polluting land & aquifers? (Give details of quantities and the measures taken to avoid the adverse impacts)

2.11. How is the storm water from within the site managed?(State the provisions made to avoid flooding of the area, details of the drainage facilities provided along with a site layout indication contour levels)

2.12. Will the deployment of construction labourers particularly in the peak period lead to unsanitary conditions around the project site (Justify with proper explanation)

2.13. What on-site facilities are provided for the collection, treatment & safe disposal of sewage? (Give details of the quantities of wastewater generation, treatment capacities with technology & facilities for recycling and disposal)

2.14. Give details of dual plumbing system if treated waste used is used for flushing of toilets or any other use.

**3. VEGETATION**

3.1. Is there any threat of the project to the biodiversity? (Give a description of the local ecosystem with it's unique features, if any)

3.2. Will the construction involve extensive clearing or modification of vegetation? (Provide a detailed account of the trees & vegetation affected by the project)

3.3. What are the measures proposed to be taken to minimize the likely impacts on important site features (Give details of proposal for tree plantation, landscaping, creation of water bodies etc along with a layout plan to an appropriate scale)

**4. FAUNA**

4.1. Is there likely to be any displacement of fauna- both terrestrial and aquatic or creation of barriers for their movement? Provide the details.

4.2. Any direct or indirect impacts on the avifauna of the area? Provide details.

4.3. Prescribe measures such as corridors, fish ladders etc to mitigate adverse impacts on fauna

**5. AIR ENVIRONMENT**

5.1. Will the project increase atmospheric concentration of gases & result in heat islands? (Give details of background air quality levels with predicted values based on dispersion models taking into account the increased traffic generation as a result of the proposed constructions)

5.2. What are the impacts on generation of dust, smoke, odorous fumes or other hazardous gases? Give details in relation to all the meteorological parameters.

5.3. Will the proposal create shortage of parking space for vehicles? Furnish details of the present level of transport infrastructure and measures proposed for improvement including the traffic management at the entry & exit to the project site.

5.4. Provide details of the movement patterns with internal roads, bicycle tracks, pedestrian pathways, footpaths etc., with areas under each category.

5.5. Will there be significant increase in traffic noise & vibrations? Give details of the sources and the measures proposed for mitigation of the above.

5.6. What will be the impact of DG sets & other equipment on noise levels & vibration in & ambient air quality around the project site? Provide details.

**6. AESTHETICS**

6.1. Will the proposed constructions in any way result in the obstruction of a view, scenic amenity or landscapes? Are these considerations taken into account by the proponents?

6.2. Will there be any adverse impacts from new constructions on the existing structures? What are the considerations taken into account?

6.3. Whether there are any local considerations of urban form & urban design influencing the design criteria? They may be explicitly spelt out.

6.4. Are there any anthropological or archaeological sites or artefacts nearby? State if any other significant features in the vicinity of the proposed site have been considered.

**7. SOCIO-ECONOMIC ASPECTS**

7.1. Will the proposal result in any changes to the demographic structure of local population? Provide the details.

7.2. Give details of the existing social infrastructure around the proposed project.

7.3. Will the project cause adverse effects on local communities, disturbance to sacred sites or other cultural values? What are the safeguards proposed?

**8. BUILDING MATERIALS**

8.1. May involve the use of building materials with high-embodied energy. Are the construction materials produced with energy efficient processes? (Give details of energy conservation measures in the selection of building materials and their energy efficiency)

8.2. Transport and handling of materials during construction may result in pollution, noise & public nuisance. What measures are taken to minimize the impacts?

8.3. Are recycled materials used in roads and structures? State the extent of savings achieved?

8.4. Give details of the methods of collection, segregation & disposal of the garbage generated during the operation phases of the project.

**9. ENERGY CONSERVATION**

9.1. Give details of the power requirements, source of supply, backup source etc. What is the energy consumption assumed per square foot of built-up area? How have you tried to minimize energy consumption?

9.2. What type of, and capacity of, power back-up to you plan to provide?

9.3. What are the characteristics of the glass you plan to use? Provide specifications of its characteristics related to both short wave and long wave radiation?

9.4. What passive solar architectural features are being used in the building? Illustrate the applications made in the proposed project.

9.5. Does the layout of streets & buildings maximise the potential for solar energy devices? Have you considered the use of street lighting, emergency lighting and solar hot water systems for use in the building complex? Substantiate with details.

9.6. Is shading effectively used to reduce cooling/heating loads? What principles have been used to maximize the shading of Walls on the East and the West and the Roof? How much energy saving has been effected?

9.7. Do the structures use energy-efficient space conditioning, lighting and mechanical systems? Provide technical details. Provide details of the transformers and motor efficiencies, lighting intensity and air-conditioning load assumptions? Are you using CFC and HCFC free chillers? Provide specifications.

9.8. What are the likely effects of the building activity in altering the micro-climates? Provide a self assessment on the likely impacts of the proposed construction on creation of heat island & inversion effects?

9.9. What are the thermal characteristics of the building envelope? (a) roof; (b) external walls; and (c) fenestration? Give details of the material used and the U-values or the R values of the individual components.

9.10. What precautions & safety measures are proposed against fire hazards? Furnish details of emergency plans.

9.11. If you are using glass as wall material provides details and specifications including emissivity and thermal characteristics.

9.12. What is the rate of air infiltration into the building? Provide details of how you are mitigating the effects of infiltration.

9.13. To what extent the non-conventional energy technologies are utilised in the overall energy consumption? Provide details of the renewable energy technologies used.

**10. Environment Management Plan**

The Environment Management Plan would consist of all mitigation measures for each item wise activity to be undertaken during the construction, operation and the entire life cycle to minimize adverse environmental impacts as a result of the activities of the project. It would also delineate the environmental monitoring plan for compliance of various environmental regulations. It will state the steps to be taken in case of emergency such as accidents at the site including fire.

## APPENDIX III

**(See paragraph 7**

## GENERIC STRUCTURE OF ENVIRONMENTAL IMPACT ASSESSENT DOCUMENT

| S.NO | EIA STRUCTURE | CONTENTS |
|---|---|---|
| 1. | Introduction | • Purpose of the report<br>• Identification of project & project proponent<br>• Brief description of nature, size, location of the project and its importance to the country, region<br>• Scope of the study – details of regulatory scoping carried out (As per Terms of Reference) |
| 2. | Project Description | • Condensed description of those aspects of the project (based on project feasibility study), likely to cause environmental effects. Details should be provided to give clear picture of the following:<br>• Type of project<br>• Need for the project<br>• Location (maps showing general location, specific location, project boundary & project site layout)<br>• Size or magnitude of operation (incl. Associated activities required by or for the project<br>• Proposed schedule for approval and implementation<br>• Technology and process description<br>• Project description. Including drawings showing project layout, components of project etc. Schematic representations of the feasibility drawings which give information important for EIA purpose<br>• Description of mitigation measures incorporated into the project to meet environmental standards, environmental operating conditions, or other EIA requirements (as required by the scope)<br>• Assessment of New & untested technology for the risk of technological failure |

| | | |
|---|---|---|
| 3. | Description of the Environment | • Study area, period, components & methodology<br>• Establishment of baseline for valued environmental components, as identified in the scope<br>• Base maps of all environmental components |
| 4. | Anticipated Environmental Impacts & Mitigation Measures | • Details of Investigated Environmental impacts due to project location, possible accidents, project design, project construction, regular operations, final decommissioning or rehabilitation of a completed project<br>• Measures for minimizing and / or offsetting adverse impacts identified<br>• Irreversible and Irretrievable commitments of environmental components<br>• Assessment of significance of impacts (Criteria for determining significance, Assigning significance)<br>• Mitigation measures |
| 5. | Analysis of Alternatives (Technology & Site) | • In case, the scoping exercise results in need for alternatives:<br>• Description of each alternative<br>• Summary of adverse impacts of each alternative<br>• Mitigation measures proposed for each alternative and<br>• Selection of alternative |
| 6. | Environmental Monitoring Program | • Technical aspects of monitoring the effectiveness of mitigation measures (incl. Measurement methodologies, frequency, location, data analysis, reporting schedules, emergency procedures, detailed budget & procurement schedules) |
| 7. | Additional Studies | • Public Consultation<br>• Risk assessment<br>• Social Impact Assessment. R&R Action Plans |
| 8. | Project Benefits | • Improvements in the physical infrastructure<br>• Improvements in the social infrastructure<br>• Employment potential –skilled; semi-skilled and unskilled<br>• Other tangible benefits |

| | | |
|---|---|---|
| 9. | Environmental Cost Benefit Analysis | If recommended at the Scoping stage |
| 10. | EMP | • Description of the administrative aspects of ensuring that mitigative measures are implemented and their effectiveness monitored, after approval of the EIA |
| 11 | Summary & Conclusion (This will constitute the summary of the EIA Report ) | • Overall justification for implementation of the project<br>• Explanation of how, adverse effects have been mitigated |
| 12. | Disclosure of Consultants engaged | • The names of the Consultants engaged with their brief resume and nature of Consultancy rendered |

**APPENDIX III A**
**(See paragraph 7)**

**CONTENTS OF SUMMARY ENVIRONMENTAL IMPACT ASSESSMENT**

The Summary EIA shall be a summary of the full EIA Report condensed to ten A-4 size pages at the maximum. It should necessarily cover in brief the following Chapters of the full EIA Report: -

1. Project Description
2. Description of the Environment
3. Anticipated Environmental impacts and mitigation measures
4. Environmental Monitoring Programme
5. Additional Studies
6. Project Benefits
7. Environment Management Plan

## APPENDIX IV

**(See paragraph 7)**

### PROCEDURE FOR CONDUCT OF PUBLIC HEARING

1.0 The Public Hearing shall be arranged in a systematic, time bound and transparent manner ensuring widest possible public participation at the project site(s) or in its close proximity District -wise, by the concerned State Pollution Control Board (SPCB) or the Union Territory Pollution Control Committee (UTPCC).

2. 0 **The Process:**

2.1 The Applicant shall make a request through a simple letter to the Member Secretary of the SPCB or Union Territory Pollution Control Committee, in whose jurisdiction the project is located, to arrange the public hearing within the prescribed statutory period. In case the project site is extending beyond a State or Union Territory, the public hearing is mandated in each State or Union Territory in which the project is sited and the Applicant shall make separate requests to each concerned SPCB or UTPCC for holding the public hearing as per this procedure.

2.2 The Applicant shall enclose with the letter of request, at least 10 hard copies and an equivalent number of soft (electronic) copies of the draft EIA Report with the generic structure given in Appendix III including the Summary Environment Impact Assessment report in English and in the local language, prepared strictly in accordance with the Terms of Reference communicated after Scoping (Stage-2). Simultaneously the applicant shall arrange to forward copies, one hard and one soft, of the above draft EIA Report along with the Summary EIA report to the Ministry of Environment and Forests and to the following authorities or offices, within whose jurisdiction the project will be located:

(a) District Magistrate/s
(b) Zila Parishad or Municipal Corporation
(c) District Industries Office
(d) Concerned Regional Office of the Ministry of Environment and Forests

2.3 On receiving the draft Environmental Impact Assessment report, the above-mentioned authorities except the MoEF, shall arrange to widely publicize it within their respective jurisdictions requesting the interested persons to send their comments to the concerned regulatory authorities. They shall also make available the draft EIA Report for inspection electronically or otherwise to the public during normal office hours till the Public Hearing is over. The Ministry of Environment and Forests shall promptly display the Summary of the draft Environmental Impact Assessment report on its website, and also make the full draft EIA available for reference at a notified place during normal office hours in the Ministry at Delhi.

2.4 The SPCB or UTPCC concerned shall also make similar arrangements for giving publicity about the project within the State/Union Territory and make available the Summary of the draft Environmental Impact Assessment report (Appendix III A) for inspection in select offices or public libraries or panchayats etc. They shall also additionally

make available a copy of the draft Environmental Impact Assessment report to the above five authorities/offices viz, Ministry of Environment and Forests, District Magistrate etc.

**3.0 Notice of Public Hearing**:

3.1 The Member-Secretary of the concerned SPCB or UTPCC shall finalize the date, time and exact venue for the conduct of public hearing within 7(seven) days of the date of receipt of the draft Environmental Impact Assessment report from the project proponent, and advertise the same in one major National Daily and one Regional vernacular Daily. A minimum notice period of 30(thirty) days shall be provided to the public for furnishing their responses;

3.2 The advertisement shall also inform the public about the places or offices where the public could access the draft Environmental Impact Assessment report and the Summary Environmental Impact Assessment report before the public hearing.

3.3 No postponement of the date, time, venue of the public hearing shall be undertaken, unless some untoward emergency situation occurs and only on the recommendation of the concerned District Magistrate the postponement shall be notified to the public through the same National and Regional vernacular dailies and also prominently displayed at all the identified offices by the concerned SPCB or Union Territory Pollution Control Committee;

3.4 In the above exceptional circumstances fresh date, time and venue for the public consultation shall be decided by the Member –Secretary of the concerned SPCB or UTPCC only in consultation with the District Magistrate and notified afresh as per procedure under 3.1 above.

**4.0 The Panel**

~~4.1~~ The District Magistrate or his or her representative not below the rank of an Additional District Magistrate assisted by a representative of SPCB or UTPCC**,** shall supervise and preside over the entire public hearing process.

**5.0 Videography**

5.1 The SPCB or UTPCC shall arrange to video film the entire proceedings. A copy of the videotape or a CD shall be enclosed with the public hearing proceedings while forwarding it to the Regulatory Authority concerned.

**6.0 Proceedings**

6.1 The attendance of all those who are present at the venue shall be noted and annexed with the final proceedings.

6.2 There shall be no quorum required for attendance for starting the proceedings.

6.3 A representative of the applicant shall initiate the proceedings with a presentation on the project and the Summary EIA report.

6.4 Every person present at the venue shall be granted the opportunity to seek information or clarifications on the project from the Applicant. The summary of the public

hearing proceedings accurately reflecting all the views and concerns expressed shall be recorded by the representative of the SPCB or UTPCC and read over to the audience at the end of the proceedings explaining the contents in the vernacular language and the agreed minutes shall be signed by the District Magistrate or his or her representative on the same day and forwarded to the SPCB/UTPCC concerned**.**

6.5 A Statement of the issues raised by the public and the comments of the Applicant shall also be prepared in the local language and in English and annexed to the proceedings~~:~~

6.6 The proceedings of the public hearing shall be conspicuously displayed at the office of the Panchyats within whose jurisdiction the project is located, office of the concerned Zila Parishad, District Magistrate ,and the SPCB or UTPCC . The SPCB or UTPCC shall also display the proceedings on its website for general information. Comments, if any, on the proceedings which may be sent directly to the concerned regulatory authorities and the Applicant concerned.

## 7.0 Time period for completion of public hearing

7.1 The public hearing shall be completed within a period of 45 (forty five) days from date of receipt of the request letter from the Applicant. Therefore the SPCB or UTPCC concerned shall sent the public hearing proceedings to the concerned regulatory authority within 8(eight) days of the completion of the public hearing .The applicant may also directly forward a copy of the approved public hearing proceedings to the regulatory authority concerned along with the final Environmental Impact Assessment report or supplementary report to the draft EIA report prepared after the public hearing and public consultations.

7.2 If the SPCB or UTPCC fails to hold the public hearing within the stipulated 45(forty five) days, the Central Government in Ministry of Environment and Forests for Category 'A' project or activity and the State Government or Union Territory Administration for Category 'B' project or activity at the request of the SEIAA, shall engage any other agency or authority to complete the process, as per procedure laid down in this notification.

**APPENDIX –V**
**(See paragraph 7)**

**PROCEDURE PRESCRIBED FOR APPRAISAL**

1. The applicant shall apply to the concerned regulatory authority through a simple communication enclosing the following documents where public consultations are mandatory: -

- Final Environment Impact Assessment Report [20(twenty) hard copies and 1 (one) soft copy)]
- A copy of the video tape or CD of the public hearing proceedings
- A copy of final layout plan (20 copies)
- A copy of the project feasibility report (1 copy)

2. The Final EIA Report and the other relevant documents submitted by the applicant shall be scrutinized in office within 30 days from the date of its receipt by the concerned Regulatory Authority strictly with reference to the TOR and the inadequacies noted shall be communicated electronically or otherwise in a single set to the Members of the EAC /SEAC enclosing a copy each of the Final EIA Report including the public hearing proceedings and other public responses received along with a copy of Form -1or Form 1A and scheduled date of the EAC /SEAC meeting for considering the proposal .

3. Where a public consultation is not mandatory and therefore a formal EIA study is not required, the appraisal shall be made on the basis of the prescribed application Form 1 and a pre-feasibility report in the case of all projects and activities other than Item 8 of the Schedule .In the case of Item 8 of the Schedule, considering its unique project cycle , the EAC or SEAC concerned shall appraise all Category B projects or activities on the basis of Form 1, Form 1A and the conceptual plan and stipulate the conditions for environmental clearance . As and when the applicant submits the approved scheme /building plans complying with the stipulated environmental clearance conditions with all other necessary statutory approvals, the EAC /SEAC shall recommend the grant of environmental clearance to the competent authority.

4. Every application shall be placed before the EAC /SEAC and its appraisal completed within 60 days of its receipt with requisite documents / details in the prescribed manner.

5. The applicant shall be informed at least 15 (fifteen) days prior to the scheduled date of the EAC /SEAC meeting for considering the project proposal.

6. The minutes of the EAC /SEAC meeting shall be finalised within 5 working days of the meeting and displayed on the website of the concerned regulatory authority. In case the project or activity is recommended for grant of EC, then the minutes shall clearly list out the specific environmental safeguards and conditions. In case the recommendations are for rejection, the reasons for the same shall also be explicitly stated.

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## APPENDIX VI

**(See paragraph 5)**

**COMPOSITION OF THE SECTOR/ PROJECT SPECIFIC EXPERT APPRAISAL COMMITTEE (EAC) FOR CATEGORY A PROJECTS AND THE STATE/UT LEVEL EXPERT APPRAISAL COMMITTEES (SEACs) FOR CATEGORY B PROJECTS TO BE CONSTITUTED BY THE CENTRAL GOVERNMENT `**

1. The Expert Appraisal Committees (EAC(s) and the State/UT Level Expert Appraisal Committees (SEACs) shall consist of only professionals and experts fulfilling the following eligibility criteria:

**Professional:** The person should have at least (i) 5 years of formal University training in the concerned discipline leading to a MA/MSc Degree, or (ii) in case of Engineering /Technology/Architecture disciplines, 4 years formal training in a professional training course together with prescribed practical training in the field leading to a B.Tech/B.E./B.Arch. Degree, or (iii) Other professional degree (e.g. Law) involving a total of 5 years of formal University training and prescribed practical training, or (iv) Prescribed apprenticeship/article ship and pass examinations conducted by the concerned professional association (e.g. Chartered Accountancy ),or (v) a University degree , followed by 2 years of formal training in a University or Service Academy (e.g. MBA/IAS/IFS). In selecting the individual professionals, experience gained by them in their respective fields will be taken note of.

**Expert:** A professional fulfilling the above eligibility criteria with at least 15 years of relevant experience in the field, or with an advanced degree (e.g. Ph.D.) in a concerned field and at least 10 years of relevant experience.

**Age:** Below 70 years. However, in the event of the non-availability of /paucity of experts in a given field, the maximum age of a member of the Expert Appraisal Committee may be allowed up to 75 years

2. The Members of the EAC shall be Experts with the requisite expertise and experience in the following fields /disciplines. In the event that persons fulfilling the criteria of "Experts" are not available, Professionals in the same field with sufficient experience may be considered:

- **Environment Quality Experts**: Experts in measurement/monitoring, analysis and interpretation of data in relation to environmental quality

- **Sectoral Experts in Project Management**: Experts in Project Management or Management of Process/Operations/Facilities in the relevant sectors.

- **Environmental Impact Assessment Process Experts**: Experts in conducting and carrying out Environmental Impact Assessments (EIAs) and preparation of Environmental Management Plans (EMPs) and other Management plans and who have wide expertise and knowledge of predictive techniques and tools used in the EIA process

- **Risk Assessment Experts**

- **Life Science Experts in floral and faunal management**
- **Forestry and Wildlife Experts**

- **Environmental Economics Expert with experience in project appraisal**

3. The Membership of the EAC shall not exceed 15 (fifteen) regular Members. However the Chairperson may co-opt an expert as a Member in a relevant field for a particular meeting of the Committee.

4. The Chairperson shall be an outstanding and experienced environmental policy expert or expert in management or public administration with wide experience in the relevant development sector.

5. The Chairperson shall nominate one of the Members as the Vice Chairperson who shall preside over the EAC in the absence of the Chairman /Chairperson.

6. A representative of the Ministry of Environment and Forests shall assist the Committee as its Secretary.

7. The maximum tenure of a Member, including Chairperson, shall be for 2 (two) terms of 3 (three) years each.

8. The Chairman / Members may not be removed prior to expiry of the tenure without cause and proper enquiry.

**Annexure-4**



**IN THE SUPREME COURT OF INDIA**

**CIVIL ORIGINAL JURISDICTION**

**WRIT PETITION(CIVIL) NO.116 OF 2016**

**Alla Venkata Gopala Krishna Rao and others ..Petitioners**

**versus**

**Union of India and others ..Respondents**

**O R D E R**

**The petitioners have approached this Court by invoking writ jurisdiction under Article 32 of the Constitution of India, seeking directions with reference to the construction of two projects, namely, Palamuru – Ranga Reddy LIS and Dindi LIS, contemplated in the Government Order No. 105 dated 10.06.2015, and Government Order No. 107 dated 11.06.2015.**

**Since the issue raised by the petitioners, was not being dealt with, this Court called upon the respondents to tender their response. In the counter affidavit filed by the State of Andhra Pradesh, it has been asserted in paragraph 27, that the State of Andhra Pradesh vide its letter dated 5.5.2016, has already requested the Union of India, to convene a meeting of the Apex Council, as early as possible, for discussing the issues pending with regard to the new projects being undertaken by respondent no.4 – the State of Telangana.**

**During the course of hearing, learned counsel for the rival parties have invited our attention to Section 84 of the Andhra Pradesh Reorganisation Act, 2014, so as to contend, that the jurisdiction in the matter vests with the Apex Council. Learned**

**counsel for the rival parties accordingly commend us to convening of a meeting of the Apex Council, constituted under Section 84 of the Andhra Pradesh Reorganisation Act, 2014, to take into consideration, the issues with reference to the two projects raised by the petitioners.**

**It has also been brought to our notice, that the Apex Council came to be constituted through a notification in the Gazette of India, Extraordinary, dated 29.05.2014, and that, the Krishna River Management Board was likewise constituted, through a notification in the Gazette of India, Extraordinary, dated 28.5.2014.**

**In the above view of the matter, we are satisfied in directing the convening of the meeting of the Apex Council, as expeditiously as possible. The Apex Council shall examine the issues with reference to the construction of two projects, referred hereinabove, after affording an opportunity of hearing, to the concerned State parties.**

**All issues including the issue of jurisdiction raised by the learned counsel representing the State of Telangana, are kept open.**

**Disposed of in the aforesaid terms.**

**….....J.**
**[JAGDISH SINGH KHEHAR]**

**….....J.**
**[KURIAN JOSEPH]**

**NEW DELHI;**
**JULY 20, 2016.**

**….....J.**
**[ARUN MISHRA]**

ITEM NO.9 COURT NO.3 SECTION X

S U P R E M E C O U R T O F I N D I A

RECORD OF PROCEEDINGS

Writ Petition(s)(Civil) No(s). 116/2016

ALLA VENKATA GOPALA KRISHNA RAO AND ORS Petitioner(s)

VERSUS

UNION OF INDIA AND ORS Respondent(s)

(with appln. (s) for directions and office report)

Date : 20/07/2016 This petition was called on for hearing today.

CORAM :

HON'BLE MR. JUSTICE JAGDISH SINGH KHEHAR

HON'BLE MR. JUSTICE KURIAN JOSEPH

HON'BLE MR. JUSTICE ARUN MISHRA

For Petitioner(s) Mr. V. Giri, Sr. Adv.
Mr. Venkateswara Rao Anumolu,Adv.
Mr. Prabhakar Parnam, Adv.

For Respondent(s) Mr. A.K. Ganguli, Sr. Adv.
(State of AP) Mr. D. Srinivas, AG
Mr. G. Umapathi, Adv.
Mr. G. Pramod Kumar, Adv.
Ms. A.K. Anuradha Ganguli, Adv.
Mr. Guntur Prabhakar,Adv.

Mr. C.S. Vaidyanathan, Sr. Adv.
Mr. Vidya Sagar, Sr. Adv.
Mr. V. Ravinder Rao, Adv.
Mr. Krishnamurthi Swami,Adv.
Mr. Nikhil Swami, Adv.

Mr. S.W.A. Qadri, Adv.
Ms. Pragya Baghel, Adv.
Mr. S.S. Rawat, Adv.
Mr. Vikas Bansal, Adv.
Mr. Akash Jindal, Adv.
Ms. A.S. Luthra, Adv.
for Mr. D.S. Mahra, AOR

UPON hearing the counsel the Court made the following

O R D E R

The writ petition is disposed of in terms of the signed order.

(Renuka Sadana) (Parveen Kumar)
Court Master AR-cum-PS

[signed order is placed on the file]

**Annexure-5** 77

## 4. PALAMURU-RANGAREDDY LIFT IRRIGATION SCHEME

### 1. Scope of the Project:

The Palamuru–Rangareddy Lift Irrigation Scheme envisages to create irrigation potential for an ayacut of 12.30 lakh acres (4,97,774 Ha) in upland areas of Mahabubnagar District (7.00 lakh acres), Rangareddy District (5.00 lakh acres) and Nalgonda District (0.30 lakh acers) and drinking water requirement to enroute villages, GHMC and industrial water requirement by lifting 90 TMC of water from Srisailam Reservoir at 1.50 TMC per day from foreshore of Srisailam Reservoir in 60 days during the floods.

### 2. History of the Project:

Mahabubnagar district is endowed with two most important rivers viz, the Krishna, and Tungabhadra that flow through the district. The Dindi, Peddavagu and Chinnavagu the tributaries of River Krishna also flow through the district. The river Krishna flows at an elevation of about +250.00 MSL through the district whereas substantial command area lies above +500.0 m. The erstwhile Hyderabad State proposed to provide irrigation to these areas before 1956 by gravity by way of extension of canals from UKP, TBPLBMC and Bhima projects. Subsequent to States' Reorganization in 1956, these were not pursued by erstwhile Andhra Pradesh. With the result, the Telangana areas could not be irrigated for all these years by gravity. Hence the possibility for creating irrigation potential is only through lift irrigation. The district has vast Culturable Command area i.e. to an extent of 34.49 lakh acres which is entirely drought-prone area. But, only about 4.68 lakh acres was provided with irrigation facilities, necessitating this project. Similarly, the districts of Rangareddy and Nalgonda face similar drought conditions.

The erstwhile Government of Andhra Pradesh vide G.O.Ms.No.72 Irrigation and CAD (M&MI-T1.A2) Department Dt. 08.08.2013 accorded administrative approval to this project estimate for an amount of Rs 6.91 Crores for conducting detailed survey, investigation and design. In continuation, the Government have accorded administrative approval for

preparation of DPR for this scheme in G.O.Rt.No.69, I&CAD (Projects-1) Dept. Dt. 01.08.2014 for Rs. 5,71,22,488/- and entrusted to M/s Engineering Staff college of India (ESCI), Hyderabad on nomination basis. Accordingly, M/s ESCI has conducted detailed survey and submitted the line estimate with rates of SSR for the year 2014-15 for Rs. 35,250 Crore for according administrative sanction to the Project, duly proposing the source of water from Srisailam Reservoir on Krishna river.

Further, the Govt. vide G.O.Ms.No.105, I&CAD (Projects-I) Department, Dated 10-06-2015 have accorded administrative approval for Rs. 35,200 Crores for Palamuru Rangareddy Lift Irrigation Scheme duly lifting 1.50 TMC/day of water for 60 days. The Government vide GO Ms.No. 107, I & CAD (projects - I) Department dt: 11.06.2015 has accorded provision for drinking water to Dindi Lift Irrigation Scheme at 0.5 TMC per day for 60 days.

The Scheme consists of five stages of lifts from foreshore of Srisailam project to K.P.Lakshmidevpalli reservoir. Water is drawn from Srisailam to proposed Narlapur reservoir with gravity and lift, from Narlapur to proposed Yedula reservoir by gravity and lift, from Yedula reservoir to proposed Vattem reservoir by gravity and lift, from Vattem to proposed Karvena reservoir by gravity, from Karvena to proposed Udandapur reservoir by gravity and lift and from Udandapur to KP Laxmidevipally by gravity and lift.

