

BEFORE THE NATIONAL GREEN TRIBUNAL SITTING AT PUNE

ORIGINAL APPLICATION NO. 10 OF 2023

(Under Section 18(1) read with Sections 14 and 20 of the National Green Tribunal Act, 2010)

Federation of Rainbow Warriors and Anr)...Applicants

Versus

Union of India and Ors) ...Respondents

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**The index is filed on the day of November at Goa
Through**



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Applicant

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AFFIDAVIT IN REJOINER ON BEHALF OF THE APPLICANTS

1. I, David Rodrigues, the authorised signatory of the Applicant No. 1 above named, age 56 years, r/o House No 1053/B/4, Ulandi, Gandhi Road, Bacbhat, Raia, Salcete, Goa, 403720 being authorised signatory of the Applicant No.1 herein, do hereby state on solemn affirmation.
2. I say that I have read the above captioned Application as well as the affidavits filed by the Respondent Nos 1, Respondents Nos 7,9, 10, 13,14 and 15in OA 10/2023 and am familiar with their contents. Thus I am competent to depose on behalf of the Applicants in the captioned Original Application No. 10/2023. At the outset, I say that the contents of these Affidavits in Reply are denied in toto by the Applicants and nothing in the said Affidavits in Reply should be considered to be admitted by the Applicants for want of specific denial.

RESPONSE TO THE AFFIDAVIT IN REPLY OF THE RESPONDENT NO. 1 MOEFCC

3. I further say at the outset I say that the affidavit of the Respondent MoEFCC, being prepared without paragraph numbers, convoluted and repetitive, is not possible to respond to in para-wise manner. Instead, the Applicants have responded to the affidavit of the MoEFCC so as to respond to the themes of the Affidavit of the Respondent No. 1 which has been summarised as follows
- i. Lack of denials offered against comparison of provisions between the CRZ Notification of 2011 and 2019 showing a clear demonstration of how protections against development and reinforcing conservation of CRZ areas have been diluted or completely done away with in the CRZ Notification of 2019.
 - ii. Assertions that Applicants have made “sweeping statements based on their own assumptions”, asserting the objections of the Applicants were meritless.
 - iii. Assertions that the Respondent No. 1 has maintained and complied with due procedure of considering suggestions and objections of the public to the draft of the impugned CRZ Notification of 2018.
 - iv. Assertions that the provisions of the CRZ Notification of 2019 are consistent with the recommendations of the Shailesh Nayak Committee

ADMISSION THAT THE IMPUGNED NOTIFICATION DILUTES PROVISIONS OF THE CRZ NOTIFICATION OF 2011

4. It is submitted that repeatedly throughout its affidavit, the Respondent No.1 when addressing submissions made by the Applicants that the CRZ Notification of 2019 dilutes provisions of the CRZ Notification of 2011, the Respondent No.1 has glossed over such provisions within the 2019 notification, and stated,

“In the present case of the CRZ Notification of 2019, the relaxation has been given subject to environmental safeguards mentioned in page 31 of the Notification reproduced below,

(ii) ... Provided that the CRZ limit of 50 meters of width of the creek whichever is less, shall be subject to revision and final approval of the respective CZMPs as per this notification, framed with due consultative process, public hearing etc. and environmental safeguards enlisted therein”

5. The aforementioned submission has been made by the Respondent No. 1 in relation to:
- i. The reduction of NDZ around tidally influenced bodies from 100m from the HTL or the width of the creek, (whichever is less) to 50m addressed at page 1192 of the Affidavit of the Respondent No. 1.
 - ii. The submission of the Applicants that the impugned notification has diluted the provisions of the CRZ Notification of 2011 and also contravenes the recommendations of the Swaminathan Committee report to strengthen and enhance provisions of the CRZ Notification - mentioned at page 1325 of the Affidavit in Reply

- iii. The submissions of the Applicant regarding the objections submitted by them when the draft version of the impugned Notification was published for objections and suggestions - mentioned at page 1328 of the Affidavit in Reply
6. *“Further, as per clause 7(1) of CRZ 2019, even permitted activities attracting the provisions of this notification shall be required to obtain CRZ clearance prior to their commencement”*
7. The aforementioned submission has been made by the Respondent No. 1 in relation to:
- i. Reduction of protection granted to sand dunes at page 1198 of the affidavit of the Respondent No.1.
 - ii. Permission of various types of projects and constructions in CRZ areas under the category of “defence”, “strategic” and “public utilities” at page 1206.
 - iii. The introduction of ancillary facilities for industries like storage terminals for oil and other substances, power generation through non-conventional sources, manual mining of atomic minerals etc being permitted in inter-tidal areas at page 1218 of the affidavit.
 - iv. The inclusion of salt pans in CRZ IB areas where the amount of permissible construction and development permitted has increased- mentioned at pg 1220 of the affidavit in Reply

- v. The relaxation granted to allow “strategic” projects such as the Sagarmala Project and Smart-Cities in CRZ areas at page 1223 of the Affidavit in Reply.
 - vi. The destruction of small-scale fisheries by allowing reclamation of CRZ IV areas discussed at page 1225 and 1226 of the affidavit in Reply.
 - vii. The grounds raised by the Applicants in the present Application regarding the need to preserve coastal areas mentioned at page 1329-1330, 1340 of the affidavit in Reply
8. It is pertinent to note that a requirement to obtain a CRZ clearance is in itself not a measure of preservation or conservation of a CRZ area, especially when the alarming failure to implement the CRZ notification of 2011, particularly by government bodies responsible for implementing the notification, has been recorded time and time again in the Performance Audit Report on Conservation of Coastal Ecosystems prepared by the Comptroller and Auditor General for the period of 2015-2020 and several judgments of this Hon’ble Tribunal. Similarly, the removal of CRZ categorisation for land that was previously categorised as CRZ under the 2011 notification is also a guarantee that such areas will no longer be offered any protection against destruction due to development and construction.
9. I further say that perhaps the most egregious dilutions of provisions for CRZ preservation from the 2011 notification made in the 2019 notification, which have not been denied by the Respondent No. 1 are:

- i. Complete Omission of protection of Khazans
- ii. Reduction of NDZ areas from 100m from the HTL or the width of the creek, (whichever is less) to 50m from tidally influenced bodies and de-linking of hazard lines from the CRZ regime
- iii. Liberalising FSI norms frozen in the previous CRZ notifications as per
- iv. Allowing local government authorities such as Municipal Corporations to approve CRZ permissions
- v. Distinctions placed for protected sand dunes in as much as only “active sand dunes” are protected, and hills remain unprotected under the CRZ Notification of 2019

10.I say that the complete elimination of protection to Khazan lands in Goa in the impugned 2019 Notification is perhaps the most egregious change in the impugned notification with relation to the coastal areas of Goa. The Respondent No.1 has conveniently not addressed the fact that Khazans have been completely eliminated as protected NDZ lands in the impugned notification, but has instead attempted to deflect the the attention of this Hon’ble Tribunal to a notification dated 26.11.2021 annexed at page 1521 of the affidavit which amends the impugned notification to protect mangroves beyond sluice gates that were in existence prior to 19th February 1991. However the Respondent has not addressed the fact that Khazans are low-lying lands that are tidally influenced and are normally

fully cultivated with paddy, and salt water is restricted to narrow channels in between the paddy fields, with sluice gates at the bandhs to regulate flow. Most Khazans don't have mangroves, unless abandoned, and, resultantly, river bandh is breached allowing flooding with saline water and mangrove growth.