The tentative Designs and drawings for the components of PRLI Scheme have been approved by the Chief Engineer, CDO for preparation of Estimates for the main conduit works. The main conduit work from foreshore of Srisailam to Udandapur suitably divided into 18 packages and prepared the estimates. Tenders have been invited tenders under L.S Contract system on e-procurement platform for the Main conduit works consist of Approach channels, Open canal, Tunnel, Pump Houses and reservoirs for four stages up to Udandapur Balancing reservoir for Rs.29,333.00 Crores. The tenders have been processed and the works have been left out:

### 3. Command

The ayacut details District-wise are as below:

| Ayacut Abstract of PRLIS | | | |
|---|---|---|---|
| **S.No** | **DISTRICT** | **NO. OF MANDALS** | **NET AYACUT in Acres** |
| 1 | MAHAUBNAGAR | 29 | 7,00,000 |
| 2 | RANGAREDDY | 38 | 5,00,000 |
| 3 | NALGONDA | 5 | 30,000 |
| | **TOTAL** | **72** | **12,30,000** |

The

| STATEMENT OF CONSTITUENCY-WISE AYACUT | | |
|---|---|---|
| **S. No** | **NAME OF THE CONSTITUENCY** | **CONTEMPLATED AYACUT (Acres)** |
| | **MAHABUB NAGAR DISTRICT** | |
| 1 | ACHAMPET | 2,357 |
| 2 | DEVARKADRA | 58,452 |
| 3 | JADCHERLA | 1,36,570 |
| 4 | KALWA KURTHY | 1,34,040 |
| 5 | KODANGAL | 1,10,442 |
| 6 | MAHABUB NAGAR | 22,220 |
| 7 | MAKTHAL | 58,011 |
| 8 | NAGAR KURNOOL | 34,512 |
| 9 | NARAYANPET | 58,790 |
| 10 | SHADNAGAR | 84,061 |
| 11 | WANAPARTHY | 543 |
| | **TOTAL** | **7,00,000** |
| | **RANGA REDDY DISTRICT** | |
| 1 | PARGI | 85,637 |
| 2 | TANDUR | 98,092 |
| 3 | VIKARABAD(SC) | 95,053 |
| 4 | CHEVELLA(SC) | 1,09,539 |
| 5 | RAJENDRANAGAR | 6,601 |
| 6 | MAHESWARAM | 19,165 |
| 7 | IBRAHIMPATNAM | 85,913 |
| | **TOTAL** | **5,00,000** |
| | **NALGONDA DISTRICT** | |
| 1 | DEVARAKONDA | 25,984 |
| 2 | MUNUGODU | 4,016 |
| | **TOTAL** | **30,000** |
| | **GRAND TOTALS** | **12,30,000** |

Hydraulic Particulars from fore shore of Srisailam reservoir to K.P.Lakshmidevipalli reservoir is as follows:

## 4. Salient Features of the Project

| | | |
|---|---|---|
| Source of the project | : | SRISAILAM RESERVOIR across River Krishna |
| Location | : | Near Yellur village, Kollapur (M) |
| | : | Mahabubnagar Dist. Telangana |
| Longitude | : | $16^0$-5' N |
| Latitude | : | $78^0$-54 'E |
| Catchment area | : | 79,530 sq miles |
| Design flood | : | 19 lakhs cusecs. |
| FRL | : | +269.735 |
| MDDL | : | +244.400 |
| SILL LEVEL | : | +240.000 |
| Type of dam | : | Gravity Dam |
| Top elevation | : | 275.525 m |
| Height of dam from deepest foundation level. | : | 143.26 m |
| Total length at Top | : | 512.0 m |
| Max. discharging capacity over the crest. | : | 37,356 Cumecs |

Keeping in view of above actual flood position since inception of Srisailam project, it is proposed that the lifting period is restricted to 60 days at 1.50 TMC per day for PRLIS. The Palamuru-Rangareddy Lift Irrigation Project consists of five stages of pumping.

**Stage-1** Pumping station is located near Narlapur village, Kollapur Mandal, Mahabubnagar District. At this pumping station 120 TMC (90 TMC for PRLIS & 30 TMC for Dindi LIS) of water will be drawn from foreshore of Srisailam reservoir with level at EL +250.00 m. The water will be pumped to a height of static head 104 mts to fill Narlapur balancing reservoir by installing 8 nos of pumps of 145 MW capacity with discharge 85 cumecs each. There is no ayacut under

the Narlapur Reservoir, and 120 TMC of water (90 TMC for PRLIS & 30 TMC for Dindi LIS) will be taken to stage-2 pumping station by gravity through an open channel and tunnel.

**Stage -2** pumping station located near Yedula village, Gopalpet Mandal, Mahabubnagar District. At this pumping station water will be pumped to a height (static head) of 124 m by 9 Nos, 145 MW pumps with discharge 75 cumecs each to fill the Yedula balancing reservoir. From this balancing reservoir, there is no ayacut in command and 120 TMC of water will be taken to **stage-3** pumping station located near Vattem village, Bijinepalli Mandal, Mahabubnagar district. At this pumping station water will be pumped to a height of 121m by installing 9 Nos. 145 MW capacity pump with 75 cumecs each to fill Vattem balancing reservoir to irrigate an ayacut of 1.39 lakh Acres. From this reservoir 90 TMC of water will be drawn to another reservoir located at Kervena village to irrigate an ayacut of 1.90 lakh acres. From this Kervena balancing reservoir, 69 TMC of water will be taken to **stage -4** pumping station located near Udandapur village, Jadcherla Mandal, Mahabubnagar district. At this pumping station water will be pumped to a height of 123 m by installing 5 Nos. 145 MW capacity pump-motors set with 75 cumes for each pump to fill Udandapur balancing reservoir to irrigate an ayacut of 4.88 Lakhs Acres. **Stage-5** Pumping station located near Padmaram Village, Chowdargudem Mandal, Rangareddy District. From the Udandapur reservoir balance 30.00 TMC of water is lifted to K.P.Lakshmidevipally balancing reservoir with a static head of 69 m by utilizing 3 Nos. 70 MW capacity pump-motors sets with 55 cumecs for each pump to fill K.P.Lakshmidevipally reservoir. From this reservoir water is utilized for irrigation to command balance ayacut of 4.13 lakh acres.

## 1ST STAGE – LIFT FROM SRISILAM TO NARLAPUR RESERVOIR:

Keeping in view of taking the permission from forest department is a time taking process and involves so many stages. Hence alternative proposal for package – I is proposed with underground pumping stations at other location.

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The Departmental Committee headed by the ENC (I), Hyderabad on 13.09.2016, where in it is recommended that the land requirement is less and overall cost & time required also lesser than the surface Pumping Station, the Government vide Memo No. 10494/Projects – II/A1/2016 dt: 18.11.2016 has accorded permission for conversion of surface pumping station to underground pumping station of Package No.1 (Lift – 1) of PRLIS Scheme at the alternate site for executing the works subject to the suitability of Rock Strata for Under Ground Pumping Station.

The first lift consists of Approach channel to Intake regulator and Intake regulator to Surge pool by water conductor system by open canal and tunnel. Underground pumping station water is lifted to Narlapur reservoir by pumps. The hydraulic particulars of each item of original and proposals are as follows:

**i)**

| **S.No.** | **Description** | **:** | **As per proposal** |
|---|---|---|---|
| 1. | Approach channel including ramp | : | 2.205 Kms |
| 2. | Discharge (required.) | : | 984 Cumecs |
| 3. | Discharge (designed.) | : | 988.413 cumecs (AS&HDR) / 986.345 cumecs (F&F/HR) |
| 4. | Bed width (Combined Approach channel/ Approach channel | : | 140.00 m / 52.50 m |
| 5. | Full supply depth | : | 4.40 Mts / 10.00 Mts |

| | | | |
|---|---|---|---|
| 6. | Value of "n" | : | 0.035 (AS &HDR)/ 0.035 (F&F/HR) |
| 7. | Side slopes | : | 1.5:1(AS/HDR)/ 1.5:1 (F&F/HR) |
| 8. | Bed fall | : | 1 in 5500 (AS &HDR) / 1 in 5500 (F&F/HR) |
| 9. | Velocity | : | 1.439 m/sec (AS &HDR) : 1.501 m/sec (F&F/HR) |

**ii) <u>Tunnel</u>:**

Approach Channel ends with a ramp at the entrance of tunnel with regulator and trash rack. Tunnel runs for a length of 0.876 Kms. The water will be lifted from +250.00 m (MDDL) to +345.000 m before it falls into reservoir (Two pumps are proposed with +244.00 m (MDDL).

| **S.No.** | **Description** | : | **As per proposal** |
|---|---|---|---|
| 1. | Length | : | 0.876 Kms |
| 2. | Discharge | : | 656cumecs |
| 3 | No of Tunnels | : | 3 No.s |
| 4. | Discharge (designed.) | : | 3*218.67 cumecs |
| 5. | Diameter of tunnel | : | 9.20 m. |
| 6. | Full supply depth | : | 9.20 m. |
| 7. | Value of 'n' | : | |
| 8. | Bed fall | : | 1 in 209 |
| 9. | Velocity | : | 2.855 m/sec. |
| 10. | Pump House | : | Underground pump house |

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**iii) Narlapur(Anjanagiri) Reservoir:**

The water after lifting from Srisailam falls into Narlapur balancing reservoir. The capacity of the reservoir is 8.61 TMC. The reservoir bund length is 6.175 Km excluding hillocks. The particulars of Narlapur Balancing reservoir is as follows.

| | | | |
|---|---|---|---|
| 1 | Source | : | Main source from Srisailam Project by lift - I |
| 2 | Location | : | Near Narlapur village, Kollapur Mandal, Mahabubnagar Dist, |
| | T | | 180 Km from Hyderabad, |
| | h | | 160 Km from Airport at Shamshabad |
| | e | | 80 Km from Mahabubnagar Town |
| 3 | Longitude | : | 78°23'05" East |

standards of earth dam are as under.

| | | | |
|---|---|---|---|
| 1. | TBL | : | + 348.50 M |
| 2. | FRL | : | + 345.00M |
| 3. | Capacity | : | 8.61 TMC |
| 4. | Bund Length | : | 6.175 Km |

**iv) <u>Canals</u>:** There is no ayacut command under this reservoir.

## 2ND STAGE-PUMPING – RESERVIOR (NARLAPUR TO YEDULA)

The second lift consists of Approach channel from Narlapur (Anjanagiri) Reservoir to Intake regulator and Intake regulator to Surge pool by water conductor system by open canal and tunnel. From surge pool water is lifted to Yedula(Veeranjaneya) Reservoir by pumps. The hydraulic particulars of each item are given below:

**i. <u>Approach Channel</u>: Length of the Approach channel is 2.65 km**

The Approach Channel takes off from Foreshore of Narlapur and runs to a length of 2.65 kms up to Intake regulator.

**Hydraulic Particulars:**

| | | | |
|---|---|---|---|
| 1. | Discharge required | : | 984.00 cumecs |
| 2. | Discharge design | : | 989.093 cumecs |
| 3. | Bed width | : | 15.00 M |

| | | | |
|---|---|---|---|
| 4. | Full supply depth | : | 20.25M |
| 6. | Value of "n" | : | 0.035 |
| 7. | Side slopes | : | 1.5:1 in all soils |
| 8. | Bed fall | : | 1 in 4300 |
| 9. | Velocity | : | 4.730m/sec |
| | | | 4.731 |

ii. **<u>Open canal</u>: Length of the Open canal is 5.675 Km including transition of 225m length.**

| | | | |
|---|---|---|---|
| 1. | Discharge required | : | 656.00 cumecs |
| 2. | Discharge design | : | 658.280 cumecs |
| 3. | Bed width | : | 12.00 M |
| 4. | Full supply depth | : | 20.00M |
| 6. | Value of "n" | : | 0.035 |
| 7. | Side slopes | : | 0.5:1 in HR |
| 8. | Bed fall | : | 1in7500/1in |
| | | | 79.62(transition) |
| 9. | Velocity | : | 1.317 m/sec |

iii. **<u>Tunnel</u>: Length of the Tunnel is 16.005 Kms**

Canal starts from the intake regulator runs for about 8.325Kms and ends with a ramp at the entrance of tunnel. Tunnel runs for a length of 16.005 Km.

The water will be lifted from +325.00 M to +445.00 M before it falls into Yedula reservoir. The approximate length of the pumping mains is 0.80 km.

**Twin Tunnel Details**

| | | | |
|---|---|---|---|
| 1. | Discharge | : | 2X 328 = 656.00 cumecs |
| 2. | Diameter of tunnel | : | 11.50 M |
| 3. | No. of Tunnels | | Twin Tunnel |
| | | : | |
| 4. | Value of 'n' | : | 0.018 |
| 5. | Velocity | : | 2.74 m/sec. |

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**iv. Veeranjaneya (Yedula) Reservoir:**

The water after lifting from Anjanagiri (Narlapur) falls into Veeranjaneya (Yedula) balancing reservoir. The capacity of the reservoir is 6.55 TMC. The bund length is 7.716 Km excluding hillocks.

| | | | |
|---|---|---|---|
| 1. | Source | : | Main source from **Narlapur** reservoir by lift |
| 2. | Location | : | Near Yedula (village) & Gopalpet (Mandal), Mahabubnagar(Dist), 130 Km from Hyderabad, 110 Km from Airport at Shamshabad. 60 Km from Mahabubnagar Town |
| 3. | Longitude | : | 78°16'33.37" East |

**v. Earth Dam:**

The following are the hydraulic particulars of Yedula reservoir

| | | | |
|---|---|---|---|
| 1. | TBL | : | + 450.00 M |
| 2. | FRL | : | + 445.00 M |
| 3. | Reservoir Capacity | : | 6.55 TMC |
| 4. | Bund Length | : | 7.716 Km |

**vi. Canals:** There is no ayacut command under this reservoir.

## 3RD STAGE-PUMPING-VEERANJANEYA (YEDULA) RESERVOIR TO VENAKATADRI RESERVOIR. (VATTEM RESERVOIR)

The third lift consists of Approach channel from Yedula reservoir to Intake regulator and Intake regulator to Surge pool by water conductor system by open canal and tunnel. From surge pool water is lifted to Venkatadri (Vattem) reservoir by pumps. Then the water is to be supplied to Kurumurthyraya Reservoir at Karvena by Gravity canal from Venkatadri Reservoir at Vattem. The hydraulic particulars of each item are given below:

i. **Approach Channel: Length of the Approach channel is 3.30 Kms**

The Approach Channel takes off from foreshore of Yedula reservoir and runs to a length of 3.30 kms up to Intake regulator.

| | | | |
|---|---|---|---|
| 1. | Discharge | : | 984.00 cumecs (656 x1.5times) |
| 2. | Bed width | : | 30.00 M |
| 3. | Full supply depth | : | 11.25 M. |
| 4. | Value of "n" | : | 0.035 |
| 5. | Side slopes | : | 0.5:1in HR,1.5 :1 in All soils |
| 6. | Bed fall | : | 1 in 2200 |
| 7. | Velocity | : | 2.264 m/Sec |

ii. **Open Canal: Open canal length 3.10 Kms including ramp of 225m length**

| | | | |
|---|---|---|---|
| 1. | Discharge | : | 656.000cumecs |
| 2. | Bed width | : | 18.00 M |
| 3. | Full supply depth | : | 11.00 M |
| 4. | Value of "n" | : | 0.035 |
| 5. | Side slopes | : | 0.5 :1 |
| 6. | Bed fall | : | 1 in 1810 |

iii. **Tunnel: Length of the Tunnel is 22.00 Kms**

Canal starts from the intake regulator runs for about 6.40Kms and ends with a ramp at the entrance of tunnel. Tunnel runs for a length of 22.00 Km. The water will be lifted from +430.000 M to +542.000 M before it falls into Venkatadri (Vattem) Reservoir. The approximate length of the pumping mains is 0.60 km.

**Twin Tunnel Details:**

| | | | |
|---|---|---|---|
| 1. | Discharge | : | 2x328 = 656.00 cumecs |
| 2. | Diameter of tunnel | : | 11.50M |
| 3. | No. of tunnel | : | Twin Tunnel. |
| 4. | Full supply depth | : | 11.50 M |
| 5. | Value of 'n' | : | 0.018 |
| 6. | Side slopes | : | 0.5 : 1 |
| 7. | Velocity | : | 2.741m/sec |

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**iv. Venkatadri(Vattem) reservoir:**

The water after lifting from Yedula falls into Vattem balancing reservoir. The capacity of the reservoir is 16.74 TMC. Bund length is 14.75 Km excluding hillocks.

| | | | |
|---|---|---|---|
| 1. | Source | : | Main source from Yedula reservoir by lift |
| 2. | Location | : | Near Vattem village & Bijinepalli Mandal, Mahabubnagar Dist,<br>110 Km from Hyderabad,<br>90 Km from Airport at Shamshabad |
| 3. | Longitude | : | 78°15'7.57" E |
| 4. | Latitude | : | $16^0$34'23.18" N |

**v) Earth Dam:**

The following are the hydraulic particulars of Vattem reservoir

1. TBL : + 546.20. M
2. FRL : + 542.00 M
3. Capacity : 16.74 TMC
4. Bund Length : 14.75 Km excluding hillocks

**vi) Canals:** The Reservoir consists of one main canal and commanding an ayacut of 1.39 Lakh Acres.

**VENKATADRI RESERVOIR TO KURUMURTHYRAYA RESERVOIR:**

A reservoir is proposed near karvena (Kurumurthyraya Reservoir) with a capacity of 17.34 TMC by linking with gravity channel of length 12.05 kms from Vattem reservoir. The Bund Length is of 13.10 Kms. The FRL of Karvena reservoir is kept at +531.00 which is 11.00 meter below the Vattem reservoir FRL +542.00 m. The reservoir is formed with affecting hamlets under submergence. Two Main canals are taken off from the karvena reservoir to feed an ayacut of 1.90 lakh acres.

| | | | |
|---|---|---|---|
| 1 | Source | : | By gravity from Vattem Reservoir |
| 2 | Location | : | Near Karvena (V) Bijinepalle (M) Mahabubnagar (D)<br>95 km from Hyderabad<br>75 km from Airport Shamshabad |
| 3 | Longitude | : | 78°7'81.64" East |
| 4 | Latitude | : | $16^0$40'25.44"North |

**i) Earthen Dam**: The following are the hydraulic particulars of Karvena reservoir

| | | | |
|---|---|---|---|
| 1. | TBL | : | 535.50 M |
| 2. | FRL | : | 531.00 M |
| 3. | Capacity | : | 17.34 TMC |
| 4. | Bund Length: | | 13.10 Km |

**ii) Open Canal:**

| | | | |
|---|---|---|---|
| 1. | Discharge required | : | 492cumecs |
| 2. | Discharge design | : | 493.89 Cumecs |
| 3. | Bed width | : | 22.00 M. |
| 4. | Full supply depth | : | 9.20 M. |
| 5. | Value of "n" | : | 0.035 |
| 6. | Side slopes | : | 0.5 :1 in H.R |
| 7. | Bed fall | : | 1 in 2400 |
| 8. | Velocity | : | 1.83/sec. |

**iii) Canals:** The reservoir consists of Two (Left and Right )main canals and under Left main canal One is High level main canal and another is low level main canal i.e total three canals commanding an ayacut of 1.90lakh acres.

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**Left Main Canal:**

The Left main canal is taken off from Karvena reservoir i.e.

1. Left Main canal (High level canal):-The canal runs for a length of about 103 kms and commanding an ayacut area of 1,48,271 Acres. The left main canal and its branches command the ayacut of villages under Bhootpur, Koilkonda, Aadakula, PeddaMandadi, Danwada, Narayanapet and Utkoor Mandals of Mahabubnagar District.

2. Left Main canal (Low level canal):-The canal runs for a length of about 21 kms and commanding an ayacut area of 40,729 acres.

**Right Main Canal:** The length of Right main canal is 10 Kms and ayacut is 1000 Acres.

**4TH STAGE-PUMPING – KURUMURTHYRAYA (KARVENA) RESERVOIR TO UDANDAPUR RESERVOIR:**

The drawls from Karvena Reservoir are only possible after filling the reservoir upto + 512 m.

The fourth lift consists of Approach channel from (-) 1.525 Km to (-) 0.350 Km, ramp from (-) 0.350 to (-) 0.090 and tunnel from Km (-) 0.090 to Km 8.845, from Kurumurthyraya B.R at Kervena (V) to Udanapur B.R. The H.P's of each item are given below.

**i) <u>Approach Channel</u>: Length of Approach Channel from (-) 1.525 km to (-) 0.350 Km.**

| Sl. No | | | HP's ((-)1.525 KM to (-)0.350KM |
|---|---|---|---|
| 1 | Discharge (regd) | : | 565.5 cumecs |
| 2 | Discharge (designed) | : | 594.6 Cumecs |
| 3 | Bed width | : | 41.0 m |
| 4 | Full supply depth | : | 9.25 m |
| 5 | Bed level @ start | | +503.00 m |
| 6 | Bed level @ end | | +503.00 m |

| | | | |
|---|---|---|---|
| 7 | free Board | | 1.0 m |
| 8 | Bed fall | | 1 in 5740 |
| 9 | Side slopes | : | 0.5 :1 |
| 10 | Rugosity Coefficit | : | 0.035 |
| 11 | Velocity | : | 1.329 m/Sec |
| 12 | Ramp | | (-)0.350 to (-)0.090M |

**ii) Tunnel: Length of Twin Tunnel 8.645 Kms**

| Sl.No | | | HP's for Tunnel from (-) 0.090 KM to 8.845KM |
|---|---|---|---|
| 1 | Discharge (regd) | : | 377.00 cumecs |
| 2 | Shape | | D shape twin tunnel |
| 3 | Diameter | : | 8.5 Ø m |
| 4 | Length | : | 8935 m |
| 5 | Start chainage | : | KM (-)0.090 |
| 6 | End chainage | : | KM (-)8.845 |
| 7 | Rugosity | : | 0.018 |
| 8 | Velocity | : | 2.883 m/sec |
| 9 | Bed fall | | 2 in 499.162 |
| 10 | Start invert level | : | +489.900 M |
| 11 | End invert level | : | +472.000 M |

**iii) Udandapur Reservoir:**

| | | | |
|---|---|---|---|
| 1 | Source | : | Main source from Karvena reservoir by lift |
| 2 | Location | : | Near Udandapur village & Nawabpet Mandal, Mahabubnagar Dist, 80 Km from Hyderabad, 60km from Airport, Shamshabad. |
| 3 | Longitude | : | 78°3'38.96'' East |

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**iv) Earth Dam:**

The following are the Hydraulic particulars of Udandapur Reservoir

| | | | |
|---|---|---|---|
| 1. | TBL | : | + 634.00 M |
| 2. | FRL | : | + 629.00 M |
| 3. | Bund Capacity | : | + 15.91 TMC |
| 4. | Bund length | : | +15.875 Kms |

**vi) Canals:** The reservoir consists of One main canal,

**1. Left ( South ) Main Canal:**

The Left Main canal is takes off from foreshore of Udandapur reservoir. The canal runs for a length about 24 Kms and commanding an ayacut area of 39,000 Acres. The Left Main canal commands the ayacut of villages under Kosgi, Doulathabad, Kodangal, and Maddur mandals of Mahabubnagar District and Doma and Kulkacherla mandals of Rangareddy District. The silt level Head regulator is +610.00M and FSL +613.00 M. Provision is made from this canal to feed enroute tanks under command.

**2. Common Canal:**

The head regulator on Common canal is proposed at Km 15.85 with a sill +602.00 m and FSL+605.00 m. The canal is designed to irrigate an ayacut of about 4,49,000 acres. The Right Main canal commands the ayacut villages under Nawabpet, Balanagar, Kesampet, Talakondapalli and Amangal of Mahabubnagar District.

1) **Right (Talakondapally) Branch canal:** The Right Distributory canal takes off at Km 16.30 from Common canal. The canal runs for a length about 100 Kms and commanding an ayacut area of 1,45,000 acres.
2) **Left Main Canal:** The Left main canal takes off at Km 16.30 from Common canal. The canal runs for a length about 120 Kms and commanding an ayacut area of 2,01,000 acres.

3) **Left Main Canal (Narayanpet):** The Left main canal takes off from Common canal. The canal runs for a length about 98 Kms and commanding an ayacut area of 77748 acres.

4) **Right Main Canal (Hanwada):** The Right main canal takes off from Common canal. The canal runs for a length about 24 Kms and commanding an ayacut area of 25,252 acres.

**5TH STAGE-PUMPING - UDANDAPUR RESERVOIR TO K.P LAKSHMIDEVIPALLI RESERVOIR:**

The Fifth lift consists of Approach channel from Udandapur reservoir to Intake regulator and Intake regulator to Surge pool by water conductor system by open canal and tunnel. From surge pool water is lifted to K.P Lakshmidevipalli reservoir by pumps. The water is taken to K.P Lakshmidevipalli reservoir. The hydraulic particulars of each item are given below:

i) **Approach Channel:** Length of approach is 0.950 Kms

| | | | |
|---|---|---|---|
| 1. | Discharge | : | 505.264 cumecs (336.843x1.5times) |
| 2. | Bed width | : | 70.00 M |
| 3. | Full supply depth | : | 7.25M |
| 4. | Value of "n" | : | 0.035 |
| 5. | Side slopes | : | 1.5:1/0.5:1 |
| 6. | Bed fall | : | 1 in 4000 |
| 7. | Velocity | : | 0.963 m/sec |
| 8. | Sill level | : | + 617.80 M |

ii) **Open Canal:** Length of open canal is 18.800 Kms

| | | | |
|---|---|---|---|
| 1. | Discharge | : | 336.843 cumecs (from Km 0.00 to Km 16.562)<br>161.388 cumecs (from Km 16.562 to Km 18.800) |
| 2. | Bed width | : | 36 M (from Km 0.00 to Km 16.562) |

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| | | | |
|---|---|---|---|
| | | | 13 M (from Km 16.562 to Km 18.800) |
| 3. | Full supply depth | : | 7.00M |
| 4. | Value of "n" | : | 0.035 |
| 5. | Side slopes | : | 1.5:1/0.5:1 |
| 6. | Bed fall | : | 1 in 5000(from Km 0.00 to Km 16.562)<br>1 in 2000 (from Km 16.562 to Km 18.800) |
| 7. | Velocity | : | 1.236m/sec (from Km 0.00 to Km 16.562)<br>1.447m/sec (from Km 16.562 to Km 18.800) |

**iii) Tunnel:** Length of tunnel is 14.40Kms

| | | | |
|---|---|---|---|
| 1. | Discharge | : | 161.388 cumecs |
| 2. | Diameter of tunnel | : | 8.00M (Single Tunnel) |
| 3. | Full supply depth | : | 8.00M |
| 4. | Value of 'n' | : | 0.018 |
| 5. | Bed fall | : | 1 in 957 |
| 6. | Velocity | : | 2.786 m/sec |

**iv) KP Lakshmidevipalli Reservoir:**

| | | | |
|---|---|---|---|
| 1 | Source | : | Main source from Udandapur reservoir by lift |
| 2 | Location | : | Near Padmaram village, of Chowdarguda Mandal, Rangareddy Dist, 60 Km from Hyderabad, 40 km from Airport, Shamshabad. |
| 3 | Longitude | : | 77°56' 11" East |

**v) Earth Dam**

The following are the Hydraulic particulars of K.P Lakshmidevipalli Reservoir

| | | | |
|---|---|---|---|
| 1. | TBL | : | + 673.00 M |
| 2. | FRL | : | + 670.00 M |
| 3. | MWL | : | + 670.90M. |
| 4. | Capacity | : | 2.80 TMC |
| 5. | Length of Bund | : | 6.05 Km |

**vi) Canals:**The reservoir consists of Three main canals.

1. **North Main canal: The** North main canal is takes off from foreshore of K.P. Lakshmidevipalli reservoir. The canal runs for a length about 100 Kms and commanding an ayacut area of 1,64,408 acres. The North main canal commands the ayacut of villages under Bomraspet, Kondurg mandals of Mahabubnagar District and Bantawaram, Basheerbad, Chevella, Dharur, Doma, Kulkacherla, Marpalle, Mominpet, Nawabpet, Pargi,Peddemul,Pudur,Shabad,Shankarampalli, Tandur, Vikarabad and Yelal Mandals of Rangareddy District. The sill level of Head regulator is +647.330 m and FSL is +650.0 m. Provision is made from this canal to feed Sivasagar Tank (Vikarabad), Himayathsagar and Osman sagar by letting in to the streams 'Usi' and 'Musi' by constructing off-takes with Cross regulators. Provision is also made to feed Kotipalli Reservoir from this canal.
2. **West Main canal**: The west main canal is takes off from foreshore of K.P. Lakshmidevipalli reservoir. The canal runs for a length about 23 Kms and commanding an ayacut area of 10,440 acres.
3. **a) East Main canal** : The East main canal is takes off from foreshore of K.P. Lakshmidevipalli reservoir.The canal runs for a length about 93 Kms and commanding an ayacut area of 2,09,828 acres.

   **b) South Branch canal**: The South Branch canal is takes off from foreshore of K.P. Lakshmidevipalli reservoir. The canal runs for a length about 42 Kms and commanding an ayacut area of 28,324 acres.

A provision of 5% towards VAT for Civil works and 12.50% for E&M works provided separately as per G.O.Ms.No.11, Finance (Works & Projects, F8) Department, and Dt.29.07.2005 as the overall material component involved is more than 10% of the value of the

work. As per G.O.Ms.No.94; I&CAD (PW: COD) Department, Dt.01.07.2003, a provision of 1% labour Cess is provided and 0.1% NAC. A provision of 16.32% towards Excise duty on E&M work excluding cost of O&M charges is provided.

A provision is made towards L.A and Forest land components for Rs.2488 crores.

A provision is made towards Rehabilitations & Resettlement of submerged villages, for an amount of Rs. 300 Crores. The provision of Rs. 3300.52 Crore is provided towards 400 KV sub stations at 5 stages Lift Irrigation Pumping Stations and 400 KV transmission lines.

A provision towards price escalation component is made @ 3.50% on the Civil and Electro-mechanical works for an amount of Rs.1,292.34 Crores.

A Provision towards consultancy charges is made @ 0.75% cost of E&M equipment for vetting of E&M drawings to TSTRANCO & TSGENCO for amount of Rs.65.86 Cr.

LS Provisions @ 0.50% for detailed investigation, designs, drawings and estimates, 1.00 Crore for tender document preparation, Rs.139.00 Crore for shifting of power transmission lines, Poles including TSTRANCO supervision charges etc., Rs.50.00 crore for constructing office, staff quarters @ pump houses, a provision of Rs.61.00 Crore is made towards Diversion of Roads in lieu of submerged roads in reservoirs.

**3 Soils:**

**a)** The soils in the command have good drainage qualities coupled with suitable climate and favourable temperature. These soils are eminently suitable for producing good quality of crop, provided assured supply of water is available.

**b)** The soils in the command area are mostly alluvio-colluvial soils, constituting majority of the command and along with well drained saline sodic soils at some places. The permeability of these soils does not pose any water logging problems unlike delta areas.

## 4 Socio-economic scenario:

a) Due to lack of irrigation facilities, the farming labour in the project command area is migrating to other parts as manual labour elsewhere in the State and also outside the State. They are famously known across the country as "Palmuru" labour. The project will provide a stable base of employment by way of agriculture in their own places and will go a long way in improving their socio-economic status and living conditions. Development of other sectors like animal husbandry, poultry, agro industries etc. will take place in the command.

b) There are no industries in the command area of the project. There are no known mineral deposits in the area. The project people entirely depend on agriculture and allied activities. The natural resources are mostly tanks and kuntas which are fed by small streams depending mainly on the scanty and erratic rainfall in the command area.