11. Further it is pertinent to note that the amendment notification of 2019 actually notes in its preambulatory clauses that,

“ AND WHEREAS, the Central Government have received representations from the State Governments for inclusion of those provisions in CRZ Notification 2019, which were already available in the CRZ Notification, 2011 but have been missed out in the CRZ Notification 2019, with regard to restricting demarcation of High Tide Line (HTL) in Khazan Land to the bund / sluice gate, collection of dead shells by traditional communities in CRZ areas and delineation of HTL and CRZ categories in the Sundarbans Biosphere Reserve;

AND WHEREAS, the provisions related to demarcation of High Tide Line (HTL) in Khazan Land to the bund / sluice gate and delineation of HTL and CRZ categories in the Sundarbans Biosphere Reserve were incorporated in the CRZ Notification 2011, through amendment vide notification number S.O. 1422 (E), dated the 1st May 2020, however, these provisions could not be incorporated in CRZ Notification 2019, as it was notified on 18th January, 2019 i.e. before the above-said amendment dated the 1st May 2020;

AND WHEREAS, the provisions related to collection of dead shells by traditional communities in CRZ areas was included in the CRZ Notification 2011 through notification number S.O. 19(E), dated the 6th January 2019, however, the same was erroneously left out in the subsequent amendment vide number G.S.R. 1227(E), dated the 6th October 2017, and as such, the same could not be incorporated in the CRZ Notification 2019;

AND WHEREAS, the National Coastal Zone Management Authority (NCZMA) in its 42nd meeting held on the 23rd March, 2021 has recommended that the above-said provisions which were already available in the CRZ Notification, 2011 and had been inadvertently or erroneously missed out in the CRZ Notification, 2019, shall be included in the CRZ Notification, 2019;

AND WHEREAS, in view of the fact that the provisions already applicable vide CRZ Notification, 2011, are proposed to be included in the CRZ Notification, 2019, and as there is no fresh restriction or prohibition being imposed vide proposed amendment notification, therefore, the requirement of notice under clause (a) of sub-rule (3) of rule 5 of the Environment (Protection) Rules, 1986 is hereby dispensed with in public interest;”

It is therefore a formally admitted position of the Respondent no. 1 that the impugned notification had omitted several provisions in the 2011 notification, some of them allegedly being "inadvertent". It is also interesting to note that the amendment notification makes it clear that only the representations of State Governments to re-introduce provisions of the 2011 CRZ notification within the impugned notification. Objections and suggestions of the public including those of the Applicants have not been considered at all by the Respondent.

12. It is further reiterated that mangroves beyond sluice gates are not the only type of Khazan lands that deserve protections as NDZ. The Respondent No. 1 has not made any submission of the draft Khazan Land Management Plan for the protection of Khazan lands in Goa that is still available on the website of the GCZMA which was required to be prepared under the CRZ Notification of 2011. A copy of the draft Khazan Land Management Plan for the State of Goa available on the website of the Goa Coastal Zone Management Authority has been annexed hereto and marked as **Annexure A-1**. It is pertinent to note that as per the said draft Khazan Management

Plan there are approximately 18,921 Hectares of Khazan land in the State of Goa

13.I say that it must be noted by this Hon'ble Tribunal that the current CZMP maps for Goa prepared under the CRZ Notification of 2011 and notified in 2022 actually demarcate Khazans as protected CRZ-1 areas, and that is an undeniable fact that these areas will no longer be protected under the impugned notification. A copy of a CZMP map bearing Sheet No. 13 prepared under the CRZ Notification of 2011 showcasing demarcated khazan lands has been annexed hereto and marked as **Annexure A -2**. It is pertinent to note that these CZMP maps prepared under the 2011 notification at its draft stage did not accurately reflect Khazan lands and due to the strong objections of the public during public hearings, these Khazan areas were demarcated afresh in the finally notified CZMP maps prepared under the 2011 notification.

14.I further categorically reject and deny the blatant falsehood put forth by the that all Ecologically Sensitive Areas in coastal areas have been mapped and that the *“most sensitive and vulnerable areas in the coastal regions viz CRZ-1 and CRZ-IV have been accorded due importance in coastal environment regulations under the new notification”*. I say that in fact the ecologically sensitive areas of low-lying Khazan lands and islands of Goa which were protected as no-development zones under the CRZ Notification of 2011 have been purposefully omitted from the CRZ Notification of 2019.

15.Similarly, in relation to various forms of development allowed within mangrove bufferzones in the impugned CRZ Notification of 2019, the Respondent no. 1 has placed forth a ludicrous and nonsensical argument at

page 1309 of its Affidavit that permitting walkways around mangroves would prevent them from encroachments.

16. It is also reiterated by the Applicants that the Respondent has reduced the actual areas categorised as CRZ:

- i. Reduction of NDZ areas from 100m from the HTL or the width of the creek, (whichever is less) to 50m in tidally influenced areas
- ii. Removing hazard lines a demarcation of CRZ boundaries
- iii. Reducing protection of islands under 100 sq m such that only a radius of 20m from the tidal are maintained CRZ areas on contrast to 500m that was applicable under the CRZ Notification of 2011
- iv. Reducing the types of lands constituting CRZ I areas including hills and creating an arbitrary distinction between active and other types of sand dunes
- v. Removing Khazan areas from the list of protected NDZ areas, especially in Goa
- vi. Creating arbitrary distinctions on what constitutes substantially “built up area” in relation to CRZ III areas

17. In relation to the defence put forward by the Respondent No. 1 at pages 1248-1254 of its Affidavit regarding the liberalisation of FSI/FAR norms for the first time in 18 years, since they had been frozen in CRZ areas across the country since the 1991 CRZ notification, emphasises the following

- i. The Shailesh Nayak Committee recommended it due to the fact that there was a disparity in FSI/FAR norms in coastal areas and other areas
- ii. There was allegedly a request put forth for such liberalisation by the Government of Maharashtra allegedly to curb illegal encroachments and slums

18. It is submitted that neither of these arguments have any logical bearing to the need to preserve, protect and conserve CRZ areas through the CRZ Notification. The need and value to freeze FSI norms in CRZ areas is well justified in the judgments of the Hon'ble Bombay High Court in the matter of *Overseas Chinese Cuisine (India) Pvt Ltd v MCGM* 1999 SccOnline Bom 473 and *Writ Petition No 1010/1999* . There is no justification for these liberalisations of FSI norms provided by the Respondent no. 1 or indeed the Shailesh Nayak committee against the reasoning of the Hon'ble High Court in terms of preserving and protecting CRZ areas from development.

19. Needless to say, the averments of the Respondents seeking to justify such relaxations in FSI/FAR norms are exclusively to favour and address the request of the Government of Maharashtra to facilitate high rise and commercially lucrative development in CRZ lands. Not even a modicum of consideration or application of mind has been extended by the Respondent No.1 for the need to preserve and protect CRZ areas from such development across the country, particularly the State of Goa.