## 5 Hydrology and Water Planning

### a) Rainfall

**Season-wise and Month-wise Rainfall of Mahabubnagar District**

| Season | South West Monsoon | | | | | North east Monsoon | | | |
|---|---|---|---|---|---|---|---|---|---|
| **Normal rainfall** (in mm) | June | July | August | September | **Total** | October | November | December | **Total** |
| | 71.2 | 146.5 | 121 | 107.9 | **446.6** | 90.3 | 25.6 | 5 | **120.8** |

| Season | Winter Period | | | Hot weather Period | | | | Grand Total |
|---|---|---|---|---|---|---|---|---|
| **Normal rainfall** (in mm) | January | February | **Total** | March | April | May | **Total** | |
| | 1.4 | 1.8 | **3.2** | 4.0 | 6.5 | 22.7 | **33.1** | **603.8** |

**Source: Table 3.2 of Hand Book of Statistics - Mahabubnagar District, 2011**

The mean seasonal rainfall of Rangareddy district in south west monsoon is 652 mm. But this rainfall is highly uncertain, uneven and sparsely distributed both in time and space making agriculture unprofitable.

### a) Storage

A total storage of about 67.79 TMC would be available.

### b) Water Requirement

The water requirements are as shown below:

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| | | |
|---|---|---|
| Irrigation | - | 83.9 TMC |
| Evaporation & Drinking Water Use | - | 6.1 TMC |
| **TOTAL** | - | **90 TMC** |

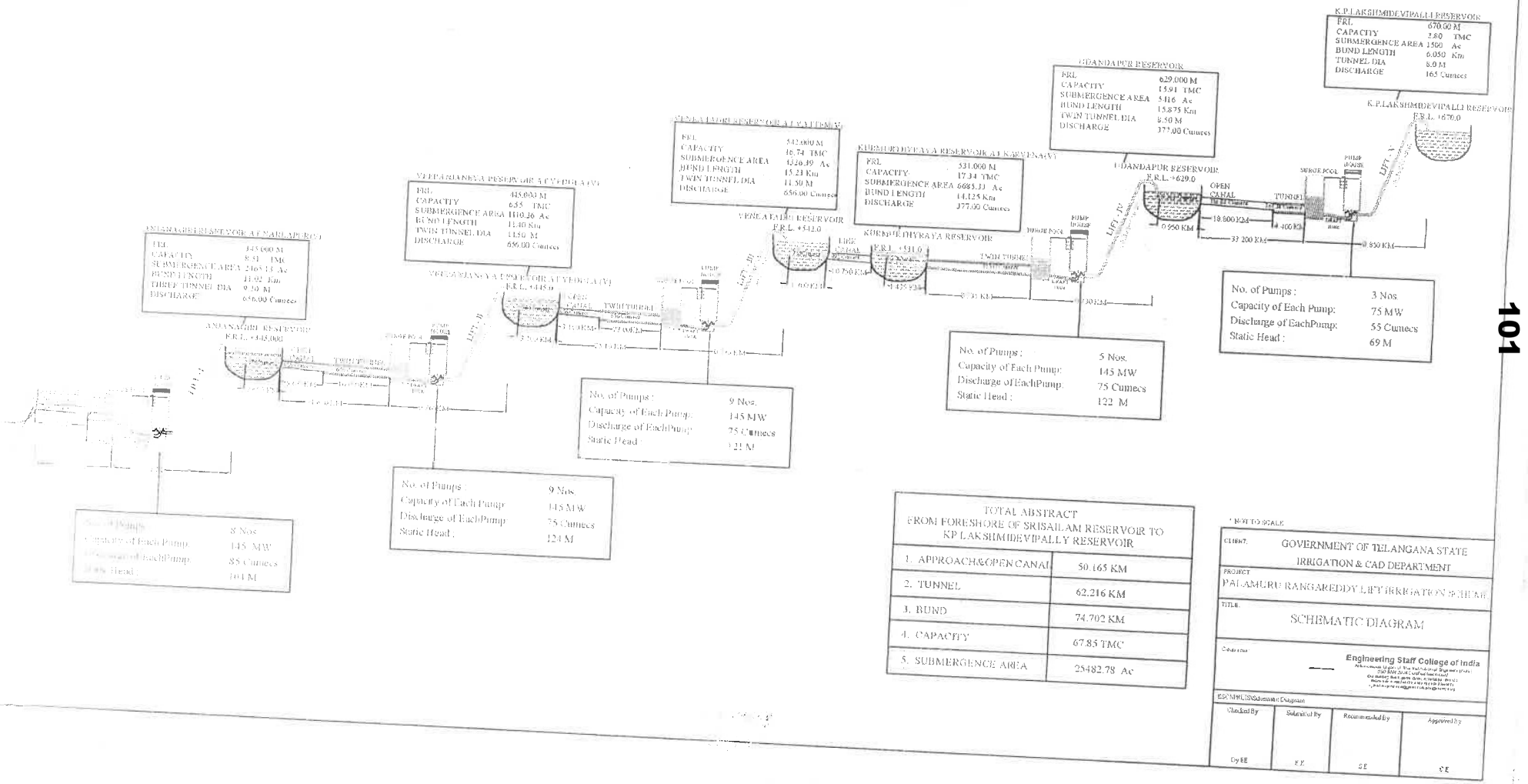
## 6 Cropping Pattern & Crop Water Requirement:

**IRRIGATION WATER REQUIREMENT FOR PALAMUR RANGAREDDY LIS (PRLIS)**

| Season | Crop details | Designed Cropping pattern in Acres | Sowing date | Crop period in days | CWR at field in mm | ER in mm | NIR in mm | GIR in mm | GIR in TMC |
|---|---|---|---|---|---|---|---|---|---|
| *1* | *2* | *3* | *4* | *5* | *6* | *7* | *8* | *9* | *10* |
| Mahabubnagar District | | | | | | | | | |
| Kharif | Maize | 135000 | 16th June | 110 | 422.8 | 264.3 | 158.5 | 264.2 | 5.1 |
| | Redgram | 150000 | 16th June | 180 | 653.9 | 263.6 | 390.3 | 650.5 | 14.0 |
| | Castor | 100000 | 16th June | 180 | 585.5 | 277.7 | 307.8 | 513.0 | 7.3 |
| | Cotton | 85000 | 16th June | 180 | 679.4 | 271.0 | 408.4 | 680.7 | 8.3 |
| | Groundnut | 100000 | 15th Sept | 120 | 446.2 | 61.9 | 384.3 | 640.5 | 9.2 |
| | Jowar | 100000 | 10th Sept | 115 | 406.9 | 69 | 337.9 | 563.2 | 8.1 |
| | Bengalgram | 30000 | 10th Oct | 105 | 290.2 | 18 | 272.2 | 453.7 | 1.9 |
| | | 700000 | | | | | | | 53.8 |
| Ranga Reddy District | | | | | | | | | |
| Kharif | Redgram | 125000 | 16th June | 180 | 474.8 | 259.5 | 215.3 | 358.8 | 6.4 |
| | Cotton | 100000 | 16th June | 180 | 513.2 | 278.0 | 235.2 | 392.0 | 5.6 |
| Late Khariff | Jowar | 100000 | 10th Sept | 120 | 323.5 | 68.1 | 255.4 | 425.7 | 6.1 |
| | Vegetables | 75000 | 1st Sept | 100 | 303.2 | 117.6 | 185.6 | 309.3 | 3.3 |
| | Groundnut | 100000 | 15th Sept | 120 | 330.5 | 61.2 | 269.3 | 448.8 | 6.4 |
| | | 500000 | | | | | | | 27.8 |
| Nalgonda District | | | | | | | | | |
| | Maize | 10000 | 16th June | 110 | 422.8 | 264.3 | 158.5 | 264.17 | 0.38 |
| | Redgram | 10000 | 16th June | 180 | 653.9 | 263.6 | 390.3 | 650.5 | 0.93 |
| | Cotton | 10000 | 16th June | 180 | 679.4 | 271.0 | 408.4 | 680.67 | 0.97 |
| | | 30000 | | | | | | | 2.3 |
| Total for PRLIS | | **1230000** | | | | | | | **83.9** |

# PALAMURU RANGAREDDY LIFT IRRIGATION SCHEME

## SCHEMATIC DIAGRAM




| TOTAL ABSTRACT FROM FORESHORE OF SRISAILAM RESERVOIR TO KP LAKSHMIDEVIPALLY RESERVOIR | |
|---|---|
| 1. APPROACH&OPEN CANAL | 50.165 KM |
| 2. TUNNEL | 62.216 KM |
| 3. BUND | 74.702 KM |
| 4. CAPACITY | 67.85 TMC |
| 5. SUBMERGENCE AREA | 25482.78 Ac |

NOT TO SCALE

CLIENT: GOVERNMENT OF TELANGANA STATE
IRRIGATION & CAD DEPARTMENT

PROJECT: PALAMURU RANGAREDDY LIFT IRRIGATION SCHEME

TITLE: SCHEMATIC DIAGRAM

Consultant: Engineering Staff College of India

ESCMRLIS/Schematic Diagram

| Checked By | Submitted By | Recommended By | Approved By |
|---|---|---|---|
| Dy EE | EE | SE | CE |

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**GOVERNMENT OF ANDHRA PRADESH**
**ABSTRACT**

Palamuru Lift Irrigation Scheme-Administrative approval for Rs 6.91 Crores for detailed survey and preparation of Detailed Project Report of Palamuru Ranga Reddy Lift Irrigation Scheme – Accorded - Orders - Issued.

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**IRRIGATION & CAD (M&MI-T1.A2) DEPARTMENT**

**G.O.Ms.No.72**

**Dated: 08-08-2013**
**Read:**

1) From the CE(P), Mahabubnagar, Lr.No.CE(P)/MBNR/1196, dated 28-08-2012.
2) From the CE(P), Mahabubnagar, Lr.No.CE(P)/MBNR/Palamuru LIS/1609, dated 29-10-2012.
3) From the CE(P), Mahabubnagar, Lr.No.CE(P)/MBNR/MGKLIS/PLI/168, dated , 26-04-2013.
4) From the CE(P), Mahabubnagar, Lr.No.CE(P)/MBNR/Palamuru LIS/2013/675, dated 27-06-2013.

***

**ORDER:**

In the references read above, the Chief Engineer(P), Mahabubnagar has proposed the Palamuru Lift Irrigation Scheme to irrigate an ayacut of about 10.00 lakh acres in Mahabubnagar, Ranga Reddy and Nalgonda districts enroute drinking water to all the villages in three districts by lifting 70 TMC of flood water in 35 days i.e., 2 TMC per day four stages from foreshore of Jurala Project to Padmaram (V), Kondurg (M) near Shadnagar Town (from +310.00m to + 675.00m) which is the higher elevation in between Mahabubnagar and R.R District. The main aim of the scheme is to develop irrigation facility in upland areas & also drinking water facility to enroute villages and water for industrial use.

2. In the reference 4th read above, the Chief Engineer(P), MBNR has submitted the estimate for an amount of Rs 7.00 Crores for conducting detailed survey and design a Lift Irrigation scheme to serve an ayacut of 10.00 lakh acres to irrigate drought prone areas of Mahabubnagar, Ranga Reddy and Nalgonda districts and supply of drinking water to enroute villages and preparation of Detailed Project Report and design of proposed Palamuru Lift Irrigation Scheme from Foreshore of Jurala Project and requested for according administrative approval at an early date.

3. Government after careful consideration hereby accord administrative approval to the estimate for an amount of Rs 6.91 Crores (Rupees Six crores ninety one lakhs only) for conducting detailed survey, investigation and design to prepare Palamuru Lift Irrigation scheme and identify an ayacut of 10.00 lakh acres to irrigate drought prone areas of Mahabubnagar, Ranga Reddy and Nalgonda districts and supply of drinking water to enroute villages and water for industrial use and prepare a Detailed Project Report of the proposed Palamuru Lift Irrigation Scheme from Foreshore of Jurala Project.

4. The expenditure shall be debited to the Head of Account MH 4700 -01 Major Irrigation Commercial- MH 145 (MGKLIS)- GH 11 Normal State Plan-SH 27 Canals and Distributaries- 530/531 Other Expenditure.

5. The Chief Engineer (P), Mahabubnagar shall take necessary action accordingly.

PTO

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6. This order issues with the concurrence of Finance (W&P) Department vide their U.O.No.2388/F2(A2)/2013-1, dated 11-07-2013.

**(BY ORDER AND IN THE NAME OF THE GOVERNOR OF ANDHRA PRADESH)**
**ADITYA NATH DAS**
**PRINCIPAL SECRETARY TO GOVERNMENT**

To
The Chief Engineer(P), Mahabubnagar,
Qtr No. EE-1 PJP Camp Colony, Gadwal-509125,
Mahabubnagar District
The Accountant General, Andhra Pradesh, Hyderabad.
The Director of Works & Accounts, Hyderabad.
SF/SC

**// FORWARDED :: BY ORDER //**

**SECTION OFFICER**

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**GOVERNMENT OF TELANGANA**
**ABSTRACT**

PALAMURU – RANGA REDDY LIFT IRRIGATION PROJECT - For Lifting of flood water in 60 days from foreshore of Srisailam Reservoir in Mahabubnagar district to serve net ayacut of 10.00 Lakh acres in drought prone areas of Mahabubnagar (7.00 Lakh acres), Rangareddy (2.70 Lakh acres) and Nalgonda (0.30 Lakh acres) Districts including providing drinking water facilities to enroute villages and industrial water use excluding the ayacut under Medium and Minor Irrigation tanks - Administrative approval for an amount of Rs 35,200 crore – Accorded – Orders – Issued.

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**IRRIGATION AND CAD (PROJECTS-I) DEPARTMENT**

**G.O.MS.No. 105**

**Dated:10-06-2015**
**Read:**

From the Engineer-in-Chief (Irrigation), Hyderabad, Lr No. ENC(I)/ DCE-IV/OT4/ AEE10/ CE/PRLIS/2015, Dt:04-06-2015 & 09.06.2015.

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**ORDER:**

In the reference read above, the Engineer-in-Chief (Irrigation), Hyderabad has informed that the Palamuru -Ranga Reddy Lift Irrigation Scheme envisages to irrigate upland areas of about a net ayacut of 10 lakh acres, drinking water to Hyderabad city and industrial use in Mahabubnagar, Rangareddy and Nalgonda districts, by lifting 90 TMC of flood water in 60 days during flood season ( i.e., 1.50 TMC per day) from foreshore of Srisailam Project located on Krishna river in Mahabubnagar district to Laxmidevipally(V), Kondurg (M) near Shadnagar town (from +250.00 M to +675.00m) which is the highest elevation in between Mahabubnagar and Ranga Reddy districts with 5 stage lifting and then utilizing water by gravity. The scheme contemplates enroute Irrigation under different reservoirs as per their command ability. There are five stages in the project starting from foreshore of Srisailam Reservoir and ending with K.P.Laxmidevipally Reservoir. The work is proposed to be taken up during the year 2015-16 by calling tenders on e-procurement platform.

2. The ENC has requested to accord administrative approval to the project for an amount of Rs.35,250 crore with SSR 2014-15.

3. The Government after careful examination of the proposal of the Engineer-in-Chief (Irrigation), Hyderabad hereby accord Administrative approval to the Palamuru – Rangareddy Lift Irrigation Scheme for an amount of Rs 35,200 Crore (Rupees thirty five thousand two hundred crore only).

4. The Chief Engineer(Projects), Mahabubnagar shall take necessary action accordingly.

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5. This order issues with the concurrence of Finance (W&P) Department, vide their U.O. No. 3526/133/WP/A1/15, dated:08.06.2015.

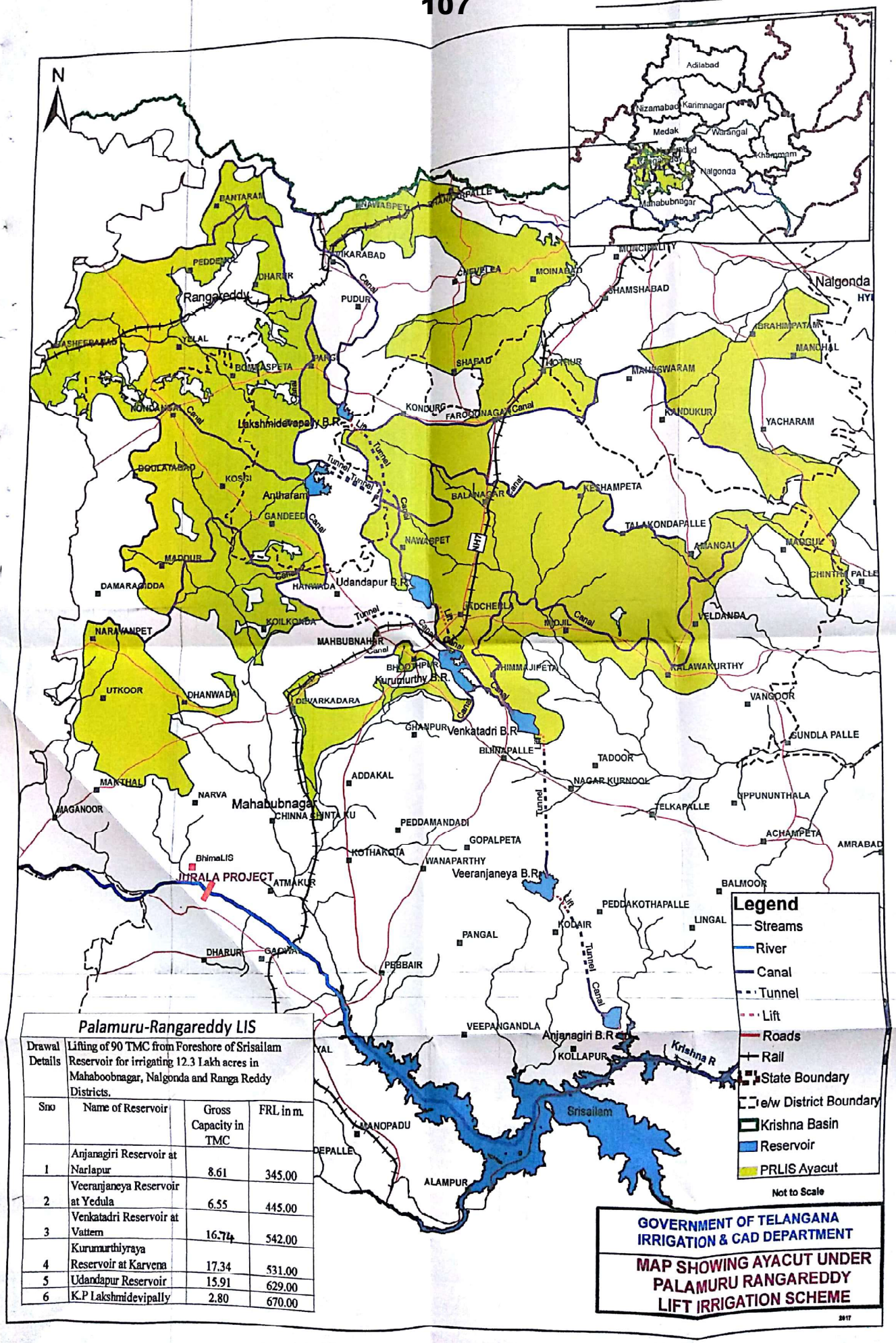
**(BY ORDER AND IN THE NAME OF THE GOVERNOR OF TELANGANA)**

**SHAILENDRA KUMAR JOSHI**
**PRINCIPAL SECRETARY TO GOVERNMENT**

To
The Engineer-in-Chief (Irrigation), Hyderabad
The Chief Engineer(Projects), Mahabubnagar
**Copy to:**
The Accountant General, T.S., Hyderabad.
The Director of Works & Accounts, Hyderabad.
The Finance (W&P) Dept.
The OSD to Minister for Irrigation.
The P.S. to Prl. Secretary.

**//FORWARDED :: BY ORDER//**

**SECTION OFFICER**




## Palamuru-Rangareddy LIS

| Drawal Details | Lifting of 90 TMC from Foreshore of Srisailam Reservoir for irrigating 12.3 Lakh acres in Mahaboobnagar, Nalgonda and Ranga Reddy Districts. | | |
|---|---|---|---|
| Sno | Name of Reservoir | Gross Capacity in TMC | FRL in m. |
| 1 | Anjanagiri Reservoir at Narlapur | 8.61 | 345.00 |
| 2 | Veeranjaneya Reservoir at Yedula | 6.55 | 445.00 |
| 3 | Venkatadri Reservoir at Vattem | 16.74 | 542.00 |
| 4 | Kurumurthiyraya Reservoir at Karvena | 17.34 | 531.00 |
| 5 | Udandapur Reservoir | 15.91 | 629.00 |
| 6 | K.P Lakshmidevipally | 2.80 | 670.00 |

**GOVERNMENT OF TELANGANA**
**IRRIGATION & CAD DEPARTMENT**

**MAP SHOWING AYACUT UNDER PALAMURU RANGAREDDY LIFT IRRIGATION SCHEME**

2017

**Annexure-6**

**Draft minutes of the 8th Meeting of the Expert Appraisal Committee for River Valley and Hydroelectric Projects held on 22.09.2017 at Teesta Meeting Hall, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi–3.**

The 8th meeting of the re-constituted EAC for River Valley & Hydroelectric Projects was held with the Chairmanship of Dr. Sharad Kumar Jain on 22.09.2017 in the Ministry of Environment, Forest & Climate Change at Teesta Meeting Hall, 1stFloor, Vayu Wing, Ground Floor, Indira Paryavaran Bhawan, Jorbagh Road, New Delhi. The following members were present:

| | | | |
|---|---|---|---|
| 1. | Dr. Sharad Kumar Jain | - | Chairman |
| 2. | Shri Sharvan Kumar | - | Representative of CEA |
| 3. | Shri N. N. Rai | - | Representative of CWC |
| 4. | Dr. Vijay Kumar | - | Rep. of MoES |
| 5. | Dr. A. K. Sahoo | - | Representative of CIFRI |
| 6. | Dr. R. Vasudeva | - | Member |
| ~~7.~~ | Shri Chetan Pandit | - | Member |
| 8. | Dr. Poonam Kumria | - | Member |
| 9. | Dr. D. M. More | - | Member |
| 10. | Dr. S. Kerketta | - | Member Secretary |

Dr. T.P. Singh, Dr. S.R. Yadav, Dr. J.A. Johnson, Dr. J.P. Shukla and Dr. Govind Chakrapani could not present due to pre-occupation. The deliberations held and the decisions taken are as under:

Item No. 8.0 Confirmation of minutes of 7th EAC meeting.

The Minutes of the 7th EAC (River Valley & Hydroelectric Projects) meeting held on 11.07.2017 were confirmed.

Item No. 8.1 Kynsi Stage-I (270 MW) in West Khasi Hills & South West Khasi Hills of Meghalaya, M/s Athena Kynsi Power Private Ltd. – **For consideration of Fresh TOR.**
Proposal No. IA/ML/RIV/67978/2017

The Project Proponent (PP) and the Consultant, M/s WAPCOS, Gurgaon and NEHU, Shillong, made a detailed presentation of the project and *inter-alia*, provided the following information:

Government of Meghalaya signed a Memorandum of Agreement (MOA) with M/s Athena Power Projects Ltd (APPL) (PP) on 11.12.2007, wherein PP has been entrusted to develop the Kynshi Stage I HEP. The PP has formed a SPV (Special Purpose Vehicle) namely Athena Kynshi Power Private Limited (AKPPL) as per terms and conditions of MoA for implementation of Kynshi - Stage I HEP. The MoA was amended on 11.02.2010. The project has been granted Concurrence by Central Electricity Authority (CEA) in March, 2015.

The Dam site is located at latitude 25$^0$26'46.81"N and longitude 91$^0$12'44.83"E on Kynshi river 3 km upstream of Nongmawpon village and about 25 km from Nongstoin, District Headquarters West Khasi Hills District. An underground Power House is located at latitude 25$^0$23'34"N and longitude 91$^0$08'46"E on Kynshi river near Nongummer village in South West Khasi Hills District and is about 65 km from Nongstoin.

Kynshi-I HEP (2x135 MW) has been contemplated as a ROR scheme with small reservoir capacity of 1.57 MCM situated in the West Khasi Hills district of Meghalaya. Dam site is located on River Kynshi, down streams of confluence of Umkyrtha River with Kynshi River. The Project will utilize a gross head of 581.00 m and design discharge of 54.86 cumecs for annual energy generation at 90% dependable year of 1078.22 million units (MU). The Project comprises a 58.10m high Concrete Gravity dam with a centrally located spillway comprising of five (5) NOF blocks and a centrally located Breast wall type Spillway having 5 bays each of size 8.50 m (w) x 11.00 m (h). All the bays have been provided with radial gates.

It is proposed to divert the Kynshi River during dam construction by using a 4.0 m diameter horse shoe shaped diversion tunnel of length 564.91 m on the right bank. The Water Conductor System (WCS) consists of an intake channel, which takes off from the left flank of the dam. The channel is 15.0 m high and has a base width of 5.0 m. The channel is designed to carry the design discharge in a slope of 1:824 over a length of 412.32 m. The intake channel feeds two surface de-silting basins of size 12.0 m (w) x 21.75 m (h) x 200.0 m (l). The de-silting basins will flush out the silt-laden water back to the river through flushing tunnels. The Head Race Tunnel measuring 4.5 m diameter horse shoe shape carries silt free water for power generation over a total length of 6,893.62 m. The headrace tunnel at its end has an 8.5 m diameter vertical simple surge shaft of over-flowing type of height 67.50 m. A 3.6 m diameter circular pressure shaft of length 1,855.29 m with a vertical shaft of 453.11 m takes water from the surge shaft to an underground powerhouse for power generation. The underground powerhouse complex comprises Machine Hall cavern and transformer-cum draft tube gate cavern. The machine hall (power house) cavern will be of 86.78 m (l) x 21.0 m (w) x 42.50 m (h) and will have 2 units of vertical axis Pelton turbines, each of 135 MW. The 166.66 MVA generator transformers (GT) and 420 kV Gas Insulated Switchgear (GIS) will be accommodated in a separate transformer cavern located 42.50m downstream of powerhouse cavern. The overall size of transformer cavern is 85.98 m (l) x 16.0 m (w) x 28.0 m (h). Main Access Tunnel (MAT) shall be of 8.0 m diameter, 1,369.28 m long to provide access to power house and transformer caverns. Two tail race tunnels of 7.6x5.0 m size of rectangular channels of length 42.50 m from draft tube to the gate and 5.25 m diameter horse shoe shaped tunnels till the junction of the two tail race tunnels. One 5.25 m diameter horse shoe shaped tunnel of length 2500.0 m from the junction point to outfall at left bank of Kynshi river. The generated energy will be pooled to CTU (Central Transmission Utility) designated pooling point through one dedicated 400 kV DC Transmission Line.

The catchment area up to the dam site has been estimated to be 615.4 $km^2$. The catchment falls between latitude $25^0$21'48"N to $25^0$36'15"N and longitude $91^0$12'12"E to $91^0$42'26"E. Long term rainfall data since 1980 is available at one station viz. Nongstoin only. The Long term run off series for Kynshi Stage- I Hydro Electric Project was formulated and the methodology and the series was cleared by CWC vide letter No. CWC No. 2/MEG/05/CEA/08-PAC/963-65 dated 08.02.2012. Based on the water availability series cleared by CWC, the 90% dependable year is 2006-07 and based on this, Power Potential studies have been carried out for the Project.

Since, the hydraulic head in case of Kynshi Stage I HEP is more than 30.0 m, accordingly it has been design to safely pass the probable maximum flood. The value of design flood is estimated to be 6,283cumecs. In view of the above, conservative value of design flood of 6,885 cumecs has been adopted and the design flood studies have been examined by CWC and design flood of 6,885 cumecs has been approved by CWC vide letter No. 2/MEG/05/CEA/08-PAC/5813-15 dated 18.07.2011.

A total of 246.71 ha of land to be required for the project. The detailed legal status of land to be acquired is not known. There is no National Park, Wildlife Sanctuary or nature/biosphere reserve within or in close proximity to the Project area of Kynshi Stage I HEP. Trees and shrubs are present in the proposed submergence area. Human settlements containing dwellings, houses or hamlets are scanty in the submergence area and in the location of project components. However, Relief & Rehabilitation measures to be adopted shall be in line with the established policies and norms of relevant authorities.

The project cost is estimated to about Rs. 2,020.47 Crores at September 2014 price level and the completed cost is about Rs. 3154.38 Crores. Kynshi Stage-I Hydro Electric Project shall be completed in 60 months time with the first unit to be commissioned at the end of the 59$^{th}$ month and the subsequent unit in the 60$^{th}$ month. The 1$^{st}$ year tariff and levelised tariff have been worked out to be Rs. 7.96 kWh and Rs. 7.16 kWh, respectively.

After deliberations and considering all the facts of the project as presented by the PP, the EAC ***recommended*** **for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. The legal status of land is to be submitted including proof of application for diversion of forestland for non-forest purpose within three months from the date of grant of ToR, to the Ministry.
ii. Provision of e-flow as per standard ToR should be ensured for the sustenance of aquatic life in the downstream river.
iii. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
iv. Information on species composition in particular to fish species from any previous study/literature should be included.
v. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
vi. Resettlement & Rehabilitation Plan – should be implemented in collaboration with the State Govt. as approved by the State Govt.
vii. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.

Item No. 8.2 Kaith Medium Irrigation Project (CCA 5,135 ha), Water Resources Department, Govt. of Madhya Pradesh - **For consideration of Fresh TOR.** Proposal No. IA/MP/RIV/67810/2017

The Project Proponent (PP) made a presentation of the project and *inter-alia*, provided the following information:

Kaith Medium Irrigation Project was started with a view to construct storage reservoir across Kaith River, a tributary of Sonar River in Dhasan-Ken Basin in the block Rehli of Sagar District. The project is planned to irrigate 5,135 ha of land with annual irrigation potential of 5,135 ha. It is a Category "B" project, but as the SEIAA in the state is not in operation, it is being appraised at Central level for grant of ToR.

The Kaith Gravity Dam is situated near Village Hanouta Khurd in Tehsil Rehli of District Sagar in Madhya Pradesh at Latitude 23$^0$40'35"N and Longitude 78$^0$55'25"E.The Kaith gravity dam is of length 600 m. The central concrete spillway is of 41 m long having capacity to pass the flood discharges of 1,164 Cumecs and routed flood discharge of 850.724 Cumecs. 3 Nos. of Radial gates of size 10×6m are proposed over the crest level and one will be standby. Non-over flow dam is 15.00 m on left and 15.00 m on right flank with maximum height 13.40 m above foundation. Similarly, another dam viz., Narayan storage earthen dam on Jharo nallah shall be constructed. The dam height is 18.14 m and length is 240 m. One Narayanpura subsidiary bund of height 14.21 m and length of 660 m has been proposed. Another Hanouta Khurd subsidiary bund has been proposed of height 7.16 m and length 630 m.