20. The Respondent No. 1, at page 1232 of its affidavit that local government authorities such as Municipal Corporations can approve CRZ permissions in certain conditions.
21. I say that at pages 1318 - 1325 of its Affidavit the Respondent no. 1 has simply no answer to justify the evident and irrefutable violation of the principle of non-regression as raised by the Applicants at pages 1212-1216 of the OA. In fact, through its admission of the changes made in the impugned notification in comparison with the 2011 notification, it is evident that the Respondent No. 1 has openly and clearly flouted the principle of non-regression. The Respondent has also reduced the arguments of the Applicants that the impugned notification contravenes its Parent Act, the Environment Protection Act, 1986 to a superficial and meaningless comparison of the preambulatory clauses of the 2011 notification with the preambulatory clauses of the 2019 notification.
22. I say that I strongly deny the averment of the Respondent No. 1 in as much as the thousands of objections and suggestions submitted to the draft CRZ Notification published on 18.04.2018 were blatantly ignored by the Respondent No. 1. I say that even the Applicants objections and suggestions at pages 814-867 of the Application was completely ignored and the impugned CRZ Notification of 2019 was not at all prepared after taking the objections and suggestions of the Applicants and similarly aggrieved individuals "*into consideration*".
23. In fact, at pages 1275 to 1284 of the affidavit, while addressing the averment of the Applicants that the draft Notification published for objections and suggestions, the Respondent has not denied a single of the 9 instances of differences between the raised by the Applicants between

the draft version and the finally notified impugned notification. The Respondent No. 1 has only stated that such changes between the draft and the final notification were “justified”. The Applicants therefore reiterate their submission that it is settled law that the changes made in a final version of a notification cannot be alien to its draft published for objections and suggestions.

24.I say that at para 9 of the first Affidavit in Reply filed by the MoEFCC in OA 106/2022 the said “*final Note for approval of CRZ Notification submitted to the Union Cabinet on 10.12.2018*” which was allegedly prepared based on the comments of the 11 Ministries/Department of the Government of India is not in the public domain and the Applicants have no knowledge of its contents. I say that the Respondent No. 1 should be made to produce the said note before this Hon’ble Tribunal. I say that undoubtedly producing the said note would result in some transparency before this Hon’ble Tribunal as to what the real agenda and motivation of the Central Government, particularly the Respondent No. 1 was in relation to enacting the impugned CRZ Notification of 2019.

25.I say that the distinctions placed for protected sand dunes in as much as only “active sand dunes” are protected, and hills remain unprotected under the CRZ Notification of 2019 has been denied simpliciter with no factual basis or legal justification by the Respondent at page 1198 of the Affidavit in Reply. In reality, such protections are not carried forward in the CRZ Notification of 2019. No explanation has been provided by the Respondent as to what constitutes an “active” sand dune.

26.The Respondent No. 1 has similarly dealt with the issue of the “explanation” of what constitutes a “substantially built up area” at pages

1189-1191 of its affidavit. A flimsy explanation of the definition of a “substantially built up area” is provided allegedly by looking at the census of what appears to be the whole country - without any application of mind as to what would currently constitute substantially built up in a CRZ area.

SHAILESH NAYAK COMMITTEE REPORT

27.I say that the Shailesh Nayak Committee report was severely flawed, capriciously prepared and ignored and misrepresented the ground reality of the environmental fragility of CRZ areas. I say that the defence regarding the terms of reference of the Shailesh Nayak Committee adopted by the Respondent No. 1 in its affidavit is that some of the six basic principles to be considered and adopted by the Shailesh Nayak Committee in the formulation of its report included, inter alia,

“ integration of development/economic and growing needs of the Society with coastline preservation, keeping in view the sensitivity of the coast and ensuring no or minimum impact to the coastal environment.”

And

“ensuring that there is no conflict of CRZ regulations with the existing norms issued by the States/UTs as well as by the Central Government from time to time”

This admission regarding the clear motives of the Shailesh Nayak committee to prioritise consistency in town planning, construction and development regulations and how to *“integrate development/economic and growing needs of Society with coastline preservation”* has been stated multiple times across the affidavit in Reply of the Respondent No. 1

28. It is submitted that these “basic principles” adopted by the Shailesh Nayak Committee themselves show clearly that the Report was commissioned with a view to facilitate construction and development in coastal areas and not to preserve, protect and conserve these areas, and therefore the Report and its recommendations should not have served as the foundation of a new CRZ notification to supersede the the 2011 notification. The Applicants repeat and reiterate its submissions that the Shailesh Nayak Committee report, on the basis of whose recommendation the impugned Notification has been issued, had the limited scope of addressing the grievances with respect to the CRZ Notification, 2011 raised by Maharashtra, Karnataka and Kerala, which is evident from the perusal of the Report.

29. Notwithstanding the fact that the position of the Applicants that the Shailesh Nayak Committee report is flawed, inadequate and perverse and should not have formed the basis of the preparation of a CRZ Notification, there are certain provisions of the impugned notification which even exceeds the recommendations of the Shailesh Nayak Committee Committee report, such as:

- i. The Shailesh Nayak Committee report in its Proposed Draft CRZ Notification retained the extent of CRZ in case of tidally influenced water bodies at 100m from HTL or width of the creek, whichever is less.
- ii. The Shailesh Nayak Committee Report extends protection to the 11 ecologically sensitive areas listed in the 2011 notification, which includes turtle nesting sites, mud flats, sand dunes, mud flats etc. Similarly, there is an effort to focus protection on CRZ IV areas, which include mainly the open seas and water bodies, and the sea

bed and river beds. These protections have been done away with in the impugned notification

30. I say that contrary to what is stipulated in the Affidavit of the Respondent No.1, the CRZ Notification of 2019:

- i. Has not been prepared with due consideration of the *“overall imperative of sustainable development of coastal areas and need for conserving coastal environment.”*
- ii. Does not *“go a long way in meeting the aspirations of coastal communities and vulnerable populations in the coastal areas at large”*
- iii. Has not been framed by following due procedures.
- iv. Has not been finalised after due diligence involving consultations at various levels and following due procedures.

In fact I say the CRZ Notification of 2019 opens up hitherto preserved coastal regions to unwarranted and environmentally destructive development and has not been prepared in keeping with the goals of sustainable development.

31. In relation to the contents of para 7 of the Affidavit, I deny that the order of the Southern Zone Bench and the Principal Bench of this Hon'ble Tribunal dated 11.04.2022 and 16.01.2024 in any way amounts to a condonation or finding of approval of the CRZ Notification of 2019 by this Hon'ble Tribunal or its zonal benches. I say that the issues considered by

the Southern Zone and Principal Bench of this Hon'ble Tribunal were completely different to the issues raised in the present Application and further the impugned CRZ Notification of 2019 was not challenged in the said matter.

32.I therefore deny the contents of Affidavit and categorically and emphatically deny that the present Application deserves to be dismissed.

OTHER AFFIDAVITS IN REPLY FILED BY OTHER STATES

33. It is submitted that the Coastal Zone Management Authorities in the states/UT of the Respondent No. 9 [Andhra Pradesh], the Respondent No. 14 [Puducherry] and Respondent No. 15 [Andaman and Nicobar islands], Respondent No. 10 [Odisha], Respondent No. 7 [Kerala] and Respondent No.13 [Lakshadweep island] have filed their replies in to the present OA 10/2023. It is submitted that the affidavits in Reply filed by these Respondents do not contain arguments on merits about the provisions of the CRZ Notification of 2019 and only contain particulars of the status of implementation, or lack thereof, of the impugned CRZ Notification of 2019. Therefore these affidavits warrant no specific comment on the part of the Applicants.

34.I deny that the impugned CRZ Notification of 2019 is a reflection of the representations from stakeholders such as indigenous coastal communities, fisherfolk, environmentalists and public spirited citizens. I repeat and reiterate my submissions in the present Application that the CRZ Notification of 2019 completely undoes and dilutes the existing protections granted to CRZ areas under the CRZ Notification of 2011. I say that the impugned CRZ Notification of 2019 is contrary to the principle of non-

I accordingly say that the present Application deserves to be allowed and the prayers therein should be made absolute by this Hon'ble Tribunal.