It has been further submitted that the irrigation development of Sagar district is below the state's average figure. Crop cultivation is totally dependent on rainfall and on the vagaries of monsoon. Providing irrigation will improve the economic condition of the farmers and result in efficient utilization of soil and water resources of the region. State and region are experiencing erratic rainfall, which has further worsened the situation. Fertile land is available in Rehli Tehsil where reliable irrigation system can make a great difference and yield of crop may increase many fold. Thus, this will result in overall development of the region. Also, during summer season, the ground water table goes deep and the region suffers from the acute shortage of drinking water. Creation of water bodies and developing irrigation systems in the region will result in the recharge of groundwater and improvement in ecology and will have a great positive impact on the environment and wildlife of the region.

The catchment area of the Kaith Gravity Dam is 78.50 km$^2$. The Submergence area for Kaith gravity dam at FRL is 450.18 ha (Govt. land: 48 ha, Private land: 322.268 and Forest land: 79.912 ha). By considering the upstream, downstream uses, proposed irrigation demand and water for domestic and industrial use and sediment storage, etc. the gross storage of the Kaith gravity dam shall be 22.117 MCM. The live Storage capacity of the Kaith gravity dam is 21.967 MCM out of which 1 MCM is reserved for drinking water. The total utilization for the 75% dependable year (2004-05) shall be 20.967 MCM for irrigation and 1 MCM for drinking and industrial uses.

The estimated cost of the project is Rs. 162.47 crores. The project shall be completed in 24 months. The cost per hectare on CCA is Rs. 3.164 Lakhs and cost per hectare on annual irrigation is Rs. 2.38 Lakhs with a B.C. Ratio of 1.65. It will generate employment potential during construction period. 346 Nos. persons from 142 families in 3 villages are affected due to the project.

After deliberations and considering all the facts of the project as presented by the PP, the EAC ***recommended* for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. A certificate will be submitted from CWC that utilization of water by this project will not affect the viability of the Ken-Betwa Link project, within six months from the date of grant of ToR.
ii. Provision of e-flow as per standard ToR should be ensured for the sustenance of aquatic life in the downstream river.
iii. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
iv. Total power requirement to be provided and its firm linkage to be supported with documents.
v. Proof of application for diversion of forestland for non-forest purpose will be submitted to the Ministry within one month.
vi. Detailed information on species composition in particular to fish species from any previous study/literature should be included.
vii. A detailed irrigation management plan should be worked out so that at least 10% of the CCA would be covered by micro irrigation scheme.
viii. Resettlement & Rehabilitation Plan – should be implemented in collaboration with the State Govt. as approved by the State Govt.
ix. Energy Conservation Plan is to be implemented as envisaged in the EIA / EMP report.
x. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.
xi. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
xii. The possibility of conjunctive irrigation may also be considered in the project right from the formulation stage. A detailed irrigation management plan should be worked out so that mixed irrigation (lift and flow) scheme be taken up to reduce power consumption with water account.

Item No. 8.3 Extension, Remodeling and Modernization of Kosi Canal System, Rampur district, Utter Pradesh by M/s Water Resources Department, Government of Utter Pradesh –**for Fresh TOR**

The Project Proponent (PP) and the Consultant, M/s Enviro Infra Solutions Pvt. Limited, Ghaziabad, made a presentation of the project and *inter-alia*, provided the following information:

The project is for extension /remodeling /modernization of Kosi canal system taking off from Lalpur weir across Kosi river in Rampur district of Uttar Pradesh and is under jurisdiction of the Irrigation Department, Uttar Pradesh. Built in 1895, by the then Nawab of Rampur, it encompasses a 272m long weir structure on well foundation for diverting water into Kosi canal by means of falling wooden shutters. The canal, authorized head discharge 400 cusec,

comprises of 197.63 km long distribution system to cater to CCA of 24,250 ha with annual proposed Kharif and Rabi being 15% and 12%, respectively. The irrigation intensities were subsequently raised to 32% and 25% during 1975 when the supplies were augmented from Tumariya dam through Bhalla-Kosi Feeder to the tune of 250 cusec. A single lane steel road bridge, connecting to Tanda, was subsequently added to the weir in 1932.During 1988 the piers of few bays of the weir developed serious cracks since then the bridge has been closed for heavy vehicular traffic. The road bridge on the weir is vital lifeline between Rampur to Tanda. The falling shutters, which invariably drop during first flood during July, also lower the pond level and consequently render the weir unable to divert the required/authorized discharge into canal and the system does not get sufficient water for Kharif irrigation, although the flow passes over the crest to the downstream without being diverted. The shutters are again enacted only after monsoon during October when river supplies are low and water becomes available in canals. Thus, Rabi irrigation is also adversely affected.

Against the irrigation intensities of 32% and 25% during Kharif and Rabi, respectively, an average Kharif and Rabi potential achieved is 6,184 ha (26%) and 5,825 ha (24%), respectively. Being more than122 years old and after having withstood the on-slaught of fury of historical floods in 1924 (0.94 lakh cusec), in 1947 (0.69 lakh cusec) and 2010 (1.278lakh cusec) and many flash floods, the weir had been under severe stress with its few bays, wells and downstream floor getting scoured, damaged and cracks have appeared in the downstream floor and piers and frequent boiling was encountered in the downstream bays. Damages observed from1969 revealed that the structure of Lalpur weir has outlived its useful life because some of the damages cannot be repaired and are of permanent type. Therefore, immediate construction of a new replacement barrage on the downstream was vehemently and urgently required to obviate any unfortunate situation of the sudden failure of the structure, thereby dislodging altogether the irrigation facilities in the command area of the age old system and leaving the farmers hapless. The maintenance of the old weir had become quite costly proposition and the danger of its collapse was looming large. In the wake of aforementioned technical grounds and to ward of the most frightening exigency of the irrigation system being severely affected, it is, judicious and prudent to construct a new barrage on war footing in lieu of more than century old weir well in advance before any calamity happens.

The old weir had been in precarious condition for long and its sudden washing out would have created damage to the downstream, therefore, it has been dismantled in the year 2016 in a scientific and phased manner except for the wells which are below the riverbed level. The single lane bridge has also been razed to the ground and the work of construction of a new bridge at the same site by the PWD is in progress. The canal is being run by creating a temporary bund for diverting the water and shall be fed so till the ongoing work of diversion barrage on downstream, in such emergent situation, is completed. The project envisages construction of replacement barrage and appurtenant works in lieu of age-old Lalpur weir, which has been dismantled now. It also involves remodeling of canal and distribution system to cope of with the increase in discharge from 400 cusecs to 600 cusecs, with increase in FSL at existing head regulator from 194.127 m amsl to 194.600 m amsl, and by adopting to strengthening of banks and lining of bed and sides of canal and

distributaries. Due to remodeling/modernization of canal and distribution system the existing irrigation intensities of 32% (7,760 ha) and 25% (6,063 ha) during Kharif and Rabi, respectively shall be increased to 55% (13,337 ha) and 35% (8,487 ha), respectively. The ERM project shall comprise of the following components:

- 352.02 m long gated barrage comprising of two under sluices on left and right flank each with two bays of 18m width with crest level 191.25 m amsl and gate size18x5.35 m; 13 barrage bays of 18 m width each with crest level at 191.25 m amsl, with gate size18x4.35m, designed for PMF (5,313 cumec).
- A fish ladder (1.5x1.5 m) in the left side divide wall.
- Left bank head regulator with two bays of 3 m each separated by 1.5 m wide pier with overall waterways of 7.5 m designed for 600 cusecs (16.98 cumec).
- Right bank head regulator for 150 cusecs, for irrigating command on right bank in future, shall be concurrently constructed to obviate construction complexities in future.
- Guide bunds with top width 6m and side slope 2:1, with river face pitched with 0.5 m thick paneled boulder pitching over 0.15 m sand over geo-synthetic sheet with toe wall having 3rows of boulder filled G.I. wire crates (1.5x1.5x0.9 m) shall be provided.
- The existing Lalpur-Roohella bund on left flank shall function as left afflux bund. However, right afflux bund with top width of 8 m and side slope 2:1, shall be provided as double lane approach road.
- Construction of link canal (5 km) from left head regulator with canal bed level at head193 m amsl.
- C.C. (M-15) cast in-situ lining, over PCC laid on HDPE sheet, side and bed in full length of link channel and selective reaches of Upper Kosi canal, Lower Kosi canal, Khandia dy., Bagi dy., Param dy. And Patwai dy. shall be provided in 5.0, 5.9, 5.9, 8.2, 5.7, 2.23 and 7.3 km, respectively.

For construction of the new headwork and appurtenant works, afflux bunds at Nabiganj village, about 147.36 ha land will be required of which 119.85 ha shall be acquired from private owners and balance 27.51 ha shall be the revenue land. No diversion of forestland is involved. No archaeological monument of national importance either lies in the project area or in its submergence area. No National Park, Sanctuary, Defense Establishments, Archeological Monuments, Notified Eco-sensitive areas or protected area under Wildlife (Protection) Act exist within the project area or within 15 km distance from it. The water requirement (100 kld) for construction shall be mainly met from the river water and the domestic/drinking water from underground sources from nearby private tube well. The total raw material requirement for coarse and fine aggregate and boulder comes to 0.61 lakh cum, 0.37 lakh cum and 0.32 lakh cum, respectively, which shall be met from the approved stone crushers in nearby areas. About 200 persons shall be employed during peak construction phase. The project is likely to be completed in time frame of three years.

The competent authority has accorded technical sanction of INR 23,631.77 lakh to the project, while during appraisal the EFC has accorded sanction for Rs. 21,635.90 lakh only. Therefore, in pursuance of philosophy behind the EIA Notification, dated 14.09.2006 and its subsequent amendments, it is

imperative to bring the ERM project, an infra-structure project for irrigation of command of age-old Kosi canal system, which used to take off from old Lalpur weir which has been dismantled now, in compliance with the environmental laws at the earliest.

After deliberations and considering all the facts of the project as presented by the PP, the EAC ***recommended*** **for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. As the proposed project is for extension, remodeling and modernization of existing Kosi Canal System, at least two seasons (including monsoon season) base line data shall be collected for various environmental parameters for preparation of the EIA/EMP report.
ii. As the barrage is 5 m height with minor pondage, dam break analysis of the barrage is not required.
iii. Provision of e-flow should be ensured for the sustenance of aquatic life in the downstream river.
iv. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
v. Total power requirement to be provided and its firm linkage to be supported with documents.
vi. Information on species composition in particular to fish species from any previous study/literature should be included.
vii. The possibility of conjunctive irrigation may also be considered in the project right from the formulation stage. A detailed irrigation management plan should be worked out so that mixed irrigation (lift and flow) scheme be taken up to reduce power consumption with water account.
vi. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.

Item No. 8.4 Palamuru Rangreddy Lift Irrigation Scheme, CAD and Irrigation Department, Government of Telengana, Telengana – **for fresh Scoping clearance**

The Project Proponent (PP) and the Consultant, M/s Voyants Solutions Pvt. Ltd, Gurgaon, made a presentation of the project and *inter-alia*, provided the following information:

The erstwhile Mahabubnagar, Rangareddy and Nalgonda Districts of Telangana State are the worst drought prone and distressed areas in the country. There is tremendous shortage of drinking water, as these areas are infested by fluoride. As a result, a large part of the population of the districts is being forced to migrate to other part of the country. In order to redress this situation, the Government of Telengana has taken up the Palamuru-Rangareddy Lift irrigation Scheme (PRILS) for alleviation the misery of these drought prone areas.

PRLIS is one of the foremost and largest welfare scheme being under taken by the Government to supply clean, potable water to the upland areas of Mahabubnagar, Rangareddy and Nalgonda districts by utilizing excess flood

water. The scheme in its first phase envisages lifting of 90 TMC of floodwater in 60 days during the flood season from the fore shore of the Srisailam project on Krishna river at Yellur (Village), Kollapur (Mandal) in Mahabubnagar (District) through five separate stages ending at K.P. Laxmidevipally (Village), Kondurg (Mandal) near Shadnagar town at the highest elevation. These five stages each comprise of a reservoir and conduit between each reservoir for taking the water forward with pump house being constructed wherever necessary. Water will then be drawn from selected reservoir through a separate canal and pipeline distribution network.

In view of the situation explained above, the scheme has been planned in two phases: Phase-I (Water supply project) and Phase-II (Irrigation project). The Phase-I project has been planned with 6 Nos. of reservoir and 5 Nos. of lifts for basic human consumption.

The immediate purpose for the project is to provide water for drinking and industrial uses to the enroute villages and Hyderabad city. Therefore, the 1st Phase of Palamuru-Rangareddy Lift irrigation Scheme envisages to provide drinking water facilities to enroute 1,428 villages in 74 mandals of Mahabubnagar, Rangareddy and Nalgonda district, Hyderabad city and water for industrial uses in Mahabubnagar, Rangareddy and Nalgonda districts by constructing approach channels, open channels, tunnels, pump houses and reservoirs by lifting 90 TMC of flood water in 60 days during flood season (i.e. 1.5 TMC of water per day) from foreshore of Srisailam reservoir located at Yellur (village), Kollapur Mandal in Mahabubnagar district which is the highest elevation in Mahabubnagar and Rangareddy districts with 5 stages of lifting and then utilizing water by gravity. Since, the water supply project does not fall under the purview of environmental clearance of EIA Notification, 2006, thus the project work has been initiated to resolve the drought situation on an immediate basis.

In 2nd phase, canal network will be developed from the reservoirs to create irrigation to up land areas of Mahabubnagar, Rangareddy and Nalgonda districts for an ayacut of 4.97,976 ha. Later on, this stored water shall be used for irrigation purposes in various districts through a network of canals. This irrigation project (Phase-II) is Category "A" of River Valley Projects under the provisions of EIA Notification, 2006. In addition to the drinking water facility, it is proposed to irrigate in 4,97,976 ha of CCA in the districts of Mahabubnagar, Rangareddy and Nalgonda. A total of 15,790 ha land (detailed legal status of the land on each category has not been provided) will be acquired for construction various canals network, reservoir, temporary labourers colonies, etc. No forestland is involved in the proposed project. During construction of the project, 2,700 KLD of water shall be consumed for both construction and drinking purposes and shall be drawn from surface body and groundwater. 2,944 MW of electricity will be required and M/s Telengana State Southern Power Distribution Company Limited (TSSPDCL) shall supply the same.

The Govt. of Telengana has accorded the administrative approval vide letter dated 10.06.2015 to both the projects i.e. Phase-I and Phase-II for Rs. 35,200 crores. The project is likely to be completed in 30 months including the pre-construction activities. Considering all the benefits and costs incurred on all components of the project, the BC Ratio works out to be 1.23.

After deliberations and considering all the facts of the project as presented by the PP, the committee had the concerns about Techno-Economic Viability of the project. However, the EAC ***recommended*** **for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. The scheme in its first phase envisages lifting of 90 TMC of floodwater in 60 days during the flood season from the foreshore of the Srisailam project on Krishna river at Yellur village through five separate stages, ending at K.P. Laxmidevipally village. Therefore, water availability analysis at Yelluru village (point of drawl) during monsoon season is to be submitted to ascertain sufficiency of water available.
ii. As the area is on fluoride affected zone, therefore, provisions should also be made to recharge the groundwater through proposed reservoirs to dilute fluoride levels.
iii. Groundwater be treated for removal of fluoride and then the treated water be supplied to the villagers for drinking purposes.
iv. Provision of e-flow should be ensured for the sustenance of aquatic life in the downstream river.
v. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
vi. Though, total power requirement has been provided, but its firm linkage is to be supported with documents.
vii. Proof of application for diversion of forestland for non-forest purpose will be submitted to the Ministry within one month, if any.
viii. Information on species composition in particular to fish species from any previous study/literature should be included.
ix. The clearance from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, as applicable.
x. Wildlife Conservation plan be prepared for the area located within the project and implemented by the project proponent in consultation with the State Forest Department. Wildlife Conservation plan also to be prepared for the impacted area due to construction of the project falling outside the project area and implemented by the local state Forest Department.
xi. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
xii. Resettlement & Rehabilitation Plan should be implemented as per the prevail guidelines of the Govt. of India .
xiii. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.

Item No. 8.5 Satdharu Medium lift irrigation project, Government of Madhya Pradesh – **For fresh ToR**

The Project Proponent (PP) made a detailed presentation of the project and *inter-alia*, provided the following information:

Satdharu Medium Tank projects proposed on river Satdharu, a tributary of river Byarma which finally joins river Ken. The Ken river is a tributary of

Yamuna river. The project is situated in Damoh block, Damoh district head and is 20 km away from the district headquarter at Latitude 23$^0$42'36''N and Longitude 79$^0$27'12"E.

The Satdharu dam envisages construction of 24.80 m high and 755 m long earthen dam including 64.5 m long side channel spillway on river Satdharu near village Badyau of Damoh district of Madhya Pradesh. It is designed to store 63.03 MCM lives storage of water to provide irrigation in 7,555 ha of CCA through a well-planned network of pressurized pipe irrigation network with an irrigation intensity of 100%. The project is located about 4.5 km distance from Noradehi Wildlife Sanctuary and therefore, it attracts General Condition of EIA Notification, 2006. Thus, it is categorized as Category "A" project.

Provisions of 3.00 MCM for upstream use, 24.03 MCM for Irrigation and 26.46 MCM for domestic water supply for Damoh and adjacent villages have been planned for this project. 9.54 MCM is taken for evaporation losses. There is no intercepted catchment area at Satdharu Dam site and full catchment i.e. 145.68 km$^2$ entirely lies in the State of Madhya Pradesh.

The total land of 11290.63 ha shall be submerged at FRL, of which Forestland is 969.19 ha, Culturable land is 117.92 ha, Un-culturable land is 176.85 ha and Revenue land is 26.67 ha. The cost of the project is Rs. 315.65 crore. B.C. ratio is 1.41. During construction of the project, 25 technical personnel and about 100 contractual labourers shall be employed. Total power consumption during construction shall be about 4.350 MW. A total 76 families from 4 villages will be rehabilitated due to this project.

After deliberations and considering all the facts of the project as presented by the PP, the EAC ***recommended*** **for grant of scoping clearance/ToR** for the proposed project with the following additional conditions along with standards ToR:

i. A certificate will be submitted from CWC that utilization of water by this project will not affect the viability of the Ken-Betwa Link project, within six months from the date of grant of ToR.
ii. Provision of e-flow as per standard ToR should be ensured for the sustenance of aquatic life in the downstream river.
iii. Though, total power requirement has been provided, but its firm power linkage to be supported with documents.
iv. Detailed information on species composition in particular to fish species from any previous study/literature should be included.
v. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
vi. Proof of application for diversion of forestland for non-forest purpose will be submitted to the Ministry within one month.
vii. Wildlife clearance is to be obtained from the Competent Authority as per the Wildlife (Protection) Act, 1972, as applicable.
viii. Wildlife Conservation plan be prepared for the area located within the project and implemented by the project proponent in consultation with the State Forest Department. Similarly, wildlife Conservation plan is also to be prepared for the impacted area due to construction of the project falling outside the project area and implemented by the local state Forest Department.

ix. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
x. Resettlement & Rehabilitation Plan should be implemented as per the prevail guidelines of the Govt. of India.
xi. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project.
xii. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
xiii. The possibility of conjunctive irrigation may also be considered in the project right from the formulation stage. A detailed irrigation management plan should be worked out so that mixed irrigation (lift and flow) scheme be taken up to reduce power consumption with water account.

Item No. 8.6 Rongnichu Hydroelectric Project (96 MW), East Sikkim, district Sikkim by M/s Madhya Bharat Power Corporation Ltd - **for reconsideration of Extension of Validity of Env. Clearance** Proposal No. IA/SK/RIV/10100/2006

The project was considered by EAC in its meeting held during 2-3rd March, 2017. The Project Proponent (PP) and the Consultant, M/s Pollution and Ecology Control Services, Nagpur, made a presentation of the project for an extension of validity of Environmental Clearance (EC) and *inter-alia*, provided the following information:

The proposed proposal envisages construction of 14 m high barrage on Rongnichu river (tributary of Teesta river) near Namli village in the district of East Sikkim, Sikkim state having Installed Capacity of 96 MW. This is a run-of-the river scheme. The EC was accorded on 04.04.2007 for a period of 10 years as per the provisions of EIA Notification, 1994 and 2006. The compliance status of the conditions stipulated in EC dated 04.04.2007 for Specific & General Conditions was presented in detailed along with present status of the project with the reasons for delay in its completion within the validity of EC.

The project proponent explained that the land acquisition; obtaining other mandatory clearances including Forest Clearance (FC), etc. and various pre-project activities like financial closure, award of contracts and building road & other infrastructures in mountainous terrain, etc. also took considerable time. Thus, there has been an initial delay of more than 3 years to start the actual construction work after obtaining the EC in April 2007. Further, during excavation of tunnel, extremely poor geology was encountered, this and other geological difficulties of lower Himalayan region resulted in slower pace of work.

The PP further assured the committee that problems have now been over-come and presently, the work is progressing smoothly in all fronts without any hindrance. About 85% underground excavation work and about 50% of concreting work is complete. Electro Mechanical (Power House) and Hydro-Mechanical (Barrage) & Steel lining will commence in April-June, 2017 and it was further mentioned that they are confident of meeting the Scheduled Commissioning date of December 2018 as approved by the Government of

Sikkim. After detailed deliberations and considering all the facts of the project as presented by the PP along the Consultant, the EAC observed that the minor deviations encountered while taking up the project and it may not be treated as violation. It was informed to the EAC that as per OM dated14.09.2016, a provision of 3 years of extension of validity in case of River Valley & Hydroelectric Power Projects exists.

During appraisal, the Committee observed that the request made by project proponent for validity of extension of EC appears to be reasonable, since the 85% of the underground excavation work and 50% concrete work is complete and the remaining works will be initiated during April-May, 2017, the EAC recommended for extension of validity of EC initially for a period of 6 months in order to facilitate the PP to submit compliance and monitoring report from RO, MoEF& CC, Shillong. Based on the report, the extension for remaining2 $^{1}/_{2}$ years could be granted. Accordingly, the Ministry granted 6 months extension of the validity of EC on 16.6.2017.

The PP submitted the monitoring report by RO, MoEF, Shillong (site inspection conducted on 11-12th August, 2017); modified application Form-I and six monthly compliance status report (for the period 1.1.2017 to 30.6.2017) on EC conditions granted for the project. During appraisal the Committee observed that the point-wise compliance conditions as reported by the RO, Shillong, MoEF& CC is found to be satisfactory. Further, now 85% of the underground excavation work and 50% concrete work is complete and the remaining works will be initiated during April-May, 2017. The balance work would now be completed in remaining 2½ years.

After deliberations and considering all the facts of the project as presented by the PP based on the monitoring report on the status of compliance of EC conditions submitted by the Regional Office, MoEF&CC, Shillong. The EAC ***recommended*** **for grant of** extension of the validity of EC for the remaining 2½ years with the following additional conditions:

i. Till the Primary Health Centre are established, a mobile van be provided. It will be equipped with medical health care facilities so that the people of Namil and Namchiong villages would transfer their patients to the nearby District Health Care Centers.
ii. A plan be prepared with a time-bound implementation programme (both Engineering and biological measures) for stabilization of inactive muck disposal sites and submitted to the Ministry and its Regional Office, Shillong.
iii. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.

Item No. 8.7 Basaveshwara Lift Irrigation Scheme in Belagavi District of Karnataka by Karnataka Neeravari Ltd., Government of Karnataka - **Reconsideration of Env. Clearance**
Proposal No. IA/KA/RIV/63339/2015

In earlier meeting of EAC held on 12.04.2017, the Project Proponent (PP) and the Consultant, M/s Health and safety Consultant, Bengaluru had made a presentation of the project and *inter-alia*, provided the following information.

The project involves lifting of 4 TMC water from Krishna River in Belgaon District to provide irrigation facility to 27,462 ha benefiting 22 villages Kharif season. The 2. 5 TMC of water is proposed to draw through an intake canal for a length of 1.25 m on Krishna River near old Ainapura village in Athani Taluka, which is 20 km away from Athani town. Thereafter, water is to be pumped to the delivery chamber through MS rising main of 15.9 km long. The project has two major gravity canals viz. south canal of 3.68 km long to irrigate 1313 ha & North canal of 59.92 km long to irrigate 26,149 ha. The total land requirement is about 420 ha. No submergence is envisaged in the project. Interstate boundary with Maharashtra is located at a distance of 1 km from the boundary of the command area. The estimate project cost is about Rs. 1,120 Crores.

The Scoping/ToR clearance was granted on 17.11.2015 for a period of 3 years. The Public Hearing was conducted in Ainapur village, Athani Taluk, Bagalkot District on 10.2.2017. PP informed that all the issues raised during the Public Consultation have been incorporated in the EIA/EMP report. The socio-economic impact assessment was carried out separately and report was also submitted. Thereafter, the final EIA/EMP reports were submitted to the Ministry for environment clearance.

The project was earlier considered by EAC in its meetings held on 12.04.2017 and 24-25th August, 2017. The various environmental aspects covering catchment area, submergence area and project influence area, i.e. area within 10 km radius from main project components have been considered. The baseline data has been collected covering Physico-chemical aspects, biological aspects and socio-economic aspects. Three seasons' data have been collected for air, noise, water, soil and ecological aspects. Impacts during construction and operation phases have been assessed and mitigation measures suggested minimizing the anticipated impacts. The EMP has been prepared based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders with the details as under:

**Table: Cost estimates for implementation of EMP**

| Sl. No. | EMP heads | Cost (Rs. in lakhs) |
|---|---|---|
| **A.** | **Construction Phase** | |
| 1. | Air Pollution Control | 26.00 |
| 2. | Noise Pollution Control | 0.50 |
| 3. | Water Pollution Control | 1.50 |
| 4. | Solid &Hazardous Waste Management | 3.00 |
| 5. | Greenbelt Development | 243.77 |

| | | |
|---|---|---|
| 6. | Agro Forestry Activities | 27.46 |
| 7. | Fisheries Development | 10.00 |
| 8. | Socio-economic Environment | 9395.00 |
| 9. | Environmental Monitoring | 55.40 |
| 10. | Implementation of CAT plan | 968.00 |
| **B. Operation Phase** | | |
| 10. | Environmental Monitoring | 11.52 |
| 11. | Greenbelt Maintenance | 30.00 |
| | **Total** | 10,772.15 |

After detailed deliberations and considering all the facts of the project as presented by the PP, the EAC sought additional information and PP submitted the compliance report and the same and has been presented during 7th EAC meeting held on 24-25th August, 2017. The EAC satisfied with the report, however, EAC opined that the PP constructing a project from his own funds results in avoidance of examination by the CWC for hydrology, and for interstate aspect. Vetting by CWC for these two aspects is essential. Therefore, it was decided that even if the PP is to construct the project from his own funds, EC will be given only after PP produces the clearance from CWC for hydrology and interstate aspect. PP has not obtained the clearance from CWC for hydrology and inter-state aspect. Therefore, the Committee advised the PP to obtain the same.

Based on the query raised by EAC, the PP submitted a letter enclosing CWC guidelines of 2017 wherein, it has been mentioned that –

"*Environmental clearance is one the pre-requisite for examination of the DPR for issue of CWC clearance. Further, the Technical Advisory Committee (TAC) of CWC will not appraise the project for CWC clearance until submission of environmental clearance"*

After deliberations and considering the facts of the project as presented by the PP, the Committee again reiterated that since the PP is constructing this project from his own funds, it is not being examined by the CWC for hydrology, and for interstate aspect. The Committee opined that such examination by CWC for these two aspects is essential and would be helpful for all concerned. Therefore, it was decided that, even if, the PP is to construct the project from his own funds, EC will be given only after PP produces the clearance from CWC for hydrology and interstate aspect.

As clearances from CWC for hydrology and inter-state aspect have not been obtained, the Committee **deferred the proposal** and advised the PP to obtain the same. Thereafter, the proposal will be reconsidered in a subsequent EAC meeting.

Item No. 8.8 Veerabhadreshwara Lift Irrigation Scheme in Bagalkot District of Karnataka by Karnataka Neeravari Ltd., Government of Karnataka - **Reconsideration of Environment Clearance.**

In the meeting of EAC held on 12.04.2017, the Project Proponent (PP) and the Consultant, M/s Health and safety Consultant, Bengaluru made a presentation of the project and *inter-alia*, provided the following information:

The project involves lifting of 2.5 TMC water from Ghataprabha River in Bagalkot District (Karnataka), to provide irrigation to 17,377 ha of land. This project is likely to benefit 34 villages during Kharif season (June-September). The 2.5 TMC of water is proposed to draw through an intake canal for a length of 100m on Ghataprabha River. Thereafter, the water is proposed to be pumped to delivery chamber through MS raising main of 7.6 km length. The project has two major gravity canals, viz. Hosakoti canal of 13 km long to irrigate 5,900 ha & Sallahalli canal of 20 km long to irrigate11,477 ha. The project also proposes to fill 10 Minor Irrigation Tanks within the command area. The total land requirement is about 125 ha. The estimated project cost is Rs. 544 crores.

The Scoping/ToR clearance was granted on 17.11.2015 for a period of 3 years. The Public Hearing was conducted at Killa Hosakoti Village, Mudhol Taluk, Bagalkot District on 13.1.2017 and at Boodaanur Village, Belagavi District on 7.2.2017 of Karnataka state. PP informed that all the issues raised during the Public Consultation have been incorporated in the EIA/EMP report. The socio-economic impact assessment was carried out separately and report was also submitted. Thereafter, the final EIA/EMP reports were submitted to the Ministry for environment clearance.

The project was earlier considered by EAC in its meetings held on 12.04.2017 and 24-25th August, 2017. The various environmental aspects covering catchment area, submergence area and project influence area, i.e. area within 10 km radius from main project components have been considered. The baseline data has been collected covering Physico-chemical aspects, biological aspects and socio-economic aspects. Three seasons' data have been collected for air, noise, water, soil and ecological aspects. Impacts during construction and operation phases have been assessed and mitigation measures suggested minimizing the anticipated impacts. The EMP has been prepared based on predicted impact, actual requirement and incorporating suggestions of local people, stakeholders with the details as provided in the table below:

**Table: Cost estimates for implementation of EMP**

| Sl. No. | Environmental Management Plan | Cost (Rs.in lakhs) |
|---|---|---|
| **A.** | **Construction Phase** | |
| 1. | Air Pollution Control | 28.6 |
| 2. | Noise Pollution Control | 0.25 |
| 3. | Water Pollution Control | 1.75 |
| 4. | Solid & Hazardous Waste Management | 2.45 |
| 5. | Greenbelt Development | 1273.00 |
| 6. | Agro Forestry Activities | 17.40 |
| 7. | Fisheries Development | 10.00 |
| 8. | Socio-economic Environment | 1977.00 |

| | | |
|---|---|---|
| 9. | Environmental Monitoring | 45.88 |
| 10. | Implementation of CAT plan | 1885.00 |
| **B.** | **Operation Phase** | |
| 10. | Environmental Monitoring | 10.74 |
| 11. | Greenbelt Maintenance | 30.00 |
| **Total** | | **5,282.00** |

After detailed deliberations and considering all the facts of the project as presented by the PP, the EAC sought additional information and PP submitted the compliance report and the same and has been presented during 7th EAC meeting held on 24-25th August, 2017. The EAC was satisfied with the report. However, EAC opined that since the PP is constructing the project from his own funds, it results in avoidance of examination by the CWC for hydrology, and for interstate aspect. Vetting by CWC for these two aspects is important and essential. Therefore, it was decided that even if the PP is to construct the project from his own funds, EC will be given only after PP produces the clearance from CWC for hydrology and interstate aspect. PP has not obtained the clearance from CWC for hydrology and inter-state aspect. Therefore, the Committee advised the PP to obtain the same.

Based on the query raised by EAC, the PP submitted a letter enclosing CWC guidelines of 2017 wherein, it has been mentioned that –

"*Environmental clearance is one the pre-requisite for examination of the DPR for issue of CWC clearance. Further, the Technical Advisory Committee (TAC) of CWC will not appraise the project for CWC clearance until submission of environmental clearance"*

After deliberations and considering the facts of the project as presented by the PP, the Committee again reiterated that the PP constructing a project from his own funds results in avoidance of examination by the CWC for hydrology, and for interstate aspect. The Committee opined that CWC gives clearances at various stages and vetting by CWC for these two aspects is helpful and essential. Therefore, it was decided that, even if, the PP is to construct the project from his own funds, EC will be given only after PP produces the clearance from CWC for hydrology and interstate aspect.

As clearances from CWC for hydrology and inter-state aspect have not been obtained, the Committee **deferred the proposal** and advised the PP to obtain these clearances from CWC. Thereafter, the proposal will be reconsidered in a subsequent EAC meeting.

Item No. 8.9 Additional Study for Cumulative Impact Assessment & Carrying Capacity Study (CIA & CCS) of Lower Subansiri Basin in Arunachal Pradesh – **Presentation before EAC**.

The Consultant, M/s IRGS who prepared the CIA and CCS report could not be present and sought leave of absence from the meeting. Therefore, the proposal has been deferred to the next EAC meeting.

Item No. 8.10 Standardization of Environmental Clearance conditions of River Valley projects - **Presentation before EAC**.

As per the decision taken in the Ministry, standardization of Specific EC conditions for River Valley Projects has been presented before the EAC by the EAC secretariat. After deliberations and considering the presentation made by the EAC Secretariat, the Committee decided that the standardization of Specific EC conditions for River Valley Projects may be circulated again to all the Members so that they may offer their comments. The matter shall be considered again in the next EAC meeting. The proposal has accordingly been **deferred.**

Item No. 8.11 Any other item with the permission of the Chair

As, there was no Agenda Item left for discussion, the meeting ended with thanks to the Chair.

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Subject: **Approved minutes - 8th meeting (RVH)**
To: "Dr S. Kerketta" <s.kerketta66@gov.in>,
"Dr S. Kerketta" <suna1466@rediffmail.com>

Date: 09/29/17 09:33 AM
From: Sharad Jain <s_k_jain@yahoo.com>
Reply-To: Sharad Jain <s_k_jain@yahoo.com>

8th_EAC_Meeting_22.09.2017_Approved minutes.docx (95kB)

Dear Dr Kerketta,
I am sending the approved minutes of the 8th meeting of EAC (RVH). I assume that all the data and information reported in the minutes has been carefully checked by you and is correct.

Regards,

Sharad Jain

NIH Roorkee

**Annexure-7**

No.- J-12011/31/2017-IA-I (R)
Ministry of Environment, Forests and Climate Change
Government of India
[IA-I Division]

Indira Paryavaran Bhawan
3rd Floor, Vayu Wing
Jor Bagh Road
New Delhi-110003
**Dated: 11th October 2017**

To
Shri V. Lingaraju
Chief Engineer
Irrigation and CAD Department
Government of Telangana,
5th Floor, Jalasoudha Building, Erramanzil,
Hyderabad - 500082

Subject: **Palamaru Rangareddy Lift Irrigation Scheme in Mahbubnagar, Rangareddy & Nalgonda Districts of Telangana by Irrigation and CAD Department, Government of Telangana - TOR - regd.**

Sir,

This has reference to your letter No. CE/PRLIS/DCE/O.T-1/T.S1/2215 dated 28.8.2017 on the above-mentioned subject.

2. The above proposal was appraised by the Expert Appraisal Committee (EAC) for River Valley & Hydroelectric Power Projects (RV & HEP) in its 8th meeting held on 22.9.2017. The comments and observations of EAC may be seen in the Minutes of the meeting that are available on the Ministry's website.

3. It was noted that the scheme in its first phase envisages lifting of 90 TMC of flood water in 60 days during the flood season from the fore shore of the Srisailam reservoir on Krishna river at Yellur (V), Kollapur (M) in Mahabubnagar (D) through 5 separate stages to provide drinking water facilities to enroute 1428 villages in 74 mandals of Mahabubnagar, Rangareddy and Nalgonda Districts, Hyderabad City and also envisages to provide water for industrial use in Mahabubnagar, Rangareddy and Nalgonda Districts. The Cultural Command Area (CCA) is 4,97,976 ha. The total land requirement for the project is 15,790 ha. There is no displacement as no habitation is coming under submergence.

4. In 2nd phase, canal network will be developed from the reservoirs to create irrigation to up land areas of Mahabubnagar, Rangareddy and Nalgonda districts for an ayacut of 4.97,976 ha. Later on, this stored water shall be used for irrigation purposes in various districts through a network

of canals. In addition to the drinking water facility, it is proposed to irrigate in 4,97,976 ha of CCA in the districts of Mahabubnagar, Rangareddy and Nalgonda. A total of 15,790 ha land will be acquired for construction various canals network, reservoir, temporary labourers colonies, etc. No forestland is involved in the proposed project.

5. The proposed project is located at a distance of 11.95 km from the core of Amrabad Tiger Reserve, 2.56 km from the buffer and 1.56 from the proposed Eco-Sensitive Zone (ESZ) of Amrabad Tiger Reserve. The total cost of the project is about Rs. 35,200 Crores and likely to be completed in 30 months.

6. Based on recommendations of the EAC, the Ministry of Environment, Forest & Climate Change, hereby accords a fresh clearance for pre-construction activities at the proposed site as per the provisions of the Environmental Impact Assessment Notification, 2006 and subsequent amendment, 2009 along with the following Terms of Reference (ToR) for the preparation of EIA/ EMP report:

a) The EIA/EMP report should contain the information in accordance with provisions & stipulations as given in the **Annexure-I**.

b) The consultant engaged for preparation of EIA/EMP report has to be registered with Quality Council of India (QCI/ NABET under the scheme of Accreditation & Registration of MoEF. This is a pre-requisite.

c) Consultant shall include a "Certificate" in EIA/EMP report regarding portion of EIA/EMP prepared by them and data provided by other organisation(s)/ laboratories including status of approval of such laboratories.

d) The draft EIAA/EMP report prepared as per **Annexure-I** should be submitted to the State Pollution Control Board Committee concerned for conducting Public Consultation as per the provisions stipulated in EIA Notification of 2006. Public Hearing, which is a component of Public Consultation, shall be held district wise at the site or in its close proximity as prescribed in Appendix (IV) of EIA Notification, 2006. The draft EIA/EMP report is to be submitted to SPCB etc. sufficiently before the expiry of the ToR validity so that necessary amendments in EIA/EMP can be undertaken based on public hearing and the same is submitted to MoEF&CC before expiry of validity.

e) The PP has disclosed during the TOR presentation that Monsoon season data has been collected in 2017 for this project and requested the EAC to accept the same for use in the EIA/EMP report. The committee accepts that the Monsoon data collected can be included in the EIA/EMP report.

f) All issues discussed in the Public Hearing / Consultations should be addressed and incorporated in the EIA/EMP report. Final EIA/EMP report should be submitted to the Ministry for Environmental

Clearance only after incorporating these issues before the expiry of validity of ToR.

g) The ToR will remain valid for a period of 4 years from the date of issue of this letter for submission of EIA/EMP report along with public consultation. The ToR will stand lapsed on completion of 4 years in case final EIA/EMP is not submitted and the validity is not extended.

h) In case of any change in the scope of the project such as capacity enhancement, change in submergence, etc., fresh scoping clearance has to be obtained by the project proponent.

i) The PP should submit a copy of TEC of the DPR along with EIA/EMP report.

j) Information pertaining to Corporate Environmental Responsibility and Environmental Policy shall be provided in the EIA/EMP Report as per this Ministry's OM No. J-11013/25/2014-IA-I dated 11.08.2014 (Reference as **Annexure-II**)

k) The EIA/ EMP report must contain an Index showing details of compliance of all TOR conditions. the Index will comprise of page no. etc., vide which compliance of a specific ToR is available. It may be noted that without this index, EIA/ EMP report will not be accepted.

l) In case the validity is to be extended, necessary application is to be submitted to Regulatory Authority before expiry of validity period together with an updated Form-I based on proper justification.

This has approval of the Competent Authority.

Yours faithfully,

**(Dr. S. Kerketta)**

Director

**Copy to:**

1. The Secretary, Ministry of Water Resources, Shram Shakti Bhawan, Rafi Marg, New Delhi – 1.
2. The Principal Secretary (Irrigation), Government of Telangana, Secretariat, Hyderabad – 500 001.
3. The Secretary, Department of Environment & Forest, Government of Telangana, Secretariat Hyderabad – 500 022.
4. The Chief Engineer, Project Appraisal Directorate, Central Water Commission, Sewa Bhawan, R. K. Puram, New Delhi – 110 066.
5. The Addl. PCCF (C), Ministry of Environment, Forest and Climate Change, Regional Office (SEZ), 1st and 2nd Floor, Handloom Expert Promotion Council, 34, Cathedral Garden Road, Nungambakkam, Chennai – 600 034.

(3)

6. The Member Secretary, Telangana State Pollution Control Board, Paryavaran Bhawan, Industrial Estate, Sanath Nagar, Hyderabad.
7. Guard File.

**(Dr. S. Kerketta)**
Director

(4)

Annexure-I

**TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR 'A' CATEGORY RIVER VALLEY PROJECTS AND INFORMATION TO BE INCLUDED IN EIA/EMP REPORT**

**(1) Scope of EIA Studies**

The EIA Report should identify the relevant environmental concerns and focus on potential impacts that may change due to the construction of proposed project. Based on the baseline data collected for three (3) seasons (Pre-monsoon, Monsoon and winter seasons), the status of the existing environment in the area and capacity to bear the impact on this should be analyzed. Based on this analysis, the mitigation measures for minimizing the impact shall be suggested in the EIA/EMP study.

**(2) Details of the Project and Site**

- General introduction about the proposed project.
- Details of project and site giving L.-sections of all U/S and D/S projects of River with all_ relevant maps and figures. Connect such information as to establish the total length of interference of Natural River and the committed unrestricted release from the site of diversion into the main river.
- A map of boundary of the project site giving details of protected areas in the vicinity of project location.
- Location details on a map of the project area with contours indicating main project features. The project layout shall be superimposed on a contour map of ground elevation showing main project features (viz, location of dam, Head works, main canal, branch canals, quarrying etc.) shall be depicted in a scaled map.
- Layout details and map of the project along with contours with project components clearly marked with proper scale maps of at least a 1:50,000 scale and printed at least on A3 scale for clarity.
- Existence of National Park, Sanctuary, Biosphere Reserve etc. in the study area, if any, should be detailed and presented on a map with distinct distances from the project components.
- Drainage pattern and map of the river catchment up to the proposed project site.
- Delineation of critically degraded areas in the directly draining catchment on the basis of silt Yield Index as per the methodology of All India Soil and Land Use Survey of India.
- Soil characteristics and map of the project area.
- Geological and seismo-tectonic details and maps of the area surrounding the proposed project site showing location of dam site and canal site.
- Remote Sensing studies, interpretation of satellite imagery, topographic sheets along with ground verification shall be used to develop the land use/land cover pattern of the study using overlaying mapping techniques viz. Geographic Information System (GIS), False Color composite (FCC) generated front satellite data of project area.
- Land details including forests, private and other land.

- Demarcation of snow fed and rain fed areas for a realistic estimate of the water availability.

**(3) Description of Environment and Baseline Data**

To know the present status of environment in the area, baseline data with respect to environmental components air, water, noise, soil, land and biology & biodiversity (flora & fauna), wildlife, socio-economic status etc. should be collected with 10 km radius of the main components of the project/site i.e. dam site and power house site. The air quality and noise are to be monitored at such locations which are environmentally & ecologically more sensitive in the study area. The baseline data should be collected for 3 seasons (Pre-Monsoon, Monsoon and Post Monsoon seasons). Flora/fauna in the catchment area and command area should be documented. The study area should comprise of the following:

- Catchment area up-to the darn site.
- Submergence Area
- Project area or the direct impact area should comprise of area falling within 10 km radius from periphery of reservoir, land coming under submergence and area downstream of dam

**(4) Details of the Methodology**

- The methodology followed for collection of base line data along with details of number of samples and their locations in the map should be included.
- Study area should be demarcated properly on the appropriate scale map.
- Sampling sites should be depicted on map for each parameter with proper legends.
- For forest classification, Champion and Seth (1968) classification should be followed.

**(5) Methodology for collection of Biodiversity Data**

- The number of sampling locations should be adequate to get a reasonable idea of the diversity and other attributes of flora and fauna. The guiding principles should be the size of the study area (larger area should have larger number of sampling locations) and inherent diversity at the location, as known from secondary sources (e.g. eastern Himalayan and low altitude sites should have a larger number of sampling locations owing to higher diversity).

- The entire area should he divided in grids of 5km X 5km preferably on a GIS domain. There after 25% of the grids should be randomly selected for sampling of which half should be in the directly affected area (grids including project components such as reservoir, clam, powerhouse, tunnel, canal etc.) and the remaining in the rest of the area (areas of influence in 10 km radius form project components). At such chosen location, the size and number of sampling units (e.g. quadrats in case of flora/transects in case of fauna) must be decided by species area curves and the details of the same (graphs and cumulative number of species in a tabulated form) should be provided in the EIA report. Some of the grids on the edges may not be completely overlapping with the study area boundaries. However these should be counted and considered for selecting 25% of the grids. The number of grids to be surveyed may come out as a

decimal number (i.e.it has an integral and a fractional part) which should he rounded to the next whole number.

- The conventional sampling is likely to miss the presence of rare, endangered and threatened (R.E.T.) species since they often occur in low densities and in case of faunal species are usually secretive in behavior. Reaching the conclusion about the absence of such species in the study area based on such methodology is misleading. It is very important to document the status of such species owing to their high conservation value. Hence likely presence of such species should be ascertained from secondary sources by a proper literature survey for the said area including referring to field guides which are now available for many taxonomic groups in India. Even literature from studies/surveys in the larger landscapes which include the study area for the concerned project must he referred to since most species from adjoining catchments is likely to be present in the catchments in question. In fact such literature form the entire state *can* be referred to. Once a listing of possible R.E.T. species form the said area is developed, species specific methodologies should he adopted to ascertain their presence in the study area which would be far more conclusive as compared to the conventional sampling. If the need *be,* modern methods like camera trapping can be resorted to, particularly for areas in the eastern Himalayas and for secretive/nocturnal species. A detailed listing of the literature referred to, for developing lists of R.E.T. species should be provided in the EIA reports.

- The R.E.T. species referred to in this point should include species listed in Schedule I and II of Wildlife (Protection) Act, 1.972 and those listed in the red data books (BSI, ZSI and IUCN).

**(6) <u>Components of the EIA Study</u>**

Various aspects to be studied and provided in the EIA/EMP report are as follows:

**A. Physical and Chemical Environment**

**(i) Geographical, Geological & Geophysical Aspects and Seismo-Tectonics:**

- Physical geography, Topography, Regional Geological aspects and structure of the Catchment.
- Tectonics, seisrnicitv and history of past earthquakes in the area. A site specific study of the earthquake parameters will be done. The results of the site specific earthquake design shall be sent for approval of the NCSDP (National committee of Seismic Design Parameters, Central water commission, New Delhi. for large dams.
- Landslide zone or area prone to landslide existing in the study area should be examined.
- Presence of important economic mineral deposit, if any.
- Justification for location & execution of the project in relation to structural components (darn height).
- Impact of project on geological environment.

**(ii) Meteorology, Air and Noise:**

- Meteorology (viz. Temperature, Relative humidity, wind speed/ direction etc.) to be collected from nearest IMD station.

- Ambient Air Quality with parameters viz. suspended particulate matter (SPM), respirable suspended particulate matter (RSPM) i.e. suspended particulate matter <10 microns, sulphur dioxide ($SO_2$) and oxide of Nitrogen ($NO_x$) in the study area at 6 locations.
- Existing noise levels and traffic density in the study area at 6 locations.

**(iii) Soil Characteristics**

- Soil classification, physical parameters (viz., texture, porosity, bulk density and water holding capacity) and chemical parameters (viz. pH, electrical conductivity, magnesium, calcium, total alkalinity, chlorides, sodium, potassium, organic carbon, available potassium, available phosphorus, SAR, nitrogen and salinity, etc.) (6 locations).

**(iv) Remote sensing and GIS Studies**

- Generation of thematic maps viz., slope map, drainage map, soil map, land use and land cover map, etc. Based on these, thematic maps, an erosion intensity map should be prepared.
- New configuration map to be given in the EIA Report.

**(v) Water Quality**

- History of the ground water table fluctuation in the study area.
- Water quality for both surface water and ground water for (i) Physical parameters (pH, temperature, electrical conductivity, TSS); (ii) Chemical parameters (Alkalinity, Hardness, BOD, COD, NO2, PO4, CI, SO4, Na, K, -Ca, Mg, Silica, Oil & Grease, phenolic compounds, residual sodium carbonate); (iii) Bacteriological parameter (MPN, Total conform) and (iv) Heavy Metals (Pb, As, Fig, Cd, Cr-6, total Cr, Cu, Zn, Fe) (6 locations).
- Delineation of sub and micro-watersheds, their locations and extent based on the All India Soil and Land Use Survey of India (AISLUS), Department of Agriculture, Government of India. Erosion levels in each micro-watershed and prioritization of micro-watershed through silt yield index (SYI) method of AISLUS

**B. Water Environment and Hydrology**

- Hydro-Meteorology of the project viz. precipitation (snowfall, rainfall), temperature, relative humidity, etc. Hydro-meteorological studies in the catchment area should be established along-with real time telemetry and data acquisition system for inflows monitoring.
- Run off, discharge, water availability for the project, etc.
- Basin characteristics.
- Catastrophic events like cloud bursts and flash floods, if any, should be documented.
- For estimation of Sedimentation Rate, direct sampling of river flow is to be done during the EIA study. The study should be conducted for minimum 1 year actual silt flow rate to be expressed in ha-in $km^2$ year-1.
- Sedimentation data available with CWC may be used to find out the loss in storage over the years.
- Set-up G&D monitoring station in the catchment area for collecting data during the investigation.
- Flow series, 10 daily with 90%, 75%,and 50% dependable years discharges.

- A table of 10 daily water discharge in 75% dependable year showing the intercepted discharge at the barrage, diversion for irrigation, environmental and other flow releases downstream of the barrage shall be included in the EIA report.
- Environmental flow release would be 20% of average of four consecutive months of 90% dependable year in lean season, 25% in non-monsoon & non-lean season and 30% in monsoon to be followed corresponding to 90%dependable year. A site specific study on minimum environment flow should be carried out
- Hydrological studies/data as approved by CWC shall be utilized in the preparation of ETA/EMP report. Actual hydrological annual yield may also be given in the report.
- A minimum of 1 km distance from the tip of the reservoir to the tail race tunnel should be maintained between upstream and downstream projects.

**C Biological Environment**

Besides primary studies, review of secondary data/literature published for project area on flora & fauna including RET species shall be reported in EIA/EMP report

**(i) Flora**

- Characterization of forest types (as per Champion and Seth method) in the study area and extent of each forest type as per the Forest Working Plan.
- Documentation of all plant species i.e. Angiosperm, Gymnosperm, Pteriodophytes, Bryophytes (all groups). All species list should be provided.
- General vegetation profile and floral diversity covering all groups of flora including *lichens* and orchids. A species wise list may be provided.
- Assessment of plant species with respect to dominance, density, frequency, abundance, diversity index, similarity index, importance value index (WI) , Shannon Weiner index etc. of the species to be provided. Methodology used for calculating various diversity indices along with details of locations of quadrates, size of quadrates etc. to be reported within the study area in different ecosystems.
- Existence of National park, Sanctuary, Biosphere Reserve etc in the study area, if any, should be detailed.
- Economically important species like medicinal plants, timber, fuel wood etc.
- Details of endemic species found hi the project area.
- Flora under RET categories should be documented using International Union for the Conservation of Nature and Natural Resources (IUCN) criteria and Botanical Survey of India's Red Data list along-with economic significance. Species diversity curve for RET species should be given.
- Cropping pattern and Horticultural Practices in the study area.
- Biodiversity study shall be carried out by associating a reputed organization as per the list of such institutes is available on Moef & CC website.

**(ii) Fauna:**

- Fauna study and inventorisation should be carried out for all groups of animals in the study area. Their present status along with Schedule of the species.
- Information (authenticated) on Avi-fauna and wildlife in the study area.
- Status of avifauna their resident/ migratory/ passage migrants etc.
- Documentation of butterflies, if any, found in the area.

- Details of endemic species found in the project area.
- RET species-voucher specimens should be collected along-with GPS readings to facilitate rehabilitation. RET faunal species to be classified as per IUCN Red Data list and as per different schedule of Indian Wildlife (Protection) Act, 1972.
- Existence of barriers and corridors, if any, for wild animals.
- Compensatory afforestation to compensate the green belt area that will be removed, if any, as part of the proposed project development and loss of biodiversity.
- Collection of primary data on agricultural activity, crop and their productivity and irrigation facilities components.

**D Aquatic Ecology**

- Documentation of aquatic fauna like macro-invertebrates, zooplankton, phytoplantkton, benthos etc.
- Fish and fisheries, their migration and breeding grounds.
- Fish diversity composition and maximum. length & weight of the measured populations to be studies for estimation of environmental flow.
- Conservation status of aquatic fauna.
- Sampling for aquatic ecology and fisheries must be conducted during the 3 seasons – Pre-monsoon (summer), monsoon and winter. Sizes (length & weight) of important fish species need to be collected and breeding and feeding grounds should be identified along the project site or in vicinity.

**E Socio-Economic**

- Collection of baseline data on human settlements, health status of the community and existing infrastructure facilities for social welfare including sources of livelihood, job opportunities and safety' and security of workers and surroundings population.
- Collection of information with respect to social awareness about the developmental activity in the area and social .welfare measures existing and proposed by project proponent.
- Collection of information on sensitive habitat of historical, cultural and religious and ecological importance.
- The socio-economic survey/ profile within 10 km of the study area for demographic profile; Economic Structure; Developmental Profile; Agricultural Practices; Infrastructure, education facilities; health and sanitation facilities; available communication network etc.
- Documentation of demographic, Ethnographic, Economic Structure and development profile of the area.
- Information on Agricultural Practices, Cultural and aesthetic sites, Infrastructure facilities etc.
- Information on the dependence of the local people on minor forest produce and their cattle grazing rights in the forest land.
- List of all the Project Affected Families with their name, age, educational qualification, family size, sex, religion, caste, sources of income, land & house holdings, other properties, occupation, source of income., house/land to be acquired for the project and house/land left with the family, any other property, possession of cattle, type of house etc.
- In addition to socio-economic aspects of the study area, a separate chapter on socio-cultural aspects based upon study on Ethnography of the area should be provided.

## (7) Impact Prediction and Mitigation Measures

The adverse impact due to the proposed project should be assessed and effective mitigation steps to abate these impacts should be described,

### (i) Air Environment

- Changes in ambient and ground level concentrations due to total emissions from point, line and area sources.
- Effect on soil, material, vegetation and human health.
- Impact of emissions from DG set used for power during the construction, if any, on air environment.
- Pollution due to fuel combustion in equipment and vehicles
- Fugitive emissions from various source

### (ii) Water Environment

- Changes in surface and ground water quality
- Steps to develop pisci-culture and recreational facilities
- Changes in hydraulic regime and downstream flow.
- Water pollution due to disposal of sewage
- Water pollution from labour colonies/ camps and washing equipment.

### (iii) Land Environment

- Adverse impact on land stability, catchment of soil erosion, reservoir sedimentation and spring flow (if any) (a) due to considerable road construction / widening activity (b) interference of reservoir with the inflowing stream (c) blasting_ for commissioning of HRT, TRT and some other structures.
- Changes in land use / land cover and drainage pattern
- Immigration of labour population
- Quarrying operation and muck disposal
- Changes in land quality including effects of waste disposal
- River bank and their stability
- Impact clue to submergence.

### (iv) Biological Environment

- Impact on forests, flora, fauna including wildlife, migratory avi-fauna, rare and endangered species, medicinal plants etc.
- Pressure on existing natural resources
- Deforestation and disturbance to wildlife, habitat fragmentation and wild animal's migratory corridors
- Compensatory afforestation-identification of suitable native tree species for compensatory afforestation and green belt.
- Impact on fish migration and habitat degradation due to decreased flow of water
- Impact on breeding and nesting grounds of animals and fish.

### (v) Socio-economic aspects

- Impact on local community including demographic profile.
- Impact on socio-economic status
- Impact on economic status.
- Impact on human health due to water / vector borne disease

- Impact on increase traffic
- Impact on Holy Places and Tourism
- Impacts of blasting activity during project construction which generally destabilize the land mass and. leads to landslides, damage to properties and drying up of natural springs and cause noise population will be studies. Proper record shall be maintained of the baseline information in the post project period.
- Positive and negative impacts likely to be accrued due to the project are listed.

(8) **Environmental Management Plans**

- **Catchment Area Treatment (CAT)** Plan should be prepared micro-watershed wise. Identification of free draining/ directly draining catchment based upon Remote Sensing and. Geographical Information System (GIS) methodology and Sediment Yield Index (SYI) method of SLUSOI coupled with ground survey. Areas or watersheds falling under 'very severe' and 'severe' erosion categories are required to be treated. Both biological as well as engineering measures should be proposed in consultation with State Forest Department. Year-wise schedule of work and monetary allocation should be provided. Mitigation measures to check shifting cultivation in the catchment area with provision for alternative and better agricultural practices should be included.
- **Command Area Development (CAD) Plan** giving details of implementation schedule with a sample CAD plan.
- **Compensatory Afforestation** shall be prepared by the State Forest. Department in lieu of the forest land proposed to be diverted for construction of the project as per the Forest (Conservation) .Act, 1980. Choice of plants for afforestation should include native and RET species, if any.
- **Biodiversity and Wildlife Conservation and Management Plan** for the conservation and preservation of rare, endangered or endemic floral/ faunal species or some National Park/Sanctuary/ Biosphere Reserve or other protected area is going to get affected directly or indirectly by construction of the project, then suitable conservation measures should be prepared in consultation with the State Forest Department.
- **Resettlement and Rehabilitation** (R&R) **Plan** need to be prepared with consultation of the project affected families and the State Government: Detailed budgetary estimates are to be provided. Resettlements site should be identified. The plan will also incorporate community development strategies. *Land acquisition for the project whose land is to be acquired should be suitably compensated in accordance with the law of the land and prevailing guidelines. R&R Plan is to be formulated as per new Act, 2013 which came into force w.e.f. 1.1.2014.*
- **Green Belt Development Plan** along the periphery of the reservoir, approach roads around the colonies and other project components, local plant species must be suggested with physical and financial details. Local plant species suitable for greenbelt should be selected.
- **Fisheries Conservation and Management Plan** – Fish fauna inhabiting the affected stretch of river, a specific fisheries management plan should be prepared for river and reservoir. If any migratory fish species is getting affected then the migratory routes, time/season of upstream and downstream migration, spawning grounds etc will be discussed in details.

- **Reservoir Rim Treatment Plan** for stabilization of land slide/ land slip zones, if any, around the reservoir periphery is to be prepared based on detailed survey of geology of the reservoir rim area. Suitable engineering and biological measures for treatment of identified slip zones to be suggested with physical and financial schedule.
- **Muck Disposal Plan** suitable sites for dumping of excavated materials should be identified in consultation with State Pollution Control Board and State Forest Department. All muck disposal sites should be minimum 30 in away from the HFL of river. Plan for rehabilitation of muck disposal sites should also be given. The L-section/cross section of muck disposal sites and approach roads should be given. The plan shall have physical and financial details of the measures proposed.
- **Plan for Restoration of quarry sites** and landscaping of colony areas, working areas, roads etc. Details of the coarse/fine aggregate/clay etc. required for construction of the project and the rock/clay quarries/river shoal sites identified for the project should be discussed along-with the engineering and Biological measures proposed for their restoration with physical and financial details.
- **Study of Design Earthquake Parameters**: A site specific study of earthquake parameters should be done. Results of the site specific earthquake design parameters should be approved by National Committee of Seismic Design Parameters, Central Water commission (NCSDP), New Delhi.
- **Dam Break Analysis and Disaster Management Plan** The outputs of dam break model should be illustrated with appropriate graphs and maps clearly bringing out the impact of Dam Break scenario. The action plan will include Emergency Action and Management plan including measures like preventive action notification, warning procedure and action plan for co-ordination with various authorities.
- **Water, Air and Noise Management Plans** to be implemented during construction and post-construction periods.
- Mitigation measures due to blasting on the structures in the vicinity
- **Groundwater management plan**
- **Public Health Delivery Plan** including the provisions of drinking water supply for local community.
- **Sanitation and Solid waste management plan** for domestic waste from colonies and labour camps etc.
- **Local Area Development Plan** to be formulated in consultation with the Revenue Officials and. Village Pancahayats. Local skill development schemes should be given. Details of various activities undertaken along with its financial outlay should be provided.
- Environmental safeguards during construction activities including Road Construction.
- **Energy Conservation Measures**
- **Environmental Monitoring Programme** with physical & financial details covering all the aspects of EMP. A summary of cost e estimates for all the plans, cost of implementing all the Environmental Management Plans.