Solemnly Affirmed at Goa)

Dated this 4th Day of November 2025)

David Rodrigues

Deponent

David Rodrigues

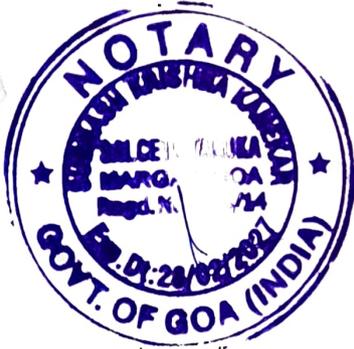
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R.R.

RONITA BHATTACHARYA

Advocate for the Applicant

Before me



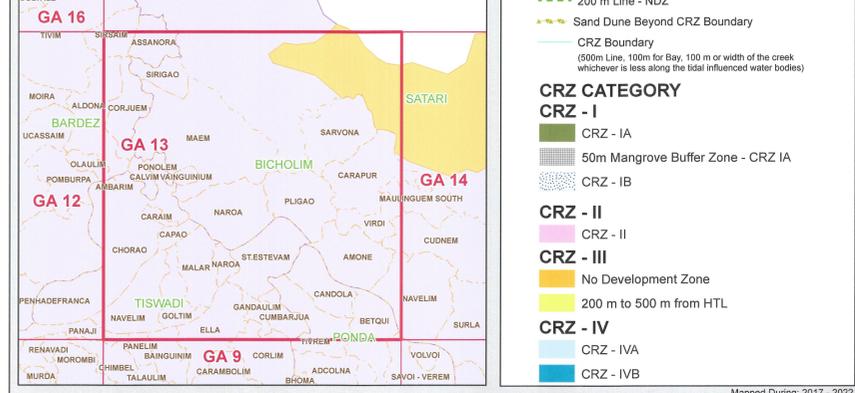
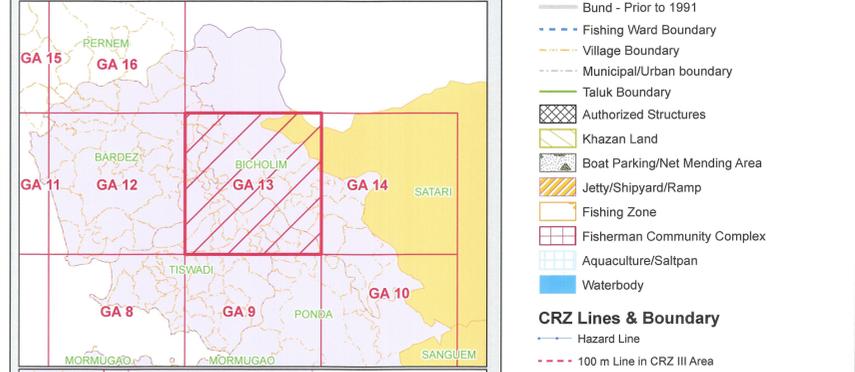
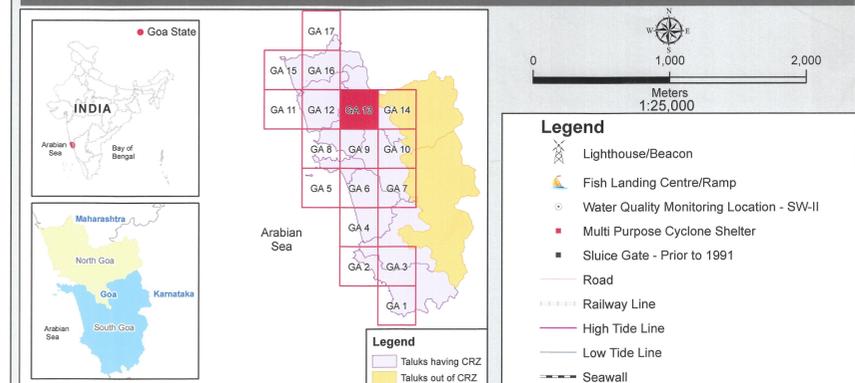
Solemnly affirmed before me by
Shri/Smt. David Rodrigues
Who is identified to me by vide
FRIC No. TV20311993
Shri/Smt. _____

Who is personally known to me
this 4th day of Nov. 2025
Reg. No. 1339/2028

Manav
04/11/2025

SUBHASH KRISHNA KANEKAR
NOTARY
SALCETE TALUKA
STATE OF GOA (INDIA)

Annexure A-1



DATA SOURCE

I) National Centre for Sustainable Coastal Management
 HTL, LTL, CRZ-IA, Infrastructure facilities - Lighthouse, Seawall
 II) Survey of India
 III) DSLR - Goa
 Road, Village Boundary, Municipal Boundary, Taluk Boundary

IV) Department of Fisheries - Goa
 Fish Landing Centre/Ramp, Fishing Ward Boundary, Fishing Zone, Fisherman Community Complex, Boat Parking/Net Mending Area
 V) Department of Water Resources - Goa
 Bund prior to 1991, Sluice Gate prior to 1991, Khazan Land

VI) State Pollution Control Board - Goa
 Water Quality Monitoring Location - SW-II
 VII) Department of Environment and Climate Change- Goa
 Beacon, Authorized Structures, Jetty/Shipyard/Ramp
 VIII) Department of Archives and Archaeology and Town and Country Planning Department - Goa
 Archaeological and Heritage Site (CRZ IA)

CRZ: Coastal Regulation Zone NDZ: No Development Zone DSLR: Directorate of Settlement & Land Records

PREPARED AS PER COASTAL REGULATION ZONE NOTIFICATION, 2011

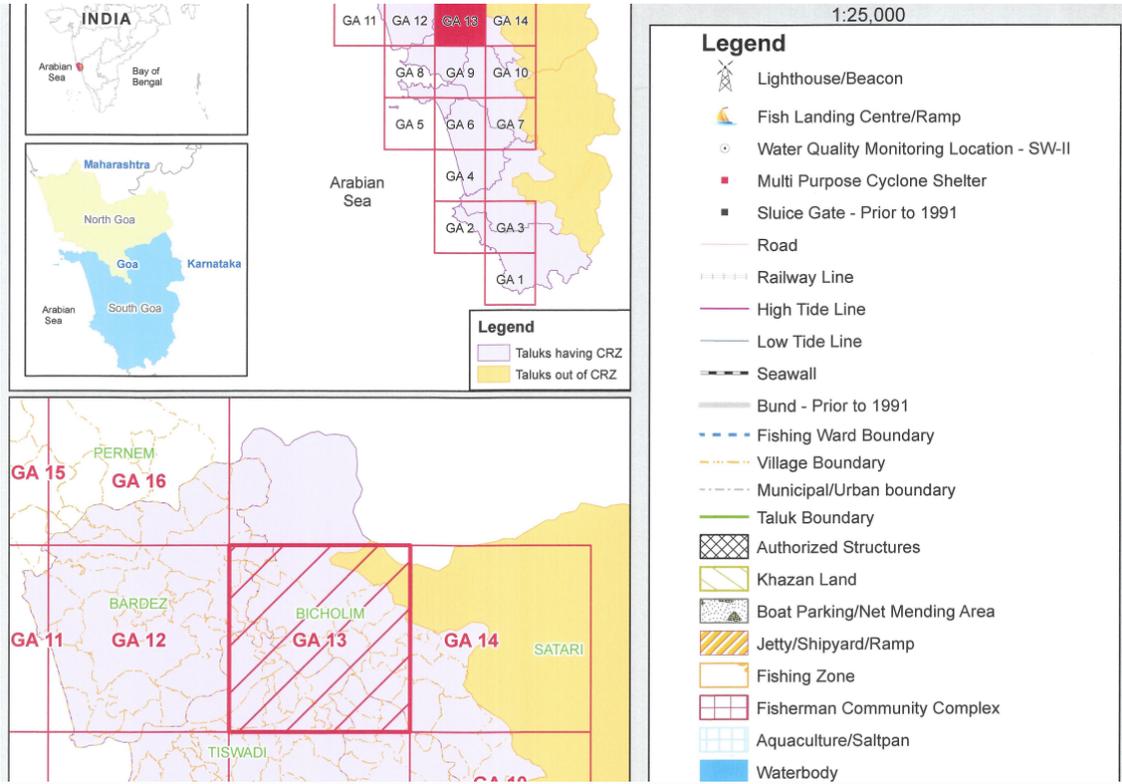
Scrutinized by	Certified by	Concurred by	Approved by
 Technical Scrutiny Committee National Centre for Sustainable Coastal Management, MoEF & CC	 DIRECTOR National Centre for Sustainable Coastal Management, MoEF & CC	 Secretary (ECoT) Government of Goa Secretary, MoEF & CC	 Secretary Ministry of Environment, Forest & Climate Change Govt. of India, New Delhi

Prepared by

National Centre for Sustainable Coastal Management
(Ministry of Environment, Forest & Climate Change)
Chennai - 600 025

Prepared for

Department of Environment and Climate Change
Government of Goa



LEGEND OF APPROVED CZMP 2011 FOR GOA, SHEET GA13

Legend

- Lighthouse/Beacon
- Fish Landing Centre/Ramp
- Water Quality Monitoring Location - SW-II
- Multi Purpose Cyclone Shelter
- Sluice Gate - Prior to 1991
- Road
- Railway Line
- High Tide Line
- Low Tide Line
- Seawall
- Bund - Prior to 1991
- Fishing Ward Boundary
- Village Boundary
- Municipal/Urban boundary
- Taluk Boundary
- Authorized Structures
- Khazan Land
- Boat Parking/Net Mending Area

KHAZAN LANDS ARE MARKED WITH GOLDEN HATCH LINES & BORDER

Annexure A-2**DRAFT KHAZAN LAND MANAGEMENT PLAN**

Prepared by the

**COMMITTEE FOR PREPARATION OF KHAZAN LAND
MANAGEMENT PLAN**

CONSTITUTED BY

GOVERNMENT OF GOA**DEPARTMENT OF ENVIRONMENT AND CLIMATE CHANGE****GOVERNMENT OF GOA**

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Executive Summary

The Government of Goa vide Order No: 2-81-2020/Dir/Env & CC/577 dated 08.09.2020 (*Annexure I*) constituted a Committee to prepare the Draft Plan entitled "Khazan Land Management Plan". The Committee studied various available past Official "Reports / Documents" and Research Papers on the subject matter. Further, the Committee also embarked on site visits and held several meetings to deliberate on issues pertinent to the current status of Khazan Lands in Goa, to come out with a broad Draft Plan for management of the same.

Khazan Lands are estuarine lands reclaimed thousands of years back and served as rice bowls of the territory of Goa, in the past. The Khazan Land Ecosystem was one of the earliest examples of co-operative movement in the world at large and particularly in India. This man-made Agricultural Ecosystem was established by the local farming community ("Gaonkars") mainly for production of Rice, Fish, Coconut, Vegetables and Salt. It was governed by a traditional and intricate but unwritten "Gaonkari" system of joint management. The erstwhile Portuguese Colonial Regime studied the 'Gaonkari' system vis-à-vis the characteristics of Khazan lands in details and came up with written Rules & Regulations to maintain and cultivate such lands jointly owned by the local communities (known as "Comunidades") entitled in Portuguese language as "Codigo de Comunidades". However, after the liberation of Goa from the Portuguese regime in December, 1961 and the consequent enactment of the Goa, Daman & Diu Agricultural Tenancy Act (1964) and Rules (1975) the tenants in the lands owned by the Comunidades (and other entities) became

the deemed owners of the individual land parcels tilled by them. The Agricultural Tenancy Act provided for the formation of Tenants' Associations to "cultivate/maintain" the Khazan Lands jointly under the overall supervision of Mamlatdars in their respective jurisdiction. However, because of the issue of deemed land ownership and the heavy pre-occupation of Mamlatdars with other routine "legal/revenue" issues the fabric of co-operative spirit engrained in erstwhile "Gaunkari" and "Comunidades" systems deteriorated rapidly.

A typical Khazan Land Ecosystem consists of Bunds which protect the agricultural (Rice) fields from tidal water ingress, Sluice Gates (manas) which allow controlled entry and exit of "tidal/fresh" water from the Khazan land, Pains (water bodies) which serve as water reservoirs cum fish rearing medium and the Rice fields. Due to the transformation brought about by the Agricultural Tenancy Act as well as the changes in socio-economic conditions, the maintenance of components of Khazan Lands (such as Bunds) and cultivation of Rice crop have become economically non-feasible since 1980s. As a result, most of the Khazan Lands are either left fallow 'and/or' are in disuse due to inundation of saline water. The only activity which is going on legally as also illegally is fishing at the Sluice Gates. Some privately owned Khazan lands are left fallow and entirely used for unauthorized pisciculture.

After examining the issue in details, the Committee recommends the following steps towards a broad Management Plan for recuperating and cultivating the existing Khazan Land Ecosystems, effectively. The Committee also recommends that a sub-plan be

made for each type of Khazan System based on site specific conditions.

- I. Conduct a detailed Agricultural Survey of Goa to determine the present status of **(i)** the extent of Khazan Lands in Goa vis-à-vis Survey Numbers and Ownership, **(ii)** Area under “Kharif” Rice Cultivation and area left fallow, **(iii)** Area under cultivation of “Rabi” rice and Vegetable cultivation, **(iv)** Area of bunds under Coconut cultivation and number of Coconut palms, **(v)** Area under Pains, **(vi)** No. of working and defunct Sluice Gates, **(vii)** Area under functional and defunct Salt Pans, **(viii)** Ownership wise length of Bunds protecting the Khazan Lands and present condition of the same, **(ix)** Number of functional Tenants’ Associations and their activities for last five years as mandated in the Act and **(x)** Present status of Sluice Gate auctions for capture fishery, and income earned by the “Associations / Government” through the same for last five years.
- II. A State Agricultural Land Use Plan shall be prepared with the express statutory provision of conserving all existing agricultural lands. This is essential not only to make Goa self sufficient in growing its entire requirement of food crops (including Fish) but also because of current food security issues.
- III. Demarcate each Khazan Land Ecosystem in four Zones:
 - (i)** Zone S-3 where salinity is high, and only local salinity resistant Rice cultivation, traditional salt farming and traditional fishery can be practiced.