(9) In the EMP, please include a sample CAD plan for a distributary outlet command. Such plan is to show the alignment of irrigation and drainage channels. The components of the OFD works to be undertaken may be clearly mentioned along with a time schedule for their completion vis-&-vis the progress of irrigation development.

**Additional TOR**

i. The scheme in its first phase envisages lifting of 90 TMC of floodwater in 60 days during the flood season from the foreshore of the Srisailam project on Krishna river at Yellur village through five separate stages, ending at K.P. Laxmidevipally village. Therefore, water availability analysis at Yelluru village (point of drawl) during monsoon season is to be submitted to ascertain sufficiency of water available.
ii. As the area is on fluoride affected zone, therefore, provisions should also be made to recharge the groundwater through proposed reservoirs to dilute fluoride levels.
iii. Groundwater be treated for removal of fluoride and then the treated water be supplied to the villagers for drinking purposes.
iv. Provision of e-flow should be ensured for the sustenance of aquatic life in the downstream river.
v. Land acquired for the project shall be suitably compensated in accordance with the law of the land with the prevailing guidelines.
vi. Though, total power requirement has been provided, but its firm linkage is to be supported with documents.
vii. Proof of application for diversion of forestland for non-forest purpose will be submitted to the Ministry within one month, if any.
viii. Information on species composition in particular to fish species from any previous study/literature should be included.
ix. The clearance from Standing Committee of NBWL under the Wildlife (Protection) Act, 1972 should be obtained, as applicable.
x. Wildlife Conservation plan be prepared for the area located within the project and implemented by the project proponent in consultation with the State Forest Department. Wildlife Conservation plan also to be prepared for the impacted area due to construction of the project falling outside the project area and implemented by the local state Forest Department.
xi. Solid waste management should be planned in details. Land filling of plastic waste shall be avoided and instead proposal for various uses may be proposed in the revised EIA/EMP report.
xii. Resettlement & Rehabilitation Plan should be implemented as per the prevail guidelines of the Govt. of India .
xiii. Skill mapping be undertaken for the youths of the affected project area and based on the skill mapping, necessary trainings to the youths be provided for their appropriate engagements in the Project

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Annexure -II

No.J-11013/25/2014-IA.I
Government of India
Ministry of Environment & Forests

Indira ParyavaranBhawan,
JorBagh Road, Ali Ganj,
New Delhi-11003

Dated the 11th August, 2014

## OFFICE MEMORANDUM

**Subject: Environment sustainability and CSR related issues-guidelines**

The Environment Impact Assessment (EIA) Notification 2006, issued under the Environment (Protection) Act 1986, as amended from time to time, prescribes the process for granting prior environment clearance (EC) in respect of certain development projects / activities listed out in the Schedule to the notification.

2. Sustainable development has three components, viz., social, economic and environmental. All the three components are closely inter-related and mutually re-enforcing. Considering this, the general structure of EIA document, under Appendix-III to the notification, prescribes inter-alia public consultation, social impact assessment and R&R action plan besides environment management plan (EMP).

3. It is noticed that while there is clarity on the guidelines on EMP, as regards sustainability related issues, different formulations have been prescribed in the conditions in EC letters for the projects under different sectors listed out in Schedule to the EIA Notification, 2006. Thus, there is a need to issue guidelines on the subject.

4. Section 135 of the Companies Act, 2013 deals with corporate social responsibility and Schedule-VII of the Act lists out the activities which may be included by companies in their CSR Policies. The activities relating to "ensuring environmental sustainability", are listed in this schedule. Further, Ministry of Corporate Affairs has also notified the Companies (Corporate Social Responsibility Policy) Rules, 2014.

5. The concept of CSR as provided for in the Companies Act, 2013 and covered under the Companies (Corporate Social Responsibility Policy) Rules, 2014 comes into effect only in case of companies having operating projects and making net profit as also subject to other stipulations contained in the aforesaid Act and Rules. The environment clearance given to a project may involve a situation where the concerned company is yet to make any net profit and / or is not covered under the purview of the aforesaid Act and Rules. Obviously, in such cases, the provisions of aforesaid Act and Rules will not apply.

6. The matter has been further examined in the Ministry of Environment Forests & Climate Change (MoEF&CC). It has been decided that in respect of valid concerns expressed during the public consultations, mitigation issues emerging from social impact assessment and R&R Plan, the project proponents, in EIA / EMP report will clearly state the activity-wise cost involved (both capital as well as recurring costs), the phasing of these activities along with costs and also as to how such expenditure would be met. The costs and the timelines for various activities as prepared by the project proponent may be looked into by the concerned Expert Appraisal Committee (EAC) for their reasonableness and appropriate recommendations in the matter reflected in the minutes of EAC meeting. In case these activities (or some of these activities) are proposed to be covered by the project proponent under CSR activities, the project proponent should commit providing for the same. In either case, the position regarding the agreed activities, their funding mechanism and the phasing should be clearly reflected in the EC letter.

7. The obligation on part of the project proponents, as mentioned in para5 above, should be stated at the TOR stage itself as one of the TORs for the project.

8. All Sectoral EACs will follow the aforesaid procedure on environment sustainability and CSR related issues while appraising the projects and do away with the existing practices being followed on the subject, if any.

9. These guidelines will apply mutatis mutandis to SEACs/SEIAAs.

10. This issues with the approval of the Component Authority.

**(Dr. Satish C.Garkoti)**
**Scientist 'F'**

To

1. All the Officers of IA Division
2. Chairpersons / Member Secretaries of all the SEIAAs / SEACs
3. Chairman, CPCB
4. Chairpersons / Member Secretaries of all SPCBs / UTPCCs

**Copy to:**

1. PS to MEF
2. PPS to Secretary (EF&CC)
3. PPS to AS(SS)
4. PPS to JS(AT)
5. Website of MoEF&CC
6. Guard File

(16)

Annexure-8

# GOVERNMENT OF TELANGANA
# IRRIGATION AND CAD DEPARTMENT, HYDERABAD (TS)

# EXECUTIVE SUMMARY

## ENVIRONMENTAL CLEARANCE OF PALAMURU RANGAREDDY LIFT IRRIGATION SCHEME

**July, 2021**

*Foreshore of Srisailam Dam*

*Consultant:*

**VOYANTS SOLUTIONS PRIVATE LIMITED**
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 **NABET Certificate No.: NABET/EIA/1821/RA0114**

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# 1 EXECUTIVE SUMMARY

## 1.1 BACKGROUND

Telangana State, situated in the southern part of India, is the 29$^{th}$state of India, formed on 2$^{nd}$June 2014 with 1,12,077 Sq. km. of area and has a population of over 35 million. Analysis of last 30 years data on drought in Telangana State indicates the state has experienced 23 years as droughts affected in some or other mandals. Further, non-availability of sufficient irrigation facilities and limitations w.r.t. ground water exploration makes Telangana State drought prone. The agricultural statistics for 2015-16 indicate that Nalgonda, Mahabubnagar, Rangareddy and Medak districts are susceptible to droughts in Telangana. Being a new state, the government is making every effort for optimal use of available water resources for agriculture, industrial sector as well as providing drinking water for overall development.

## 1.2 NEED FOR THE PROJECT

The newly re-organized districts Mahabubnagar, Nagarkurnool, Rangareddy, Vikarabad and Nalgonda of Telangana State are the one of the drought prone and distressed areas in country. Further, there is significant shortage of drinking water; as a result, a large part of the population of these districts is being forced to migrate to other parts of the country. The situation is further compounded due presence of fluoride in water. The percentage of net cropped area in Mahabubnagar, Nagarkurnool, Nalgonda, Rangareddy and Vikarabad districts is only23.8%, 13.2%, 24.4%, 24.2% and 18.1% respectively. In order to redress this situation, the Government of Telangana has taken up the Palamuru Rangareddy Lift Irrigation Scheme (PRLIS) for alleviating the misery of these drought prone areas.

## 1.3 LOCATION AND APPROACH

The command area (Ayacut) is located between Longitude 77$^0$21'51"E to 78$^0$54'23"E and latitude16$^0$26'54"N to17$^0$38'09" N.Venkatadri reservoir at village Vattem, Bijinapally Mandal, District Mahabubnagar is the first reservoir from which the water lifted from Srisailam reservoir shall be harnessed for irrigation. The main canal network is approachable by road from the nearest towns. The nearest railway station is “Jadcherla” at a distance of 23 km. The nearest airport is Hyderabad at a distance of 93 km. Mahabubnagar is the District Head quarter, Jadcherla, Kalwakurthy, Narayanpet, Bhutpur, Devarakadra, Kodangal, Shadnagar, Gandeed, Tandur, Dharur, Chevella, Vikarabad and Parigi are the major towns located in the project area. The Secunderabad - Bangalore Railway line of S C Railway and Hyderabad - Bangalore NH-44 and SH-4 & SH-21 pass through the mid region of the project area and provide easy accessibility to canals and distribution system.

## 1.4 PROJECT FEATURES

The works under Phase-I, primarily involves construction of series of approach channels, open canals (50.490 km), tunnels (61.577km), pump houses (5) and reservoirs (6-with total storage capacity 67.97 TMC) for conducting water to various stages of lift and storing it for consumptive use in drinking water, industrial uses and irrigation. In Phase –II, the project activities shall involve construction of 13 main canals (Total length 915 km) and distribution network to serve an ayacut of 4,97,976 ha with area under Kharif and Rabi irrigation shall be 495835 ha (99.57%) and 77,887 ha (15.64 %) respectively. The annual intensity has been assessed as 115.21 % of the CCA. The main canals shall be lined and canal capacity has been fixed on the basis of peak requirement that includes 10% extra for rush irrigation. The irrigation water requirement of

the command area is assessed to be 1410.91 MCM (49.83 TMC) consisting of 1156.65 MCM (40.85 TMC) during Kharif season and 254.26 MCM (8.98 TMC) during Rabi season excluding losses. The total cost of the project is Rs.52,056.31 crores of which the cost of main canal and distribution system for irrigation shall be Rs.8069.03 crores. The B.C. Ratio has been assessed as 1.25:1.

## 1.5 ENVIRONMENT IMPACT ASSESSMENT

M/s. Voyants Solutions Pvt. Ltd, Gurugram, Haryana, has conducted the Environment Impact Assessment Study as per approved ToR issued by the MoEF&CC, New Delhi, vide letter no. J-12011/31//2017-IA-I (R), dated 11.10.2017.

## 1.6 METHODOLOGY

The methodology and techniques used for studying the various parameters of the environment viz. land, air, noise, water, flora, fauna and socio-economics in the study area are described as follows:

### 1.6.1 Air Quality Assessment

To generate, a database on the existing status of the pollutants, the study area was evaluated for setting up six locations to conduct air quality monitoring in respect of $PM_{10}$, $SO_2$ and NOx.

### 1.6.2 Sound Level Measurement

The sound level was measured at six locations by sound level meter

### 1.6.3 Soil Quality Assessment

Physical and chemical characteristics of the soil were studied in respect of six samples taken from the study area.

### 1.6.4 Water Environment Assessment

For evaluating physical, chemical and biological characteristics of surface and ground water samples were taken from ten locations.

### 1.6.5 Floral Study

It is based on extensive field survey of the area. In this the phytosociology of plants and diversity of the forest vegetation was determined.

### 1.6.6 Faunal Study

Various transects were identified along the villages to carry out faunal studies as the village trails were the best options to cover-up the complete area. Observer walked at a constant pace for their observation.

### 1.6.7 Socio-economic Study

The data on socio economic and dependency aspects were collected. In order to gather information on public perception of the proposed project the attitude/psychology survey was carried out which depicts the prevailing awareness and acceptance/no-acceptance about the project. Data collection from secondary sources has also been made to validate some of the information and to supplement the data on demographic aspects.

## 1.7 EXISTING STATUS OF ENVIRONMENT

### 1.7.1 Land use/Land Cover

The dominating land use classes are agricultural land Kharif cropped area accounted for maximum 3,39,562 ha (38.41% of the gross command area) followed by agricultural land double cropped area and agricultural fallow lands and agriculture land Rabi/summer cropped with 2,16,735 ha (24.52%) 1,47,959 ha (16.74%) and 33,728 ha (3.82%) respectively.

### 1.7.2 Total Land Requirement for Construction of the Project

The total Patta land required for the main canal and for distribution system shall be 6195 ha and 6897 ha respectively. No residential structure, shop and cattle shed shall be acquired.

### 1.7.3 Archaeological / Historical Monuments/Sensitive Area

No archaeological monument of national importance lies either in the project area or in its submergence area. No National Park, Sanctuary, Defence Establishments, Archaeological Monuments, Notified Eco-sensitive areas or protected area under Wild Life (Protection) Act exists within the project area or within 10 km from it.

### 1.7.4 Soil Quality

The results of the soil analysis show that the soil is neutral to slightly basic at all the locations having pH varying from 7.20 to 7.65. The texture of the soil varies from sandy clay loam to clay. Available nitrogen content in the surface soils ranges between 133.5 to 185.2 kg/ha thereby is indicating that soils are low in available nitrogen content. Available phosphorus content ranges between 12.1 to 15.9 kg/ha) thereby indicating that soils are medium in available phosphorus. Available potassium content in these soils ranges between 167.3 to 204 kg/ha, thereby indicating medium to high in potassium content. The organic carbon varies from 0.49 % to 0.73% thereby implying that soils have low to medium organic carbon.

### 1.7.5 Air and Noise Environment

The pollutants concentration in the air is well below the permissible limit ($PM_{10}$: 18.3–49.3 µg/m3; $PM_{2.5}$: 9.9 – 26.9 µg/m3; NOx: 7.5-18.3 µg/m3) and $SO_2$: 5-7.4 µg/m3 as there are no industries in the area and the density of vehicular traffic is not alarming. The noise monitoring shows that day and night time noise levels are within the prescribed limits.

### 1.7.6 Water Environment

The analysis results have been compared with the Tolerance limits for inland surface waters, Class – C as set forth in IS: 2296-1982. The pH values of all analysed samples ranged between 7.60-8.16 and was within the permissible limit (6.5-8.5). The TDS levels ranged from 151 to 248 mg/l and were well below the desirable limit of 500 mg/l. The chlorides level in surface water samples ranged from 24.6 to 50 mg/l and were below the desirable limit of 250 mg/l. The sulphates level ranged from 18.5 to 37.2 mg/l and were below the desirable limit of 200 mg/l. The fluorides level ranged between 0.10 to 0.30 mg/l was lower than the desirable limit of 1.0 mg/l. The nitrate level ranged between 2.6 to 4.1 mg/l and was lower than the desirable limit of 45 mg/l. The ground water had all parameters within the desirable limits.

### 1.7.7 Status of Biological Environment

#### *1.7.7.1 Flora of the Project Area*

- During the surveys, an inventory of different plant groups found in the study area was prepared. In the study area 57 species of plants were recorded. These include 32 trees, 12 shrubs, 13 species of herbs and 6 species of grasses.
- About 14 economically important plant species were recorded from the study area.
- About 17 important medicinal/ethnobotanical importance plant species were recorded
- No RET species falling under IUCN Red List was recorded/reported from study area.

#### *1.7.7.2 Fauna*

The faunal study for the proposed project was carried out in both the submergence and influence zone of both upstream and downstream

- 16 mammalian species were recorded /reported during the survey of which one(wolf) belongs to Schedule-1 of WPA, 1972.
- 50 bird species were observed /reported during the survey.
- As many as 5 species of herpetofauna were recorded /reported.
- 15 species of fishes were recorded.

### 1.7.8 Social and Cultural Background of the Area

#### *1.7.8.1 Demography of Mandals covered under Ayacut*

There are 7,71,354 households with a total population of 35,61,580 in Mandals covering the ayacut. The male and female population in all mandals under ayacut is 17,98,712 and 17,62,869 respectively with overall sex ratio of 980 females per 1000 male. The total population of Scheduled Cast and Scheduled Tribe in mandals of Ayacut is 6,67,434 (18.7%) and 3,75,372(10.5%) respectively. The literacy rate is 54.20%. The percentage of Main workers and marginal workers in the mandals of ayacut is 43.07% and 7.82% respectively, while non-workers constitute 49.11%.

#### *1.7.8.2 District-wise Land to be Acquired and PAF*

The total Patta land required for the main canal and for distribution system shall be 6195 ha and 6897 ha respectively. No residential structure, shop and cattle shed shall be acquired (**Table 1.1**).

**Table 1-1 : District Wise Land to Be Acquired And PAF**

| S.N. | District | No. of PAF | Patta Land to be Acquired for main canal (ha) | Patta Land to be Acquired for branches distributaries and minors (ha) | Total Patta Land(ha) | Other Assets | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Houses | Shops | Cattle Shed |
| 1 | Mahabubnagar | 4046 | 2247 | 2235 | 4482 | - | - | - |
| 2 | Ranagreddy | 1195 | 870 | 560 | 1430 | - | - | - |
| 3 | Nalgonda | 185 | 0 | 200 | 200 | - | - | - |
| 4 | Vikarabad | 3670 | 1878 | 2100 | 3978 | - | - | - |
| 5 | Nagarkurnool | 5795 | 1200 | 1802 | 3002 | - | - | - |

| S.N. | District | No. of PAF | Patta Land to be Acquired for main canal (ha) | Patta Land to be Acquired for branches distributaries and minors (ha) | Total Patta Land(ha) | Other Assets | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Houses | Shops | Cattle Shed |
| **Total** | | **14,891** | **6,195** | **6,897** | **13,092** | - | - | - |

## 1.8 IDENTIFICATION, PREDICTION AND EVALUATION OF IMPACTS

### 1.8.1 Impacts on the Micro-Climate of the Area

Due to construction activities, there shall be temporary and nominal effect on the ambient temperature and humidity. The operation stage project may not create any impact on the meteorology and climatology of the area.

### 1.8.2 Change in Land use / Land Cover

#### *1.8.2.1 Construction Phase*

For construction of the main canal and distributary system about 13092 ha land will be acquired from private owners. The land use of patta land and revenue land (2698ha) under canal shall change permanently in water body and built-up area (Project Components)

#### *1.8.2.2 Operational Phase*

During the operation phase no change in land use is expected. Many of the redundant areas having no further usage will be brought under plantation.

### 1.8.3 Soil Erosion and Siltation

#### *1.8.3.1 Construction Phase*

Soil erosion due to excavation of different components of the project, construction of roads will accelerate soil erosion.

#### *1.8.3.2 Operational Phase*

Soil erosion due to project activities will not exist in the operation phase as the construction would be completed and landscape restoration work would also be implemented

### 1.8.4 Impact on Geology

The intensity of anticipated environmental impact on geology of the area will be weak and extent of anticipated impact will be local. No impact is anticipated on the geology of the area during the operation phase.

### 1.8.5 Impact on Hydrology

The project envisages lifting of 90TMC @1.50 TMC in about 60 days during the flood season from the fore shore of the Srisailam Reservoir project on Krishna river at Yellur village in Kollapur mandal of district Mahabubnagar. Therefore, the most obvious impact hydraulic impact shall be alteration of the downstream flow regime during the period the water from the reservoir shall be lifted for storing in reservoirs for drinking /industrial and irrigation purpose. The daily abstraction of water shall be about 656

cumecs during period of abstraction. The most common attribute of water abstraction shall be a decrease in the magnitude of flood peaks downstream of the dam.

Ground water recharge from implementation and operation of PRLIS system shall be due to seepage from reservoir, losses from canal system and field application. The total recharge due to project shall be 1291.02 MCM. Accounting for unavoidable natural discharge (10%), the net ground water recharge shall be 1161.92 MCM.

The rise in water table shall be minimum for Nalgonda district (0.03m/yr) and maximum for Mahabubnagar district (0.65m/yr). Therefore, necessary water management strategies, such as conjunctive use of surface and groundwater are necessary in these areas.

### 1.8.6 Environmental Degradation due to Labour Immigration

During the construction phase congregation of approximately 7000 workers is likely to take place in the project area, which will increase pressure on land and water resource. Conflict between the migrants and the local population may occur for employment. Labour engaged in construction activity will also move away once the project work is completed; therefore, no additional impact is expected.

### 1.8.7 Impacts on Air Environment

Temporary changes in air quality during construction phase are expected due to emission of hydrocarbons from vehicles and gases from blasting operations. The maximum predicted GLC due to excavation activities at the head reaches of Venkatadri Main Canal taking off from Venkatadri reservoir, High level canal taking off from Kurumurthyraya reservoir. Low Main Canal taking off Udanadapur reservoir and North Main Canal taking off from KP LakshmideviPally reservoir was found to be 14.97µg/$m^3$, 21.15µg/$m^3$,23.50µg/$m^3$ and 15.53µg/$m^3$ respectively. The resultant impact due to construction activities (excavation and crushing) on the Ambient air quality for PM10 at the Head reach of main canals and the nearest villages are within the NAAQS.

Due to increased transportation during construction phase at 25 m, predicted concentration for PM10 is 12.4 µg/m3, which reduces to 7.7 µg/m3, 3.4 µg/m3 and 1.4 µg/m3 at 50m, 150m and 500m respectively. Thus, the impact on the pollutant level (PM10) due to increased traffic due to transportation of mineral shall be minimal. The increased GLC in respect of NOx were insignificant being 0.13 µg/m3 up to 25m and 0.11 µg/m3 up to 50m and 0.10 µg/m3 up to 1km.

### 1.8.8 Impacts on Noise Environment

Temporary increase in noise levels are expected during construction phase only. The estimated noise levels including the background level at these receptors at different locations, due to running of construction machinery, shall be lesser than the standard values

### 1.8.9 Impacts due to Ground Vibration and Air -overpressure due to Blasting

Due to blasting, the resulting PPV shall be between 1.71 mm/sec to 3.68mm/s which shall be considerably lower than the limiting values 5.0 mm/sec for excitation frequency less than 8 Hz, in case of temporary structures. Predicted air over pressure due to blasting at Badua and Karapura shall range between 103.2 - 109.8 dB(A) respectively and is lower than 120 dB(A).

### 1.8.10 Impacts on Water Environment

During the construction phase, the water environment of the waterbody due to proposed project shall be impaired due to increase in silt rate from the discharge coming out open air works, batching and crushing plants and from the foundation works. The leakage of POL and washings of workshop floors and washing of vehicle and equipment bring oil and grease with it and shall increase the concentration of oil and grease in water, if discharged into the river section. The impact shall be felt during construction with the slight increase in turbidity in the river/ water bodies despite resorting to de-siltation of silt laden discharge coming from various excavation points, but the transparency of the water shall not be impaired to the extent that the available sunlight ceases to power the photosynthetic reactions. Apart from ground water recharge from the application of water in command area, quality of ground water will also improve in the entire area as the quality of surface water to be applied conforms to class "C" water as per IS:2296-1982.

In operation phase due to running of canals and application of water in fields in such area where water table is high, water logging and soil salinity development can occur due to heavy losses of water due to seepage from canals, distributaries and water courses

### 1.8.11 Impacts on Flora

It is evident from the study that from the project zone and influence zone of the proposed project none of tree species, shrub, herb or any climber or grass species are either vulnerable or endangered. Interestingly the vegetation composition of the project zone is also widely distributed in the influence zone in abundance and there will be no significant loss to the habitat. However, any loss of vegetation during the project activity period will be restored in due course of time. The floral abundance of the project area in post construction phase will increase by many folds as the plantation under green belt, restoration and landscaping will be completed.

### 1.8.12 Impacts on Fauna

As the project activity is not going to affect all the major habitats, there is little concern for these niche birds. There will be no alteration to the existing habitat of endangered and threatened species. There is also no wildlife sanctuary, national park and biosphere reserve near the project area. Increase in temporary stress levels of wildlife during construction phase due to noise, human interference and reduction in present habitat. Threat due to poaching might increase. Due to reservoir creation, there will be improvement in the habitat for mainly water birds, reptiles, mammals, amphibians and plankton and Improvement in food chain of some reptiles, birds and carnivorous mammals due to creation of reservoir and increase in humidity level.

### 1.8.13 Summary of Positive and Negative Impacts

#### *1.8.13.1 The positive impacts*

- Irrigation potential shall be created in area (4,97,976ha)
- Better living Standards for famers of command area.
- Employment opportunities/to locals in project work and fisheries.
- Benefits to economy and commerce.
- Access to improved infrastructure facilities.
- Recreation and tourism potential may boost

- Improvement in environment through implementation of different plans.
- Command Area Development.
- Better opportunities for cattle rearing.
- Increase in groundwater level

#### *1.8.13.2 The negative impacts*

- Due to project 14,891 families shall be affected due to land acquisition for phase -II works
- The loss of agriculture land (13,092ha) and agriculture produce.
- Loss of livelihood and income.
- Likely decrease in agriculture and horticulture production due to air pollution
- Disturbance to the fauna of the study area during construction
- Pressure on the existing provincial / state road will increase.

## 1.9 IMPACT MANAGEMENT

To ameliorate the negative effects of the project construction and overall improvement of the environment following management plans are formulated for implementation concurrent to the project construction. The cost of the management plans is shown in **Table 1.2**

**Table 1-2: Summary of Total Cost Estimate of EMP**

| S.N. | Plans | Cost (Rs. In Lakh) |
|---|---|---|
| 1. | Catchment Area Treatment Plan | 00.00 |
| 2 | Command Area Development Plan | 132153.00* |
| 3 | Compensatory Afforestation Scheme | 00.00 |
| 4 | Wildlife and Bio-diversity Management plan | 80.00 |
| 5 | Fisheries Management Plan | 100.00 |
| 6 | Resettlement & Rehabilitation Plan | 156686.00 |
| 7 | Green Belt Development Plan | 2964.00 |
| 8 | Reservoir Rim Treatment Plan | 00.00 |
| 9 | Muck Management Plan | 7125.00 |
| 10 | Landscape and Restoration Plan | 76.00 |
| 11 | Restoration Plan for Quarry Sites | 76.00 |
| 12. | Disaster Management Plan | 35.00 |
| 13 | Water, Air and Noise Management Plan | 250.00 |
| 14 | Public Health Delivery Plan | 600.00 |
| `15 | Labour Management Plan | 345.00 |
| 16 | Sanitation and Solid Waste Management Plan | 1080.00 |
| 17 | Local Area Management Plan | 4035.00 |
| 18 | Environmental Safeguards During Construction Activities Including Road Construction | 320.00 |
| 19 | Energy Conservation Measures | 400.00 |
| 20 | Environmental Monitoring Plan | 228.00 |
| | **Grand Total** | **174400.00** |

**The cost of works under CAD Scheme has been excluded, as it will be funded under Central Plan with State share in prescribed proportion.*

| STATEMENT SHOWING MANDAL WISE AYACUT DETAILS OF PRLIS IN NARAYANPET DISTRICT | | | | |
|---|---|---|---|---|
| **S.NO** | **District Name** | **Mandal Name** | **No. of Villages** | **Total Ayacut (Ac)** |
| 1 | NARAYANPET | Kosgi | 26 | 25856 |
| | | Maddur | 30 | 27528 |
| | | Narayanpet | 22 | 18493 |
| | | Dhanwada | 9 | 11065 |
| | | Damargidda | 16 | 6703 |
| | | Marikal | 7 | 4348 |
| | | Makthal | 14 | 19359 |
| | | Narwa | 5 | 5276 |
| | | Utkoor | 26 | 42327 |
| | **Total** | **9** | **155** | **1,60,955** |

# PRE-FEASIBILITY REPORT

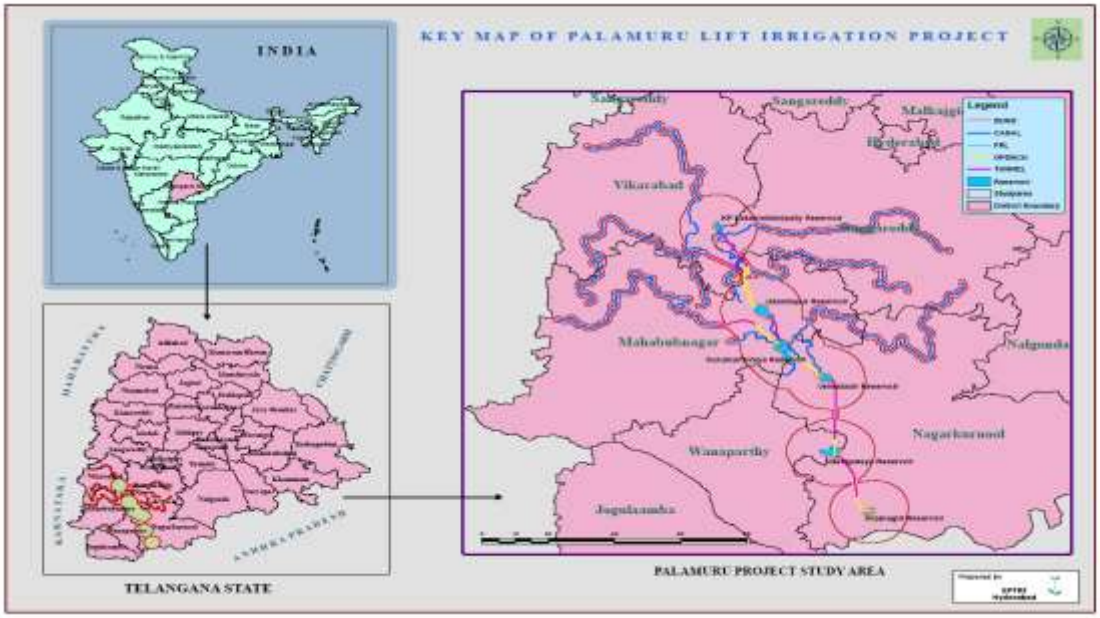
**FOR THE PALAMURU – RANGAREDDY LIFT IRRIGATION SCHEME (PRLIS) FROM FORESHORE OF SRISAILAM RESERVOIR NEAR YELLUR(V),KOLLAPUR(M) TO K.P.LAKSHMIDEVIPALLY RESERVOIR AT K.P LAKSHMIDEVIPALLY(V), KONDURG (M), MAHABUBNAGAR DISTRICT, TELANGANA STATE**

**SUBMITTED TO**

**The Ministry of Environment Forest & Climate Change,**
**New Delhi**

**by**

**CHIEF ENGINEER, PRLIS,**
**I&CAD Department,**
**Telangana State**



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# 1 Executive Summary

## 1.0 Introduction

Telangana State is situated in the central stretch of the Indian Peninsula on the Deccan Plateau. It is the 29th state of India and twelfth-largest state in the country with an extent of 114,840 square kilometres and a population of 35.3 Millions (2011 census). The region is drained by two major rivers namely Godavari and Krishna. The climate in this region is semi-arid and has skewed distribution of rainfall in space and time necessitating water management. The culturable area in the state is 75.21 lakh ha and net irrigated area is 22.89 lakh ha (30.43% of culturable area).