- (ii) Zone S-2, on the landward of Zone S-3, where salinity is medium and salt tolerant improved Rice varieties can be cultivated.
 - (iii) Zone S-1 near the border of Khazan Land abutting the settlement area where salinity is insignificant and shallow fresh water table is present. Here local Vegetables 'and/or' *high yielding Rabi* Rice can be cultivated after the harvest of improved *Kharif* Rice.
 - (iv) Zone HS constituting highly saline and abandoned Khazan lands which are in an uncultivated state for a very long period due to dilapidated conditions of the bunds and where mangroves are regenerating due to marshy conditions created by highly eroded protective bunds.
- IV. Devise a special agricultural scheme with crop wise package of practices suitable for each of the above Zones and specific incentives including subsidized costs of hiring agricultural machinery. Adapt and develop a model Khazan Land Farm to demonstrate the profitability of the said package of practices. Organize 'extension/training' camps for Khazan Land farming community and motivate them for the purpose.
- V. Substantial financial and technological inputs should be provided for paddy cultivation with special emphasis on Khazan Land Paddy cultivation. This shall be the major responsibility of Department of Agriculture in collaboration with the ICAR Complex for Goa. This

should include appropriate mechanization to tide over labor shortage, better seed, organic fertilization, IPM, price support, better procurement system, market availability, reduction of input costs and crop insurance scheme.

- VI.** The Committee is convinced that the current provisions of the Agricultural Tenancy Act (1964) and Rules (1975) coupled with the present socio-economic situation in Goa are not conducive for sustainable revival of the Khazan Land Ecosystems in Goa. Hence, it strongly recommends that a new legislation be conceived which shall promote Cooperative 'and/or' Contract farming arrangement amongst the Tenants of the Khazan Lands who are the deemed owners of their land parcels. The pre-requisite for the success of this arrangement is the availability of latest survey data on present status of Khazan land ecosystems and special agricultural schemes mentioned at items **1. & 3.**, above. Hence, as suggested in the RALDP 1992, an Agency on lines of Planning and Management of Estuarine and Khazan Areas (APMEKA) may be constituted to study the situation and conceive the new legislation.
- VII.** In the interim period until the new legislation is in place, the present Scheme for repair of Bund and Sluice Gates shall be extended also to cover de-silting of Ponds, repair of minor Khazan bunds serving as approach pathways to individual land parcels and construction of sunken ponds to tap the ground water table and to store rain water for cultivation of Rabi vegetables in Zone **S-1** of Khazan Land. However, the benefit of this Scheme should

be extended only for those Khazan Lands where the Tenants have demonstrated their sustained interest in cultivation of "Rice / Vegetables" and production of Salt, based on the survey recommended at item **1**, above.



1. Background

The Government of Goa vide Order No: 2-81-2020/Dir/Envt & CC/577 dated 08.09.2020 (*Annexure I*) constituted a Committee to prepare the Draft Plan entitled “Khazan Land Management Plan” comprising of the following members:

1. Dr Simon D’Souza	...	Chairman
2. Dr Naraina P. S. Varde	...	Member
3. Shri Subrai Nadkarni	...	Member
4. Dr Vinod Dhargalkar	...	Member
5. Dr Fraddy D’Souza	...	Member
6. Shri Raya Shankwalker	...	Member
7. Shri Shrikant Priolkar	...	Member
8. Shri Suraj Pagui	...	Member
9. Shri Bhau Kalangutkar	...	Member
10. Shri Tolentino Furtado	...	Member
11. Shri Neville Alfonso	...	Member Convenor

The Committee held meetings on 17.09.2020, 23.09.2020, 01.10.2020, 09.10.2020, 16.10.2020, 20.10.2020, 23.10.2010, 30.10.2020, 06.11.2020, 17.11.2020, 27.11.2020, 07.12.2020, 14.07.2020 and 21.12.2020 to deliberate at length on various “facts/problems” relevant to Khazan Land Ecosystems gathered from previous official Reports, Documents and Research Literature. Further, additional inputs were sought from concerned Government Departments and some typical Khazan Land sites were visited on 30.11.2020 to see the status at loco. Based on the experience and expertise of the Committee members and other inputs as stated above, a ***Draft Khazan Land Management Plan*** has been prepared and presented in the subsequent chapters.

2. Khazan Lands

Goa, since time immemorial has been an agrarian territory where agriculture and fishery were the main means of livelihood and sustenance. The agricultural lands of Goa are classified into three major categories:

Morod lands: these are uplands either terraced on the slope of hills or bunded on the top of hills and plateaus. These are cultivated to paddy only under rain-fed conditions and are low in plant nutrient status (approx. 8,600 Ha).

Kher lands: These are best Rice lands found mostly on coastal alluvial plains. Soils are well drained, medium in texture with good moisture retention and require addition of organic matter to prevent leaching of nutrients below the depth of Rice roots. High yielding Rice varieties are cultivated on Kher lands both in Kharif and Rabi seasons depending on the availability of irrigation (approx. 17,000 Ha)

Khazan lands: These are artificially reclaimed saline alluvial soils mostly located in the low lying flood plains of Mandovi and Zuari estuaries (approx. 18,500 Ha).

- A Khazan Land Ecosystem *can be comprehensively defined as a man-made ecosystem of reclaimed estuarine wet lands, salt marshes, and mangroves where tidal influence is regulated by the construction of bunds (embankments) with sluice gates mainly for purposes of rice cultivation, traditional capture fishery or salt production*

Khazan Land Soils are fine textured and fertile. However, because of saline conditions only local salt tolerant Rice varieties are cultivated



in these soils. These estuarine lands have been reclaimed a long time ago. Being below the mean sea level, the lands are protected by a series of dykes or bunds. The outer bunds have dry lateritic rubble wall on the exterior face of the mound of earth or clay abutting on the inner side to form the main bund body.

Agriculture has been the mainstay of economy of any country over the years and India in general and Goa in particular is no different. Khazan lands were the rice bowls of the territory which yielded unique salinity tolerant varieties of Rice such as *Korgut*.

To know about the Khazan lands, one has to understand the Khazan Land Ecosystem which is versatile and man-made. The Khazan lands are reclaimed estuarine plains located below the mean sea level. The Khazan Land Ecosystem is basically composed of:

- a) Bunds
- b) Manas or Sluice Gates
- c) Internal Water Bodies or the Poins
- d) The reclaimed Agricultural Land

Bunds: Bunds are small dykes which were erected to reclaim and protect the reclaimed lands from inundation by saline water. There may be one or more bunds established to protect a particular Khazan Land Ecosystem. The river-side façade of such bunds is normally covered by a dry rubble wall of varying thickness abutting the earthen structure. The bund was normally made of locally available marine clay with a top width of 2 meters. A string of

secondary bunds are also erected either to serve as additional water level control structures 'and/or' used as pathways for approaching individual land parcels..

Sluice Gates (Manas): The bunds have one or more sluice gate/s which in local parlance is called *manas*. The *manas* opens on one side to let out water during low tides and closes during high tides to prevent the ingress of saline water in the fields. Thus the *manas* also regulate the level of water in the water bodies or *poins* inside the Khazan Land. The gate rests on side abutments made of masonry. The sluice gates are strategically located along the bund.

Poins: Poins are water bodies located in the interior of Khazan land. The drainage water from the adjoining areas beyond the Khazan boundary are also connected to the poins by well defined channels. Poins are finally connected to the 'estuary/river' through a sluice gate. Poins are meant to perform the following functions:

- i) Act as a buffer to regulate the contents of saline and fresh water
- ii) Act as water detention basins
- iii) Maintain proper water level in paddy fields
- iv) A medium to rear fish
- v) Serve as a source of water, for crop fields around the poins, during long dry periods sometimes experienced in monsoon season.