The economy of Telangana is mainly driven by agriculture. About 73% of the population is rural. The economy of the state is predominantly agrarian; agriculture contributes about 50% of the state's income and employs about 70% of the work force. Since agriculture is the main activity and it has close links with the development in other sectors, for overall economic progress of the state. Achieving faster agricultural growth is imperative. Thus there is an urgent need for increasing food and fiber production to meet the demands of increasing population as well as for providing rural employment.

The normal rainfall of Mahabubnagar district is 604 mm, the net irrigated area under different sources is less than 19%, which is lowest in the State. Mahabubnagar district is situated entirely in the Krishna basin and has suffered in the past due to the re-organization of the State in 1956. The district has been deprived of the benefits of Tungabadra left bank canal of Tungabadra dam. Even though two large rivers Krishna and Tungabadra flow through the district, the district is deprived of its legitimate share of irrigation water. It is necessary to provide irrigation facilities in the upland areas of district by lift irrigation.

The project implementation involves;

- Supply of Drinking water from the foreshore of Srisailam Reservoir to enroute villages & Hyderabad.
- Drawing 90 TMC of flood water in 60 days from the foreshore of Srisailam reservoir on Krishna river for irrigating 4,04,858 Ha. in the districts of Mahaboobnagar, Rangareddy & Nalgonda through Lift Irrigation Scheme. In this process construction of 6 nos. of following new reservoirs is envisaged.

The aim of the project is to irrigate upland areas of about 4,04,858 ha (10.00 lakh acres), in addition drinking water facility to en route villages, Hyderabad city and industrial use in Mahabubnagar, Rangareddy, and Nalgonda districts, by lifting 90 TMC of flood water in 60 days (1.50 TMC per day) during flood season from foreshore of Srisailam reservoir at Yellur (V), Kollapur (M) in Mahabubnagar district to K.P Laxmidevipalle (V), Kondurg (M) Rangareddy (D) (from +240 m to + 670 m)

which is the highest elevation in between Mahabubnagar and Rangareddy districts with 5 stage lifting and then by gravity.

The five stage pumping details are as follows:

1st Lift –An approach channel takes off from the foreshore of Srisailam reservoir near Yellur (V), Kollapur (M),Mahabubnagar(D). The water is drawn through tunnel connected to it and lifted to fill the proposed Anjanagiri reservoir at Narlapur village.

2nd Lift –An approach channel takes off from Anjanagiri reservoir. The water is drawn through the canal and tunnel connected to it and lifted to fill the proposed Sri Veera Anjaneya Reservoir at Yedula.

3rd Lift –An approach channel takes off from Sri Veera Anjaneya Reservoir. The water is drawn through the canal and tunnel connected to it and lifted to fill the proposed Venkatadri Reservoir at Vattem village and Kurumurthyraya Reservoir at Karvena village by linking both reservoirs with gravity canal from Venkatadri Reservoir.

4th Lift –An approach channel takes off from Kurumarthyraya Reservoir. The water is drawn through the canal and tunnel connected to it and lifted to fill the proposed Udandapur Reservoir.

5th Lift –An approach channel takes off from Udandapur Reservoir. The water is drawn through canal and tunnel connected to it and lifted to fill the proposed K.P. Lakshmidevipally reservoir.

20 No.s of Hamlets and 3 villages will come under submergence. Approximately 2481 households and 11025 population will be affected due to submergence.

An area of **23778.96 ha.** of non- forest land and **229.04 ha.** of Forest land shall be used for different components of the project.

- Submergence area under Reservoirs – **9664 ha.** (23,870 Ac.)
- Conduit Area – **2,198 ha.** (5,429 Ac.)
- Canal distribution Network area – **12,146 ha.** (30,000 Ac.)

The total power requirement of the project is 2944 MW and the total energy consumption of the project is 4366 Million units per annum. Total Power will be supplied by DISCOMS of the Telangana state.

The total water requirement during construction phase for construction and colonies is estimated as **3100 KLD.**

The total forest area involved for the project is **229.04 ha**. (approximately). Amrabad Tiger Reserve forest core area is 11.95 km, buffer area is 2.56 km and Eco-sensitive Zone (ESZ) is 1.56 km away from the Anjanagiri Reservoir.

The estimated cost of the project is **Rs.35,200 crores.**

**B.C RATIO:**

Considering all the benefits and costs incurred on all components of the project the B.C. Ratio works out to **1.23.**

# 2 INTRODUCTION OF THE PROJECT / BACKGROUND INFORMATION

## 2.1 Identification of the Project

The normal rainfall of Mahabubnagar district is 604 mm, the net irrigated area under different sources is less than 19%, which is lowest in the State. Mahabubnagar district is situated entirely in the Krishna basin and has suffered in the past due to the re-organization of the State in 1956. The district has been deprived of the benefits of Tungabadra left bank canal of Tungabadra dam. Even though two large rivers Krishna and Tungabadra flow through the district, the district is deprived of its legitimate share of irrigation water. Hence it is necessary to provide irrigation facilities in the upland areas of district by lift irrigation.

The aim of the project is to irrigate upland areas of about 4,04,858 ha (10.00 lakh acres), in addition drinking water facility to en route villages, Hyderabad city and industrial use in Mahabubnagar, Rangareddy, and Nalgonda districts, by lifting 90 TMC of flood water in 60 days (1.50 TMC per day) during flood season from foreshore of Srisailam reservoir at Yellur (V), Kollapur (M) in Mahabubnagar district to K.P Laxmidevipalle (V), Kondurg (M) Rangareddy (D) (from +240 m to + 670 m) which is the highest elevation in between Mahabubnagar and Rangareddy districts with 5 stage lifting and then by gravity.

Project Proponent is Chief Engineer, Palamuru-Rangareddy Lift Irrigation Scheme. I&CAD Department of Telangana is attempting to use latest technologies in the field of Water Resources and Information Technology to transform I&CAD as one of the most modern and service driven department.

## 2.2 Brief Description of the nature of the project

Palamuru - Rangareddy Lift Irrigation Scheme envisages to irrigate upland areas of Mahabubnagar, Rangareddy, and Nalgonda districts for a command area of 4,04,858 ha (10.00 lakh acres), in addition drinking water facility to en route villages, Hyderabad city and industrial use in Mahabubnagar, Rangareddy, and Nalgonda districts, by lifting 90 TMC of flood water in 60 days (1.50 TMC per day) during flood season from foreshore of Srisailam reservoir.

## 2.3 Need for the Project and its importance to the country or region

Mahabubnagar district is the largest district in Telangana in terms of its geographical area (18432 Sq.km), i.e. 43.73 lakh acres. Mahabubnagar is also known as Palamur. The project falls in Mahabubnagar district where major economic activity is due to agriculture, which is monsoon dependent. However, due to the inconsistent monsoons and erratic rainfall, the overall agricultural production and consequently the per capita income and the overall economy of the region is low. This area lies in the Krishna basin which is mostly semi-arid, often experiences drought. The ground water level is also low in the district.

Rangareddy district also lies in Krishna basin only with 18.80 lakh acres of geographical area. The rivers Musi and Kagna also flow through the district. From Musi water is being diverted to meet domestic and industrial needs of Hyderabad city. There are no major irrigation projects, owing to higher elevation. The nearest source of water is Krishna river from where it is required to lift and convey water.

Nalgonda district also lies in Krishna basin only with 14.974 lakh acres of geographical area. Major project Nagarjunsagar is located in the district. Owing to higher land elevation, major portion does not come under command of Nagarjunsagar Project. The total annual rainfall is less than 750 mm and further most of the mandals are having high fluoride levels causing diseases like dental and skeletal fluorosis.

In view of the above, as these districts are drought hit and backward. It is necessary to provide irrigation facilities in the upland areas of district by lift irrigation. This proposed project provides irrigation facilities to 4,04,858 ha (10.0 lakh acres), in addition to drinking water facility to enroute villages, Hyderabad city and industrial use in Mahabubnagar, Rangareddy and Nalgonda districts by lifting 90 TMC of flood water in 60 days during flood season from foreshore of Srisailam reservoir. This scheme improves the agricultural output and the per-capita income of the people of the region, while also improving groundwater scenario and clean drinking water to the people in the three districts.

## 2.4 Demand - Supply Gap

In the state of Telangana out of total cultivable area, 30-35% is only the net irrigated area. Though there is large tract of cultivable and fertile land in the command area, lack of irrigation facility has been depriving farmers of better yield. Through supply of water from foreshore of Srisailam reservoir in Mahabubnagar district, about 4,04,858 ha (10.00 lakh acres) are cultivated and there will be an increase in the irrigated areas leading to higher productivity and better yield.

## 2.5 Imports Vs Indigenous Production

The project leads to enhancement of indigenous food grain production.

## 2.6 Export Possibility

This project may ultimately lead to export of excess food grains.

## 2.7 Domestic / Export Markets

The project produce will have favourable impact on domestic and export markets.

## 2.8 Employment Generation

The implementation of Irrigation scheme will create employment opportunities in the project area. The employment is associated with improved farming practices as well as the construction of the irrigation scheme. A total of about 10000 unskilled, Semi Skilled & Skilled workers will be hired during construction of reservoirs, canals, tunnels, pump houses and surge pools. The people will be spread over the entire project area which comprises of **6 nos. of reservoirs and 5 lifts.**

With irrigation additional farm labour would also be required as a result of higher cropping intensity providing employment opportunities to local people within and outside the vicinity of the project area.

Further establishment of agro and ancillary industries would give rise to employment to the local people.

# 3 PROJECT DESCRIPTION

## 3.1 Type of Project Including Interlinked and Interdependent Projects, If Any

As per the EIA notification, 2006 and its subsequent amendment issued on 25th June 2014, the Environment clearance (E.C) is required by the Government of India as per schedule 1(c) of Irrigation Projects having more than 10,000 ha of Culturable Command Area (CCA). The PRLIS has been contemplated to provide drinking water facilities to 1131 villages , and irrigation facilities to 10.00 lakh acres in three districts i.e Mahabubnagar, Rangareddy and Nalgonda. The project has been divided into 18 packages upto Uddandapur Reservoir. The proposed project consists of water transmission system and distributary system for irrigation will be taken up. The project is proposed to lift water from the foreshore of existing srisailam reservoir without disturbing river morphology.

**General conditions**

The proposed project is fully in the Telangana State. However, it attracts the general conditions of interstate issues with Andhra Pradesh State as a part of the study area falls in Andhra Pradesh State. The proposed project area is not falling under Amrabad Tiger reserve forest as forest core area is 11.95 km, buffer area is 2.56 km and Eco- Sensitive Zone (ESZ) is 1.56 km away from the Anjanagiri reservoir.

## 3.2 Location (Map Showing general location, specific location and project boundary with project layout) with coordinates.

The Main Conduit of the Palamuru Rangareddy Lift Irrigation Scheme is starting from Narlapur (v) near Kollapur Mandal in Mahabubnagar District to K.P Lakshmidevipally (v) of Kondurg Mandal in Mahabubnagar District with 6 numbers of reservoirs and 5 stages of lifting.

Location of source for the scheme.

**Latitude : 16º 06’ 04” N**
**Longitude : 78º 23’ 59’’ E**

The location map is shown in Figure 3.1.

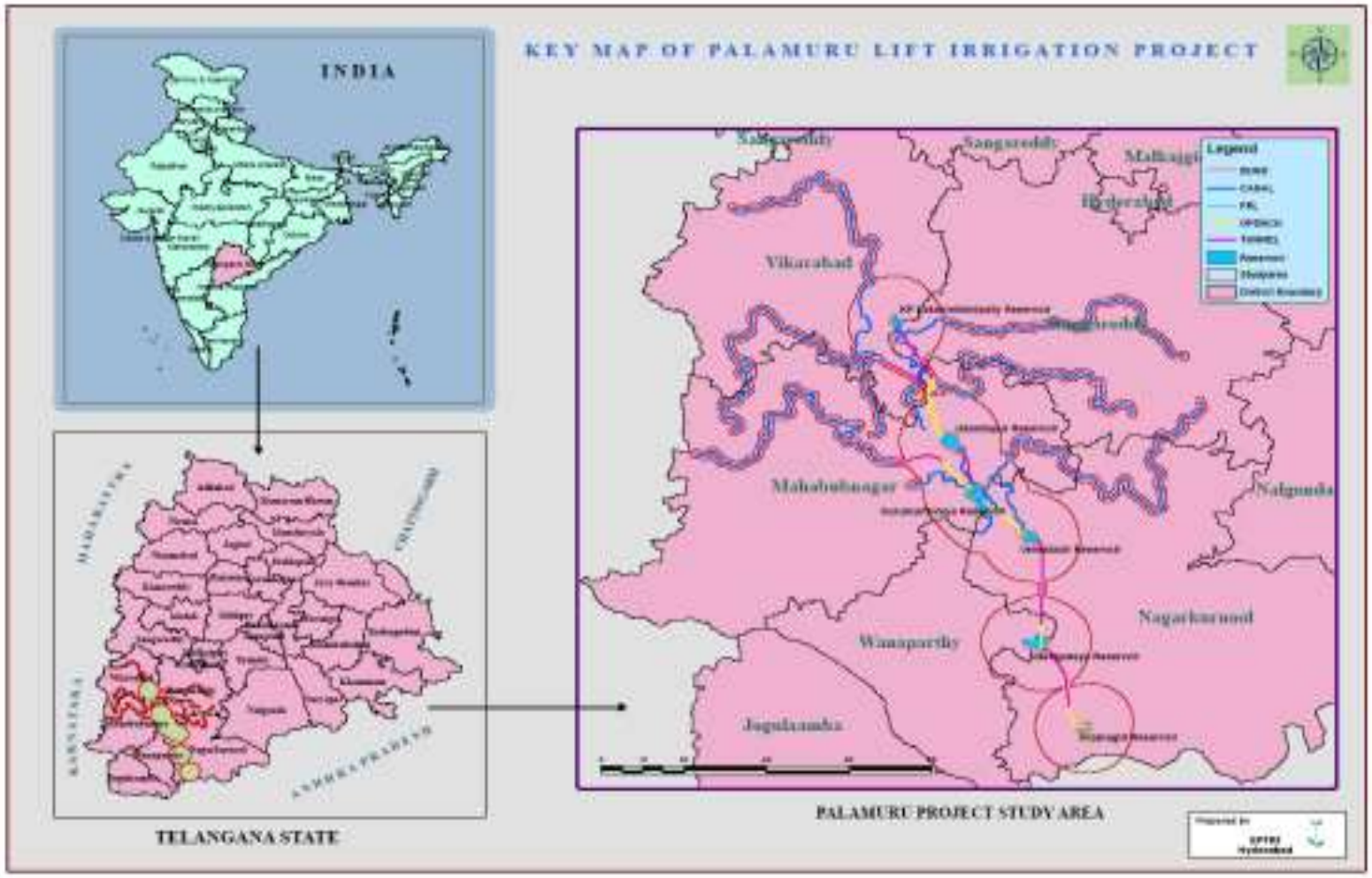



**Figure 3.1 Key map**

**3.3 Details of Alternate Sites considered and the basis of selecting the proposed site, particularly the environmental considerations gone into should be highlighted.**

The project is envisaged to lift water from foreshore of either Jurala Reservoir (OR) Srisailam reservoir to K.P.Lakshmidevipally. A detailed study had been carried out for lifting water from Jurala Reservoir. However, lifting of water from Jurala Reservoir had been dropped in view of less storage capacity.

**ALTERNATIVE SITE ANALYSIS**

There were only two sources of water. Either water for the project has to be drawn from Jurala Indira Priyadarshini Reservoir OR Srisailam Reservoir. Both are lift irrigation schemes and there are no chances for gravitational flow. There is no third alternative with regard to source of water. Though Jurala is advantageous from the point of gradient, it could not be considered, because there is no adequate storage capacity in the project. The gross storage capacity of Jurala at FRL is 11.94 TMC, while the water requirement of proposed project is 90 TMC. Further, sufficient flood water is not available in Jurala. Hence it is not feasible to lift 90 TMC from Jurala Source. The gross storage capacity of Srisailam Reservoir is 215 TMC. Thus we are proposing to the water from Srisailam Reservoir, which is having sufficient capacity. With regard to Srisailam Reservoir two alternatives are explored. The details are as follows

With reference to alignment and Pump House, based on involvement of forest land we opted for Underground Pump House. Details are furnished below

**Two (2) alternative alignments have been considered from foreshore of Srisailam reservoir to Anjanagiri reservoir.**

| S.No | DESCRIPTION | ALIGNMENT -1 (Open Pump house from foreshore of Srisailam) | ALIGNMENT - 2 (Underground Pump house from foreshore of Srisailam) |
|---|---|---|---|
| 1 | Land Use and Land Pattern | The land along the main conduit is partly barren and partly sandy and rocky. | The land along the main conduit is partly barren and partly sandy and rocky. |
| 2 | Forest Land | 309.54 ha. (approx.) | 229.04 ha. (approx.) |
| 3 | Major Advantages | ------- | • The forest land submergence is reduced from 309.54 Ha. to 229.04 Ha.<br>• Muck generation is less.<br>• Less impact on Ambient Noise levels during operation. |
| 4 | Major disadvantages | • More Deforestation<br>• Delay in obtaining clearances which might impact the project cost. | None |
| 5 | Social Issues | • This proposal involves displacement of 11,025 no's of humans and rehabilitation of 3 no of villages and 20 no of hamlets.<br>• It reduces agrarian distress prevailing in the project area. | • This proposal involves displacement of 11,025 no's of humans and rehabilitation of 3 no of villages and 20 no of hamlets.<br>• It reduces agrarian distress prevailing in the project area. |
| 6 | Techno-economic Aspects | • Open pump house | • Underground pump house and marginally cost effective. |
| 7 | Conclusions | • Even though this proposal is feasible in certain aspects the forest submergence is more in this alternative. | • Alternative- 2 is environmentally superior because of less submergence of forest land than alternative -1.<br>• This proposal is technically feasible and economically viable. |

**The below Toposheet showing proposed finalized project location & Two (2) alternative Alignments.**


**Figure 3.2 Alternative site Maps**

### 3.4 Size or Magnitude of Operation

The overall water demand of the scheme consists of irrigation requirement, domestic water supply for the en route villages, industrial requirements in Mahabubnagar, Rangareddy and Nalgonda districts and water supply to Hyderabad.

The total demand for these purposes comes out to be **90 TMC**. The storage reservoir details are given below:

| Sl. No. | Name of Reservoir | Place (Village) | F.R.L (m) | Capacity (TMC) | Ayacut (ha). |
|---|---|---|---|---|---|
| 1 | Anjanagiri Reservoir | Narlapur | 345.000 | 8.51 | - |
| 2 | Veeranjaneya Reservoir | Yedula | 445.000 | 6.55 | - |
| 3 | Venkatadri Reservoir | Vattem | 542.000 | 16.74 | 52239 |
| 4 | Kurumurthiyraya Reservoir | Karivena | 531.000 | 17.34 | 80972 |
| 5 | Udandapur Reservoir | Udandapur | 629.000 | 15.91 | 197571 |
| 6 | K.P Lakshmidevipally Reservoir | Lakshmidevipally | 670.000 | 2.80 | 74076 |
| | | | | **67.85** | **4 04 858** |

**Break-up of 90 TMC Utilisation :**

Irrigation : 80.00 TMC
Drinking water requirement for enroute villages & Hyderabad : 8.00 TMC
Industrial requirement : 2.00 TMC

### 3.5 Project description with process details

Palamuru - Rangareddy Lift Irrigation Scheme envisages to irrigate upland areas of Mahabubnagar, Rangareddy and Nalgonda districts for an ayacut of 4,04,858 ha (10.00 lakh acres), in addition drinking water facility to en route villages, Hyderabad city and industrial use in Mahabubnagar, Rangareddy and Nalgonda districts, by lifting 90 TMC of flood water in 60 days (1.50 TMC per day) during flood season from foreshore of Srisailam reservoir at Yellur (V), Kollapur (M) in Mahabubnagar district to K.P Laxmidevipally (V), Kondurg (M) Mahabubnagar (D) (from + 240 M to + 670 M) which is the highest elevation in between Mahabubnagar and Rangareddy districts with 5 stage lifting and then by gravity. The scheme contemplates en route Irrigation under different reservoirs as per their commandability. There are five stages in the project starting from foreshore of Srisailam Reservoir and ending with K.P.Laxmidevipally Reservoir.

**Table – 3.1 : Details Of Open Canals & Tunnels**

| Sl.No. | Lift | Open Canal length (km) | Tunnel Length (km) | Tunnel Dia. (m) | Discharge (cumecs) |
|---|---|---|---|---|---|
| 1 | Lift-1 | 1.250 | 0.150 | 2 x 11.50 | 656 |
| 2 | Lift-2 | 5.675 | 16.005 | 2 x 11.50 | 656 |
| 3 | Lift-3 | 3.100 | 22.000 | 2 x 11.50 | 656 |
| 4 | Lift-4 | 9.750 | 8.845 | 2 x 8.50 | 377 |
| 5 | Lift-5 | 18.800 | 14.400 | 8.00 | 161 |

**Table – 3.2 : Details of Lifts**

| Sl.No. | Lift | Lift Height (m) | Pumps & Ratings (MW) | Pump capacity (cumecs) |
|---|---|---|---|---|
| 1 | Lift-1 | 104 | 8 x 145 | 85 |
| 2 | Lift-2 | 124 | 9 X 145 | 75 |
| 3 | Lift-3 | 121 | 9 X 145 | 75 |
| 4 | Lift-4 | 126 | 5 X 145 | 75 |
| 5 | Lift-5 | 72 | 3 X 75 | 55 |

**Table – 3.3 : Details of Reservoirs**

| Sl. No. | Name of Reservoir | Place (Village) | F.R.L (m) | Capacity (TMC) | Ayacut (ha.) |
|---|---|---|---|---|---|
| 1 | Anjanagiri Reservoir | Narlapur | 345.000 | 8.51 | - |
| 2 | Veeranjaneya Reservoir | Yedula | 445.000 | 6.55 | - |
| 3 | Venkatadri Reservoir | Vattem | 542.000 | 16.74 | 52239 |
| 4 | Kurumurthiyraya Reservoir | Karivena | 531.000 | 17.34 | 80972 |
| 5 | Udandapur Reservoir | Udandapur | 629.000 | 15.91 | 197571 |
| 6 | K.P Lakshmidevipally Reservoir | Lakshmidevipally | 670.000 | 2.80 | 74076 |
| | | | | **67.85** | **404858** |

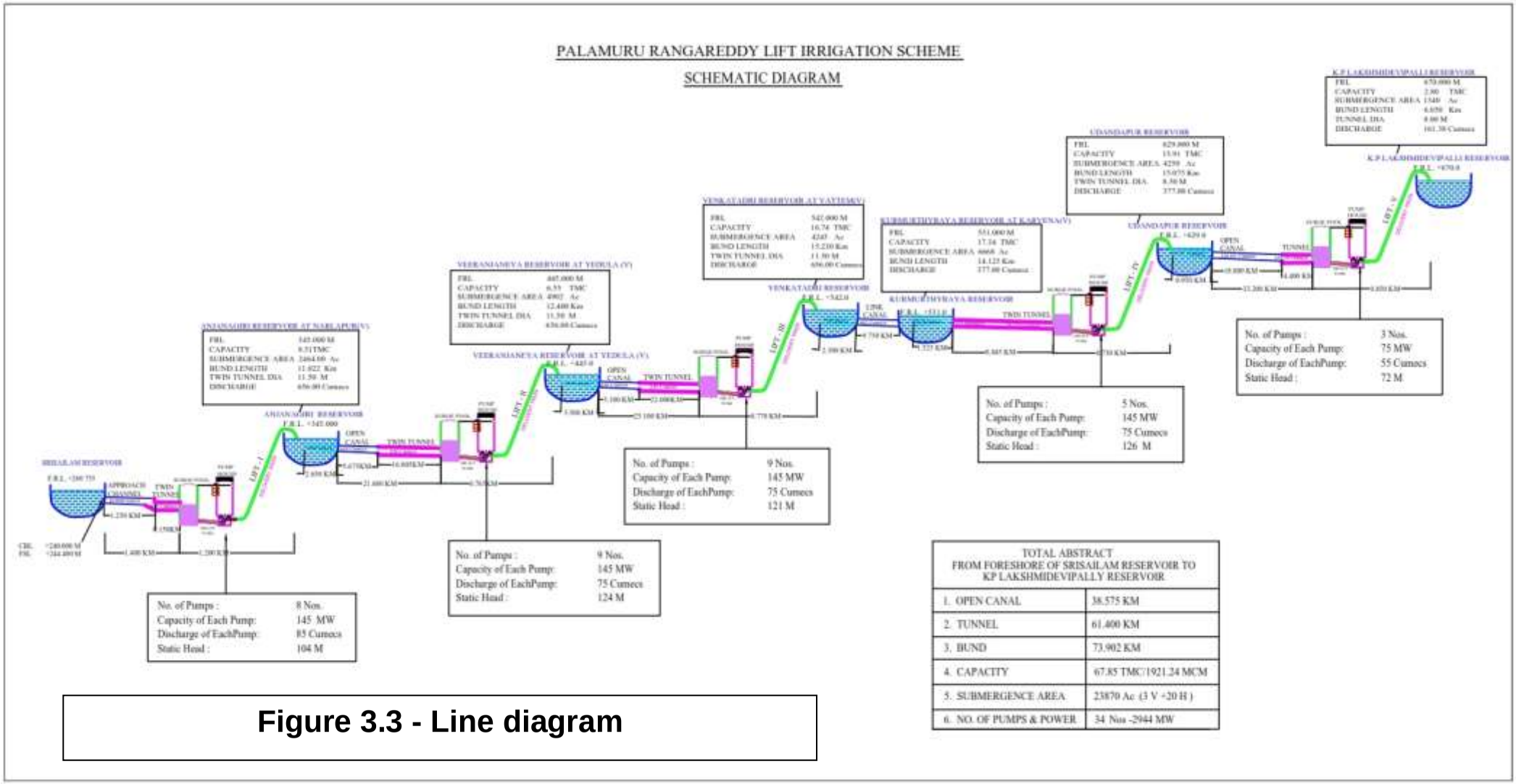



**Figure 3.3 - Line diagram**

### 3.6 Raw Material Required Along With Estimated Quantity, Likely Source, Mode of Transport of Raw Material

The construction materials are required for various project components i.e. series of reservoirs, water conveyor system consisting of gravity canal and tunnel, lift system, CM & CD structures and Distributory network system. The construction material needed for this project include cement, sand, coarse aggregates, revetment stones, reinforcement steel and structural steel. These quantities of the material are estimated as Revetment: 70,27,000 cum (1,12,43,200 MT) Coarse Aggregate: 57,62,000 cum (89,31,100 MT) Fine Aggregate: 1,33,87,000 cum (1,94,11,150 MT) Soils : 28,92,76,000 cum (52,06,96,800 MT).

Locally available materials, using excavated rock and soils. The construction materials will be procured from respective sources to the work sites.

### 3.7 Resource Optimization/recycling and reuse envisaged in the project

Resource Optimization / recycling and reuse are envisaged in this project. The excavated soil and rubble emanating from the construction of reservoirs, canals, tunnels etc. will be utilized for Earth bund, revetment, riprap & filters of the earthen dam & Aggregates for concrete if found suitable and filling of low lying areas and also for green belt development.

### 3.8 Availability of Water, Its Source, Energy / Power Requirement & Source Water requirement

The total quantity of water required during construction period for the construction activities and colonies is estimated **3100 KLD.** The water will be sourced from local sources.