Agriculture Fields: These are agricultural soils on which crops are grown. The fields near the bunds and around the poins cater to salt tolerant crops like Korgut and further away, near the inner

periphery of the khazans land, are used to grow fresh water crops such as banana, vegetables, hybrid rice, etc.

Mangroves growing on the exterior of the Bunds act as a natural barrier for protection against the erosive forces of tides, waves and currents.

As per available records, in Goa, a total area of about 18921 Ha is occupied by Khazan lands which are protected by main bunds with a total length of about 433 km. In addition, there are a number of secondary bunds and smaller bunds which serve to control water level in individual Rice fields (parcels) and also as pathways to approach the said fields for cultivation and allied operations. The total length occupied by all types of bunds is roughly estimated at about 2000 km.

The main activities, traditionally practiced in Khazan Lands, are:

- a) Agriculture (mainly Rice, Vegetables, Coconut and Banana cultivation)
- b) Fishing
- c) Salt extraction
- d) Regular maintenance of Khazan Land components such as Bunds, Sluice Gates, *Poins*, Channels and field Pathways.

3. Khazan Land Ecosystem over the Years

Mythology states that the Sage Parshurama shot a powerful arrow which resulted in receding of Sea and exposure of the land mass constituting Goa and the Konkan region along the West Coast of India. Similarly, the Khazan Land Ecosystems in Goa are man-made lands reclaimed from the Estuaries by an intricately constructed system of Bunds meticulously engineered by the nomadic community of Gaudas who migrated from forests to the central region of Goa. Gaudas were also the first settlers to initiate and practice the shifting “kumeri” cultivation for agricultural sustainance in Goa.

The Gaudas led a communitarian way of life known as the Gaunkari system. The new settlers were Brahmins who settled in Goa before the Christian era. For a long time there was a good co-existence between Gaudas, Mith-gaudas and Gaud Brahmins. The said new migrants with superior knowledge, tools and weapons made Coastal Plains more lucrative. The knowledge from Gaud Brahmins and Mith-Gaudas aided by the communitarian way of life of Gaudas, resulted in the evolution of a new Agrarian System based on collective maintenance of bunds, sluices, channels, etc and joint cultivation of Khazan Fields. The profits were shared amongst the members. Historians say that this Gaunkari system was evolved in Goa about 3000 years back.

The Khazan lands show a superb and harmonious blend of men, marine “flora/fauna”, land, crops and water. The development of Khazan Land Ecosystem involved the use of traditional knowledge of climate, tidal cycles, geomorphology, monsoon vagaries,

sedimentation dynamics, soil properties, etc, gained by the earlier settlers through years of “trial and error” methods spanning generations.

Various historians also state that the rulers of Goa granted land on saline plains to the people, who converted them into cultivable lands with their collective Gaunkari way of life. There are also some references in literature to the effect that the Khazans enjoyed a tax free regime granted by some rulers subject to the condition that Bunds were provided and maintained to prevent the intrusion of saline water and help land “reclamation/maintenance” for Rice cultivation.

With the advent of the colonial rule, the Gaunkari system was examined and modified by the Portuguese. Portuguese rulers started the re-structuring of Gaunkari system after studying the working of the same and giving it a legal framework. The Government assigned to itself the right to intervene in the management of the Gaunkari system and the ‘Codigo de Comunidades’ or Code of Comunidades was introduced. The Code provided for the formation of a voluntary body of farmers known as “Bous” which was assigned the responsibility of management of Bunds and Sluice Gates. The “Bous” employed a “kamat” and a “palni” to look after the accounts as well as to keep records of the respective Khazan Lands. A “vigia” was also employed to keep a close watch on the condition of bunds on a day to day basis. Even a minor breach or a tiny infiltration of water through the bund was promptly reported to the “Bous” and immediate steps were taken to implement necessary repairs. The cost of repairs was recovered from the farmers whose fields were protected by the repaired bund. Comunidades raised funds by

auctioning the rights of cultivation to farmers and fishing rights in the water bodies to the fishing community. The Comunidades had to pay 'Jon' (royalty) and 'Foro' (rent) to the Church 'or/and' to the Government. It is said that Comunidades failed to exactly replicate the Gaunkari system of pre-colonial times. Some of the policies of Comunidades were good and favourable for agriculture:

- i) Allowing land use only after permission
- ii) Levy Fine on persons who bid and yet did not cultivate the land
- iii) Prohibition of transferring or sub-letting without permission
- iv) Declare the field as waste land if rent is unpaid for ten years
- v) No permission was granted to take part in auction if one has not cultivated his land a year back.

4. Present Scenario

On 19th of December 1961, Goa was liberated from the Colonial rule after 450 years and became a part of the Union of India. Farmers of Goa could now avail of various reforms such as land ceiling, land to the tiller, etc. Agricultural income was also made exempt from income tax. In 1964, the Goa, Daman & Diu Agricultural Tenancy Act, 1964 was passed which was followed by Goa Agricultural and Tenancy Rules, 1975. The said Act and Rules vested the ownership of all agricultural lands to the tenants who were cultivating the same and also conferred on them the responsibility of maintaining and managing the Bunds and Sluice Gates which protect the Khazan Land Ecosystems. The tenants became the deemed owners of the lands which were collectively owned in the erstwhile Gaunkari or Comunidade systems. Thus the Gaunkari and the Comunidade systems became redundant, predominantly in Khazan Lands because of the loss of collective and cooperative spirit.

The Agricultural Tenancy Act (1964) also provided for a stronger role of Government in the administration of Tenants' Associations through the respective Mamlatdars. The Sluice Gates are auctioned in the presence of Mamlatdar. The above changes made the Tenants' Associations rely on Government subsidies. Further, fishing became the prime activity and agriculture and salt extraction took a back stage due to strong market forces encouraging fishery.

The works of repairs of bunds and sluice gates were entrusted to the Soil Conservation Division of Directorate of Agriculture. The State Government notified the Pattern of Assistance for repair of bunds as under:

Category I: The “Tenant’s Association/Beneficiaries” willing to carry out the repairs of their khazan bunds are provided with a reimbursement of 50% of the expenditure incurred as per the procedure laid out.

Category II: The Khazan bunds requiring major repairs beyond the capability of the Tenant Association/Beneficiaries, as decided by Mamlatdar, are repaired by the Government and 50% of the cost incurred is recovered from “Tenants’ Associations/ Beneficiaries” @ 6% rate of interest in ten installments.

Category III: This pattern was implemented from 2003-04 onwards. Under this scheme, bunds are improved through more structurally sound earth, widened and their height increased wherever such improvements are found essential and notified as such by the Mamlatdar. The works are carried out by the Government and only 10% of the expenditure incurred is recovered from the beneficiaries in ten installments.

The Rules make it compulsory to constitute a Tenants’ Association of beneficiaries deriving benefits from the notified bunds. Their responsibility is collective and it is mandatory on part of the Tenants’ Associations to perform the following:

- a) Maintain a regularly updated list of tenants.
- b) Take all steps necessary for conservation, “maintenance / repairs” of the bunds.
- c) Get estimates prepared for repairs and maintenance from the Soil Conservation Division.
- d) Auction the rights of fishing in the vicinity of the sluice gates and lease out bearing coconut trees on the bunds for plucking.

e) Take immediate steps for closure of breach in the bunds and get work executed.

There are a number of provisions in the Agricultural Tenancy Act and the Rules made thereof. However, from the information available, many Tenants' Associations are not functioning as per the Act and Rules and a number of them are defunct. There are clandestine incidents whereby conditions are manipulated for unauthorized increase in production of fish solely for profit motive. In some cases it has been found that some bunds are purposely breached to increase fish catch at the peril of the loss of agricultural soils by flooding and increase in salinity. Due to this the inland fresh water sources are also threatened by salinity ingress.