### 3.9 Power requirement

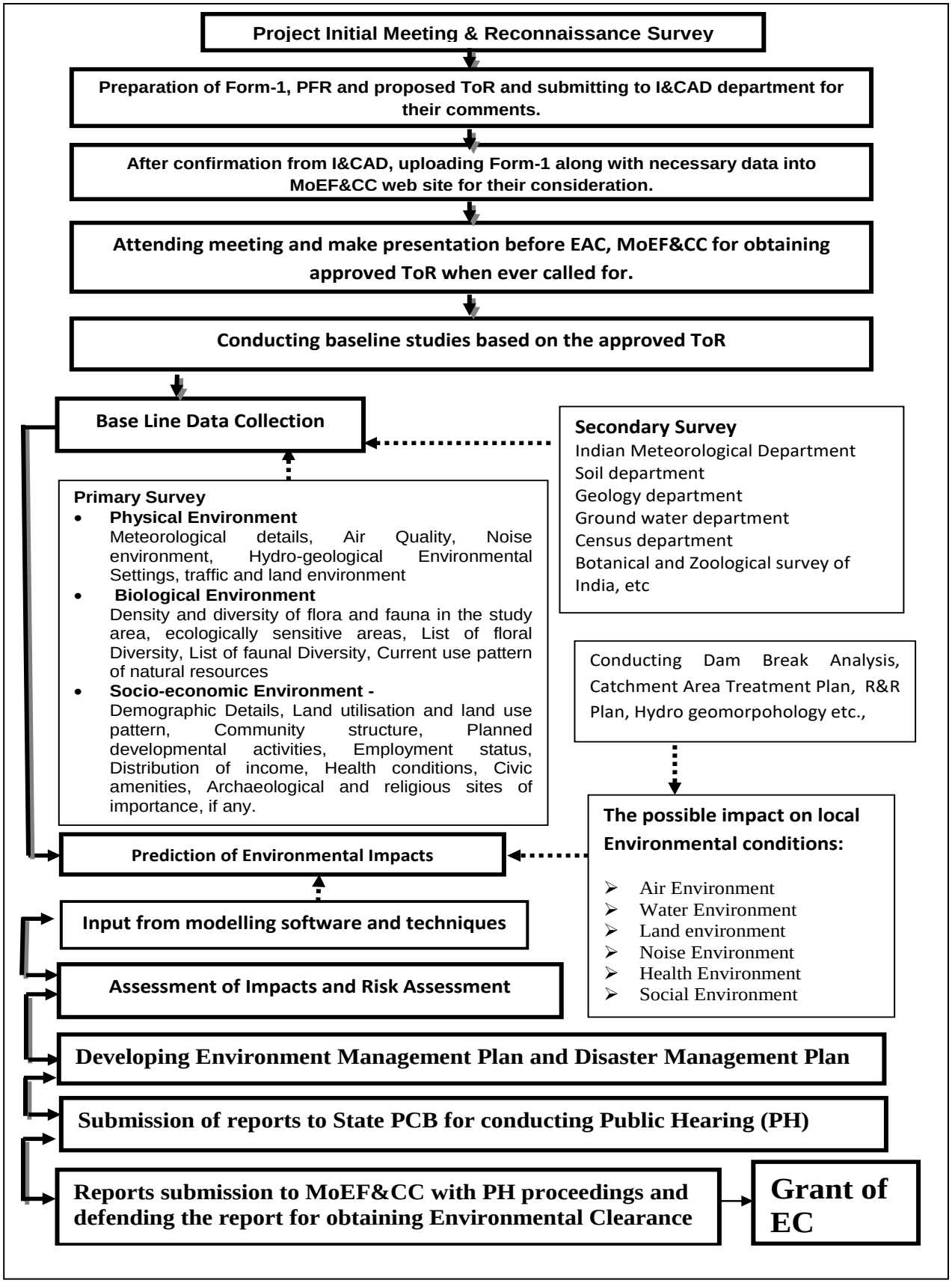
The total power requirement of the project is 2944 MW in all the 5 stages of Pumping Stations. The Power consumption of the project is 4366 Million units per annum. As the project is basically a lift irrigation project there is no power production in this project. Required Power will be supplied by DISCOMS of Telangana.

### 3.10 Quantity of Wastes to Be Generated (Liquid and Solid) and Scheme for Their Management/Disposal

A large quantity of muck is likely to be generated as the result of construction and tunnelling activities. The excavated soil and rubble emanating from the construction of reservoirs, tunnels etc. will be utilized for Earth bund, revetment, riprap & filters of the earthen dam & Aggregates for concrete if found suitable and filling of low lying areas and also for green belt development.

All these construction sites would be properly levelled. The levelling or reclamation of these sites will be made mandatory for the contractor, involved in the construction.
Any municipal solid waste generated in the project complex / project colony / labour colony, will be managed and handled in accordance with SWM Rules, 2016.
Regarding sanitary wastewater management septic tanks followed by subsurface dispersion be provided.

### 3.11 Schematic representations of the feasibility drawing which give information of EIA purpose


Project Initial Meeting & Reconnaissance Survey
Preparation of Form-1, PFR and proposed ToR and submitting to I&CAD department for their comments.
After confirmation from I&CAD, uploading Form-1 along with necessary data into MoEF&CC web site for their consideration.
Attending meeting and make presentation before EAC, MoEF&CC for obtaining approved ToR when ever called for.
Conducting baseline studies based on the approved ToR
Base Line Data Collection
Secondary Survey
Indian Meteorological Department
Soil department
Geology department
Ground water department
Census department
Botanical and Zoological survey of India, etc
Primary Survey
Physical Environment
Meteorological details, Air Quality, Noise environment, Hydro-geological Environmental Settings, traffic and land environment
Biological Environment
Density and diversity of flora and fauna in the study area, ecologically sensitive areas, List of floral Diversity, List of faunal Diversity, Current use pattern of natural resources
Socio-economic Environment -
Demographic Details, Land utilisation and land use pattern, Community structure, Planned developmental activities, Employment status, Distribution of income, Health conditions, Civic amenities, Archaeological and religious sites of importance, if any.
Conducting Dam Break Analysis, Catchment Area Treatment Plan, R&R Plan, Hydro geomorpohology etc.,
The possible impact on local Environmental conditions:
Air Environment
Water Environment
Land environment
Noise Environment
Health Environment
Social Environment
Prediction of Environmental Impacts
Input from modelling software and techniques
Assessment of Impacts and Risk Assessment
Developing Environment Management Plan and Disaster Management Plan
Submission of reports to State PCB for conducting Public Hearing (PH)
Reports submission to MoEF&CC with PH proceedings and defending the report for obtaining Environmental Clearance
Grant of EC

# 4 SITE ANALYSIS

## 4.1. Connectivity

The project site is approachable by road and the nearest town is Kollapur at a distance of 8 km. The nearest railway station is “Wanaparthi Road” at a distance of 63 km. The nearest airport is Hyderabad in at a distance of 130 km. Mahabubnagar is the District Head quarter, Jadcherla, Kalwakurthi, Narayanpet, Bhutpur, Devarakadra, Korangal, Shadnagar in Mahabubnagar District & Ganded, Tandur, Dharur, chevalla, vikarabad and Pargi of Rangareddy district are the major towns located in the project area.

The Secunderabad - Bangalore Railway line of SC Railway and Hyderabad - Bangalore National highway NH-44 and State highways SH-4 & SH-21 pass through the mid region of the project area and serve as important means of commuting.

## 4.2. Landform, Land use & Land ownership

Palamuru – Rangareddy Lift Irrigation Scheme is planned for irrigating about 4,04,858 ha (10.00 lakh acres) of cultivable command area (CCA) in the districts of Mahabubnagar, Rangareddy and Nalgonda districts. Most of the command area is drought prone area. Currently, the command area doesn’t have assured water supply. The common crops grown in this area are paddy, jowar, maize, vegetables and pulses etc.,

## 4.3. Existing Land use Pattern

Land proposed for utilization under this project is agriculture land, homesteads and some forest area. A total of **23778.96 ha.** of non- forest land and **229.04 ha. of Forest land** will be acquired for the purpose of construction of Reservoirs, tunnels, pump house, surge pool, canals & distributary network etc..

## 4.4. Topography

The proposed project is located in Deccan plateau of India. Topography is relatively mild to higher slopes.

## 4.5. Environmental Sensitivity

Anjanagiri reservoir is constructed near the Kolhapur protected forest area and about **229.04 ha.** shall be acquired for the purpose of the construction of the reservoir. Amrabad Tiger reserve forest core area is 11.95 km, buffer area 2.56 km and ESZ area is 1.56 km away from the reservoir.

### 4.6. Existing Infrastructure

The project site (Head works) is approachable by land at distance of 8.0 km and National High way (NH-44) is at distance of 41 km, Minor roads are connected to the villages within the command area.

### 4.7. Soil Classification

Mahabubnagar district is mainly covered by three types of soils Viz. red sandy soil (Dubbas and Chalkas) Red earth (with loamy sub-soils and Chalkas) and black cotton soils. Red sandy soils and red earth are permeable and well drained whereas the Nalgonda district soil comprises of red soil, black soil, alkaline soil and alluvium. The red soil constitutes 85 % of the area. Black soil is found over the limestone area, in the south- eastern part of the area. Alkaline soil occurs as limited patches in the central part. Alluvial soil occurs along Alair, Musi and Kagna rivers. Red Soils predominate in the Rangareddy district followed by Black soils.

### 4.8. Climatic data from Secondary sources

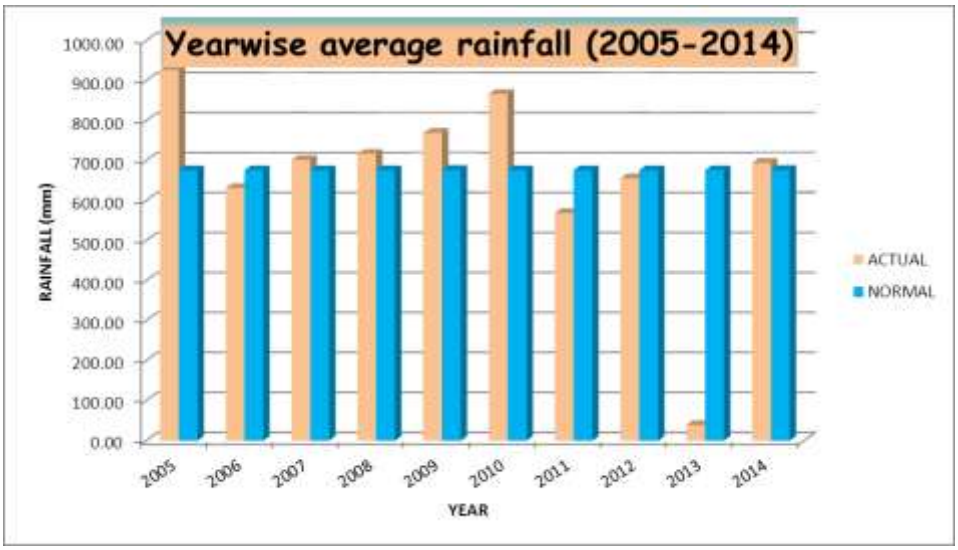
The average annual rainfall for 2005-2014 in the project area is 657.56.mm. The yearly rainfall for last ten years (2005 to 2014) has been presented in Table-4.1 and depicted graphically in Figure-4.1.

The mean seasonal rainfall distribution is 496.34 mm in South-West monsoon (June-September) to 82.65 mm in North-East monsoon (Oct-Dec), 3.41 mm rainfall in winter (Jan-Feb) and 66.54 mm in summer (March – May). The percentage distribution of rainfall, season-wise, is 76.48 % in South-West monsoon, 12.74 % in North-East monsoon, 0.54 percentage in winter and 10.25 % in summer.

Table 4.1 – Average annual Rainfall in the District

| YEAR | January | February | March | April | May | June | July | August | September | October | November | December | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2005 | 3.6 | 7.7 | 15.0 | 25.0 | 16.8 | 52.3 | 236.0 | 137.7 | 231.1 | 195.4 | 5.9 | 0.7 | 927.14 |
| 2006 | 0.0 | 0.0 | 33.6 | 58.6 | 68.5 | 114.2 | 70.0 | 84.3 | 159.8 | 17.0 | 26.1 | 0.0 | 631.97 |
| 2007 | 0.0 | 0.0 | 0.0 | 0.0 | 12.8 | 187.1 | 79.2 | 141.7 | 216.1 | 32.8 | 33.0 | 0.0 | 702.65 |
| 2008 | 0.0 | 13.1 | 137.6 | 15.7 | 6.0 | 68.0 | 93.3 | 225.3 | 118.2 | 25.4 | 13.0 | 2.0 | 717.39 |
| 2009 | 0.0 | 0.0 | 2.6 | 4.0 | 21.3 | 96.0 | 53.6 | 215.7 | 203.9 | 142.3 | 27.8 | 1.5 | 768.78 |
| 2010 | 4.3 | 1.3 | 0.1 | 8.1 | 16.5 | 86.6 | 265.2 | 205.6 | 184.2 | 76.3 | 16.2 | 3.1 | 867.41 |
| 2011 | 0.0 | 4.2 | 0.4 | 30.6 | 29.1 | 49.6 | 198.0 | 172.0 | 49.2 | 36.1 | 0.2 | 0.0 | 569.27 |
| 2012 | 0.0 | 0.0 | 0.6 | 37.3 | 8.2 | 94.5 | 159.3 | 144.6 | 98.5 | 79.1 | 34.6 | 0.0 | 656.71 |
| 2013 | 0.0 | 0.0 | 0.3 | 3.4 | 1.0 | 18.7 | 5.2 | 3.7 | 7.1 | 0.0 | 0.0 | 0.0 | 39.45 |
| 2014 | 0.0 | 0.0 | 23.5 | 17.0 | 72.2 | 53.2 | 115.1 | 187.2 | 82.3 | 37.6 | 15.8 | 4.7 | 608.75 |

Figure 4 .1 – Year wise average rainfall




The annual rainfall varies from 927.14 mm to 550.00 mm during the period from 2005-2014. The years 2006, 2011, 2012 and 2013 experienced drought conditions in the project area as the annual rainfall recorded in these four years is 7%, 16%, 3% and 93% less than the long period average (LPA) respectively. The project area experiences semi-arid climate. The peak temperature recorded in the year 2014 was 41°C in the month of April and the lowest temperature of 19°C was recorded in December, 2014.

As per the SAPCC Telangana the districts which are highly exposed to the drought are Mahabubnagar and Nalgonda mainly due to their geographic location and influence of parameters like distribution of rainfall.

### 4.9. Social Infrastructure

In the proximity of the project site, educational, religious and transportation facilities are found. The nearest Railway station is “Wanaparthi Road” at a distance of 63 km. railway station are available. The habitants have a good transportation facility as they are accessible easily. Overall it is clearly seen that the social infrastructure in and around the project site is of a good standard.

# 5 PLANNING BRIEF

### 5.1. Planning Concept (type of industries, facilities, transportation etc) town and country planning/development authority classification

Transportation facilities -Wanaparthi Road railway station at a distance of 63 km. The habitants have a good transportation facility as there are accessible easily.

The aim of the scheme is to irrigate upland areas of about a net ayacut of 4,04,858 ha (10.00 lakh acres) in Mahabubnagar, Rangareddy and Nalgonda Districts.

### 5.2. Population Projection

As the course of the project is long involving different components in different locations, no centralized congregation OR influx of people is expected. Locally available manpower shall be utilized in the nearest place of work. During the peak period about 10,000 Unskilled, Semi Skilled & Skilled personnel will be deployed along the entire stretch of the project. At any point of time and place the number of people on the work site shall not be more than 300. The people will be spread over the entire stretch of the project area which comprises of 5 lifts and 6 storage reservoirs. No labour colonies are proposed, but Workshops, Workers Rest house, Sanitation & Staff quarters will be provided at close proximity to the work site.

### 5.3. Land use planning

Based on the classification of soils and crops grown in the area, the tentative cropping pattern proposed under the project is as follows:

Only irrigation dry (I.D) crops in Kharif season are proposed to extend irrigation facilities to 4,04,858 ha by utilizing about 90 T.M.C of water.

**Existing & proposed cropping pattern details are furnished in table 5.1 & 5.2;**

**Table 5.1 : Existing Cropping pattern in the Command Area of PRLIS**

| S.No. | Type of Crop | Kharif | | Rabi | | TOTAL Area Karif & Rabi | |
|---|---|---|---|---|---|---|---|
| | | Area in Ha. | % | Area in Ha. | % | Area in Ha. | % |
| 1. | Paddy | 52364 | 12.93 | 12268 | 3.03 | 64632 | 17.74 |
| 2. | Maize | 67692 | 16.72 | 1479 | 0.37 | 69171 | 18.99 |
| 3. | Sorghum | 24684 | 6.10 | 6172 | 1.52 | 30856 | 8.47 |
| 4. | Greengram | 12439 | 3.07 | --- | --- | 12439 | 3.41 |
| 5. | Blackgram | 3555 | 0.88 | --- | --- | 3555 | 0.98 |
| 6. | Redgram | 61984 | 15.31 | --- | --- | 61984 | 17.01 |
| 7. | Cotton | 64310 | 15.88 | --- | --- | 64310 | 17.65 |
| 8. | Castor | 20621 | 5.09 | --- | --- | 20621 | 5.66 |
| 9. | Vegetables | 7759 | 1.92 | --- | --- | 7759 | 2.12 |
| 10. | Groundnut | --- | --- | 14980 | 3.70 | 14980 | 4.11 |
| 11. | Bengalgram | --- | --- | 957 | 0.24 | 957 | 0.26 |
| 12. | Sunflower | --- | --- | 1985 | 0.49 | 1985 | 0.55 |
| 13. | Safflower | --- | --- | 1207 | 0.30 | 1207 | 0.33 |
| 14. | Others | 1963 | 0.48 | 7858 | 1.94 | 9821 | 2.70 |
| | **TOTAL** | **317372** | **78.39** | **46907** | **11.59** | **364277** | **100** |

**Table 5.2 : Proposed Cropping pattern in the Command Area of PRLIS after the Project Implementation**

| S.No. | Type of Crop | Kharif | | Rabi | | TOTAL Area Karif & Rabi | |
|---|---|---|---|---|---|---|---|
| | | Area in Ha. | % | Area in Ha. | % | Area in Ha. | % |
| 1. | Paddy | 41266 | 10.19 | 33824 | 8.35 | 75090 | 10.57 |
| 2. | Maize | 75992 | 18.77 | 56735 | 14.01 | 132727 | 18.69 |
| 3. | Chillies | 67287 | 16.62 | 38740 | 9.57 | 106027 | 14.93 |
| 4. | Greengram | 25182 | 6.22 | 0 | 0 | 25182 | 3.54 |
| 5. | Blackgram | 16599 | 4.10 | 0 | 0 | 16599 | 2.34 |
| 6. | Redgram | 36842 | 9.10 | 0 | 0 | 36842 | 5.19 |
| 7. | Cotton | 68280 | 16.87 | 0 | 0 | 68280 | 9.61 |
| 8. | Castor | 2300 | 0.57 | 0 | 0 | 2300 | 0.32 |
| 9. | Vegetables | 63846 | 15.77 | 2300 | 0.57 | 66146 | 9.31 |
| 10. | Groundnut | 0 | 0 | 97125 | 23.99 | 97125 | 13.67 |
| 11. | Bengalgram | 0 | 0 | 7171 | 1.77 | 7171 | 1.00 |
| 12. | Sunflower | 0 | 0 | 57854 | 14.29 | 57854 | 8.15 |
| 13. | Safflower | 0 | 0 | 4735 | 1.17 | 4735 | 0.66 |
| 14. | Others | 5637 | 1.39 | 8502 | 2.1 | 14139 | 1.99 |
| | **TOTAL** | **403232** | **99.60** | **306987** | **75.83** | **710217** | **100** |

### 5.4. Assessment of Infrastructure Demand (Physical & Social)

Project aims towards construction of reservoirs and main canal for providing water to irrigation, drinking and industrial purpose. The proposed project envisages to utilise 90 TMC of flood water in 60 days from Krishna river providing irrigation facility to 4,04,858 ha (10.00 lakh acres) of upland areas, drinking water to en-route 1131 villages of 66 mandals and Hyderabad city, water to Industrial use in Mahabubnagar, Rangareddy and Nalgonda districts.

### 5.5. Amenities/Facilities

Proper site services such as First Aid, Canteen / Rest Shelter, Drinking Water will be provided to the construction workers. Various facilities to be provided during construction and operation of the project are as follows:

1. Electricity will be provided by transmission lines and DG sets.
2. Drinking water will be provided to the workers by Tankers during construction.
3. To provide the first aid for any sort of injuries encountered during the operation, one first aid room will be provided. First aid kit and sufficient stock of material / medicines needed for first aid shall be provided as per requirement.
4. In future if women workers are employed, arrangement for a crèche will be made as per the requirement.
5. Necessary arrangement will be made for conducting refresher course as laid down in vocational training rules to upgrade skills of the persons involved in the project.
6. Construction workers engaged in forest areas of the project will be provided with LPG/Kerosene for cooking purpose to prevent possible tree felling in forest areas for firewood.

# 6 PROPOSED INFRASTRUCTURE

### 6.1 Industrial area/Residential area/Green belt/Social Infrastructure

Proposed Project does not involve any additional infrastructure for Industrial area, residential area, Green belt, social infrastructure etc. Project involves only infrastructure which are required for irrigated agriculture and R&R of PAFs / PDFs.

### 6.2 Sewerage System

Sewage generated from the colonies is proposed to be sent to septic tank followed by subsurface dispersion which are designed and constructed as per IS 2470 Part-I & Part-II.

### 6.3 Industrial waste management

Not Applicable

### 6.4 Solid waste management

Domestic solid waste will be disposed as per the SWM Rules, 2016.

### 6.5 Power requirement & Supply / Source

The total power requirement for the project is **2944 MW** in all the 5 stages of Pumping Stations. As the project is basically a lift irrigation project there is no power production in this project. The power required will be supplied by DISCOMS of Telangana.

# 7 REHABILITATION & RESETTLEMENT (R&R) PLAN

- The project envisages acquisition of **23778.96 ha.** of non- forest land and **229.04 ha.** of forest land for various project appurtenances. A resettlement & Rehabilitation (R&R) Master Plan highlighting the guidelines of land acquisition and provision for rehabilitation measure will be formulated. The rehabilitation policies of the state government of Telangana and RFCTLARR Act, 2013, Government of India will serve as basis for preparation of the R& R plan for the project affected families.

**Table 7.1 Details of Land Acquisition**

| Extent of land required (ha) | Title of land (ha) | |
|---|---|---|
| | Govt land | Patta land |
| 24,008 | 4,802 | 19,206 |

**Table 7.2 Reservoir wise submergence of villages/Hamlets**

| Name of the reservoir | No.of Households | Population |
|---|---|---|
| Anjanagiri reservoir | 218 | 908 |
| Veerajaneya reservoir | 541 | 2360 |
| Venkatadri reservoir | 259 | 1032 |
| Kurumurthyraya reservoir | 188 | 840 |
| Udandapur reservoir | 1275 | 5885 |
| KP- Lakshmidevipally reservoir | 0 | 0 |
| **Total** | **2481** | **11025** |

**Forest Land**

Around **229.04 ha.** of forest land is affected in the project.

# 8 PROJECT SCHEDULE & COST ESTIMATES

## 8.1 Likely Date of Start of Construction and Likely Date of Completion

The project consisting of Reservoirs, tunnels, pump houses, excavation and lining of canals of all links and other structures such as super passages, aqueducts, drops, bridges etc. will be completed in 30 months from the date of signing agreement.

## 8.2 Estimated Project Cost Along With Analysis In Terms Of Economic Viability of the Project

The project comprises of the following major components.

1. Reservoirs
2. Excavation of canals
3. Construction of tunnels
4. CM and CD works
5. Land acquisition
6. Lift system
7. Underground pump houses
8. Sub-stations etc.

**Table 8.1 financial requirement for project works**

| S.No | Item | Cost (Rs. Crores) |
|---|---|---|
| 1 | Work Items | 29827.91 |
| 2. | L.S.Provisions | 2153.09 |
| 3. | Non work items | 2570.00 |
| 4. | Rehabilitation & Resettlement | 588.00 |
| 5. | Unforeseen works | 61.00 |
| | **Total** | **35,200** |

The total amount of the estimate is worked out to **Rs. 35,200 crores.**

# 9 ANALYSIS OF PROPOSAL

## 9.1 Financial and Social Benefits with Special Emphasis on the Benefit to the Local People Including Tribal Population, If Any, In the Area

Palamuru –Rangareddy Lift Irrigation Scheme envisages to irrigate the upland areas of about a net ayacut of 4,04,858 ha (10.00 lakh acres), in addition drinking water facility to enroute villages, Hyderabad city and industrial use in Mahabubnagar, Rangareddy, and Nalgonda districts, by lifting 90 TMC of flood water in 60 days(1.50 TMC per day) during flood season from foreshore of Srisailam reservoir near Yellur(V),Kollapur(M) in Mahabubnagar district to K.P Laxmidevipalle (V), Kondurg (M) ,Rangareddy (from +240 to + 670 m) which is the highest elevation in between Mahabubnagar and Rangareddy districts with 5 stage lifting and then water flows by gravity.

The importance of irrigation is to increase agricultural output and employment. The proposed project is expected to provide employment in different activities such as construction, transportation and plantation activities during construction phase and subsequently in agro - and other industries. The total man power requirement for the construction period is 10000. The people will be spread over the entire project area which comprises of 6 nos. of Reservoirs.

It is contemplated to irrigate a command area of 4,04,858 ha (10.00 lakh acres) in three districts and provide drinking water to en route villages as well as Hyderabad and industrial requirements. The cost of the project is **Rs. 35,200 crores**.

**Table -9.1 Benefits without and with project**

| Item | Without project (in Lakhs) | With project (in Lakhs) |
|---|---|---|
| Net value of produce | 29051.14 | 820784.08 |
| Net Annual benefits | | 791732.94 |
| Drinking water supply | | 11506.63 |
| Industrial water supply | | 8304.33 |
| Fisheries returns | | 8505.25 |
| **Total Annual benefits** | **29051.14** | **1640833.23** |

**The Benefit - Cost Ratio works out to be 1.23.**

**Table – 9.2 Total cost for B-C ratio**

**PALAMURU RANGAREDDY LIFT IRRIGATION SCHEME**

**Rs. In Lakhs**

| Sl.No | PARTICULARS | BEFORE IRRIGATION | AFTER IRRIGATION |
|---|---|---|---|
| **A.** | **GROSS RECIEPTS** | | |
| 1 | Gross Value of the farm produce | 57039.42 | 1053785.25 |
| 2 | Dung Receipts @ 30% of the fodder expenditure | 2566.77 | 31613.56 |
| 3 | Total (A): Gross Reciepts(1+2) | 59606.20 | 1085398.81 |
| **B.** | **EXPENSES** | | |
| 1 | Expenditure on Seeds | 16466.32 | 78094.74 |
| 2 | Expenditure on Manure | | |
| 3 | Expenditure on Pesticides | | |
| 4 | Expenditure on Hired Labour | | |
| 5 | Fodder expense @ 15%/10% of Gross value of farm produce | 8555.91 | 105378.53 |
| 6 | Depreciation on implements @ 2.7% of Gross value of farm produce | 1540.06 | 28452.20 |
| 7 | Share & Cash rent @ 5%/3% of total gross value of farm produce | 2851.97 | 31613.56 |
| 8 | Land revenue @ 2% of total gross value of farm produce | 1140.79 | 21075.71 |
| 9 | Total (B): Expenses (1 to 8) | 30555.06 | 264614.73 |
| **C.** | **NET VALUE OF PRODUCE** | | |
| 1 | Total Gross Reciepts | 59606.20 | 1085398.81 |
| 2 | Minus total expenses | 30555.06 | 264614.73 |
| 3 | NET VALUE OF PRODUCE | 29051.14 | 820784.08 |
| **D.** | **ANNUAL BENEFITS** | | |
| 1 | Net value after irrigation | 820784.08 | |
| 2 | Net value before irrigation | 29051.14 | |
| 3 | Net annual benefits | 791732.94 | |
| 4 | Revenue from Domestic water supply 227 M cum @ 50.69 Lakhs per M cum. | 11506.63 | |
| 5 | Revenue from Industrial water supply 57 M cum. @ 145.69 Lakhs per M cum. | 8304.33 | |
| 6 | Fisheries (Average Reservoirs Area*Rate as per Fisheries Department) | 8505.25 | |
| | Total (D) | 820049.15 | |
| **E.** | **ANNUAL COSTS** | | |
| 1 | Interest on Capital @ 8% of estimated total cost of the project Rs 35,200 Cr | 352000.00 | |
| 2 | Depreciation of the project @ 1 % of the project cost Rs 35,200 cr | 3520.00 | |

| | | |
|---|---|---|
| 3 | Annual operation and maintenance charges @ Rs. 223/Ha | 902.83 |
| 4 | Maintenance of Head works @ 1% of the cost of Head works Rs 14500 Cr | 14500.00 |
| 5 | Depreciation of Pumping System @ 3.33% of the estimate cost of Pumping station assuming life of the system as 30 Years. Rs 14500 | 48285.00 |
| 6 | Power charges for lift irrigation Rs 248980 Lacs | 248980.00 |
| 7 | Total ( E ): | 668187.83 |
| | **BENEFIT COST RATIO 820049.15 / 668187.83** | **1.23** |

| | | |
|---|---|---|
| 1 | at 10% Interest if Benefit reduces by 10%, BC Ratio is | 1.104 |
| 2 | at 10% Interest if Cost increases by 10%, BC Ratio is | 1.115 |
| 3 | at 10% Interest rate if Benefit reduces by 10% & Cost increases by 10% BC Ratio is | 1.004 |

ANNEXURE-10

# Photographs showing construction of PR LIS

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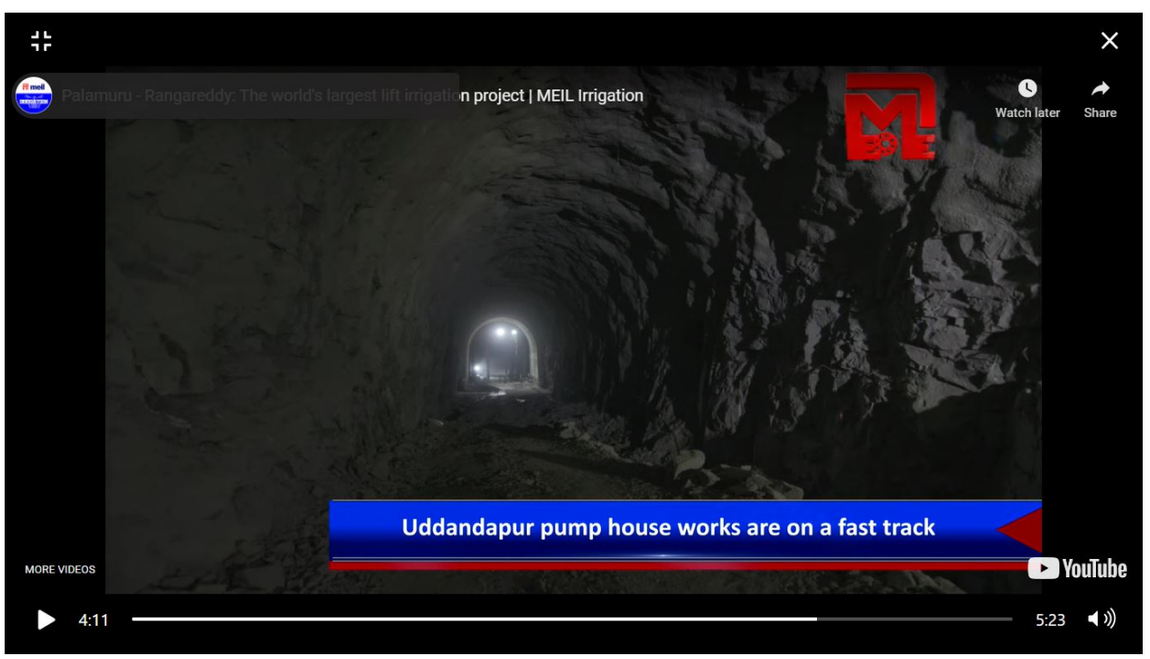
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