To summarize, due to unfavorable economic conditions for remunerative Rice cultivation, shortage of agricultural labor, problems of ownership, high cost of bund maintenance, lack of cooperative spirit and high demand for fish, priorities have changed. The focus has shifted to auctioning of the sluice gates for fishing rights and the desire for cultivating Rice and producing Salt have taken a back seat. Consequently, the number of Khazan Land Tenants who genuinely feel the need to maintain the bunds to "protect/cultivate" their Rice fields has dwindled and here too, due to the advent of "subsidy culture" the Government finds it difficult to recover the Tenants' share of the amount spent on bund & sluice gate repairs.

Over the years, 'rapid/rampant' urbanization and allied development works have caused serious encroachment cum pollution stress on khazan lands, especially those near major "urban/tourism" centers.

Developments in and around Panaji, Margao, Calangute, Mapusa and Candolim are typical examples of such cases. The pollution of estuarine water caused by anthropogenic effluents, strewn domestic garbage, construction debris and run-off from mining areas, have adversely affected the Khazan Ecosystems. Further, the increased wave heights due to ore carrying barges have also affected the bunds and the adjoining khazans. The destruction caused by uncontrolled illegal pisciculture has added to its woes. Some Khazan lands near sub-urban settlements have been consumed due to encroachments by illegal scrap yards and erection of slums on bunds.

The change in scenario from community ownership to deemed ownership of tenants has resulted in "bad/poor" maintenance of bunds. The bunds were made of locally available estuarine clay and its structural weakness was reinforced by mixing straw (copto). The bunds are prone to attacks by burrowing marine creatures like crabs. Hence, their regular day to day maintenance is extremely important for their long term sustenance at a very low cost. This is almost impossible in the present socio-economic set up as explained above. Thus small unattended leakages over an extended period result in big breaches which require huge capital costs for repairs "and/or" reconstruction. Thus many bunds are left in a dilapidated condition and the Tenants expect Government to take up the repairs of such bunds at huge capital cost. The fields in many cases are left fallow due to various factors and emphasis is given on pisciculture as discussed earlier. However, even today in some Khazan lands Tenants who are devoted to agriculture and have no other means of income have been cultivating their fields rather satisfactorily. In



some areas even irrigation is resorted to by lathis and traditional irrigation methods for growing local vegetables in Rabi season after harvesting Kharif Rice.

The salt pans in the khazans were earlier a revenue earning activity and the salt was even exported. However, after the advent of iodized salt and other socio-economic issues the salt pans are now mostly in disuse. The salt pans are presently still active in some parts of Tiswadi, Salcete and Pernem talukas.



5. "Findings/Suggestions" of earlier Reports of "Panels and Seminars

Important findings of previous Reports submitted to the Government including the "Report of Agricultural Land Development Panel appointed by the Government" (RALDP 1992) submitted in March 1992:

- i) Several Khazan Lands in Pernem, Bardez, and Mormugao talukas were found flooded for more than 15 years (RALDP 1992). Many constantly flooded Khazan landscapes have been reverting back to their original marshy mangrove ecology.
- ii) Section 36 of the Agricultural Tenancy Act gives power to the Government to assume management of the uncultivated land and appoint a 'Comunidade/Panchayat' or a Cooperative Society for managing the land. Similarly under sub rule (3) of Rule 8 of Agricultural Tenancy Rules 1975, Mamlatdars have the power to terminate the right of fishing of a person who has taken the same by auction. Any person carrying out unlawful fishing activities could be evicted under sub rule (4) of Rule 8. However, these powers have rarely been exercised and hence the implementation of the Tenancy Act has not at all been effective (RALDP 1992).
- iii) Non-invocation of section 36 of the Tenancy Act that empowers the Government to take over the management of Khazan fields which lie uncultivated for three consecutive years, has encouraged the tenants with alternate sources of income to neglect their Khazan farms under the pretext of economic non-viability. If this section was enforced regularly, there would have been a vast area of land available for



- cultivation through Farming Cooperatives formed by local youth, with government help, for self-employment.
- iv) The RALDP 1992 reported that under the Agricultural Tenancy Rules 1975, 138 Tenants' Associations with a total membership of 19550 Tenants benefitted 183 major bunds protecting a total of 7333 Ha of Khazan Lands. Performance of these Associations from the year of their inception till 1992 was reported as 'very poor'. This is reflected from the fact that all Associations put together have held only 26 % of the minimum number of meetings (one meeting per annum for each Association) mandated under the Act. In many cases Mamlatdars could not provide any data despite reminders, confirming that a large number of Associations were defunct.
- v) Despite several attempts to get the data from the concerned Mamlatdars, RALDP 1992 could obtain some financial information only out of the 35 % of the total functional association years of 1715. The limited data indicated that the largest source of income of Tenants' Associations was the revenue earned from auction of fishing rights. The functional associations from five talukas, which reflect the overall situation, collected a total of Rs. 186.00 lakhs from auctions of fishing rights at sluice gates.
- vi) During the same period, about Rs. 184.00 lakhs were spent by the Government on repairs of notified bunds till March 1990. Accordingly the Associations were expected to pay back Rs. 139.00 lakhs to the Government. But regrettably they had paid back only Rs. 6.2 lakhs.



- vii) Membership Fees as provided in the Act have not been collected in 90 % of the Associations on annual basis for several years, neither the list of tenants is updated and maintained. Attendance is extremely poor for general body meetings of the Associations.
- viii) Government should take over Khazan lands consistently and continuously prone to flooding and in accordance to law lease these out for scientific aquaculture under BFDA's supervision.
- ix) Auctioning of the Sluice gates for fishing rights has become a major enterprise for most of the Associations and equal attention is not paid for maintenance of bunds, farms or drainage systems.

The Seminar organized by the Goa Chamber of Commerce & Industries in April 1978 made the following recommendation as regards Khazan Land and Fisheries:

Khazan Lands shall be divided in following categories:

- a) Land where the *kharif* paddy crop is cultivated regularly and where irrigation facilities are available for *Rabi* crops.
- b) Land where only one *Kharif* paddy crop is grown annually (due to lack of irrigation source) and pisciculture can be practiced in the dry season.
- c) Land which is continuously kept fallow due to sustained problems of flooding and salinity for a long time.

The second category (b) of land should be allowed for pisciculture in dry season (November-March) and the third category of lands to be used extensively for pisciculture.

The NABARD Seminar on Rural Development, 1989 advised the government to undertake a village wise enumeration of the waste land, Khazan land and marshy land plots in terms of their production potential and suitability for horticulture, forestry, brackish water fishery, paddy yield, ownership status, etc. The seminar also suggested the setting up of a Wastelands Development Corporation to utilize such lands optimally and economically with the assistance of NABARD. The substantial production potential of Khazan Lands was identified during the Seminar and it was suggested that Labour Cooperatives of Agriculturists may be formed for development of waste Khazan Lands on the basis of such existing cooperatives in Konkan for Khar Lands and Forestry. The above mentioned Corporation could get the development works executed through the said cooperatives.

In October 1990, Dr. K. Algarswami of Central Institute of Brackish Water Aquaculture , Chennai, had made certain recommendations with respect to Goa which are as under:

- (a) Conversion of the uncultivated, inundated Khazan lands for aquaculture use should be legalized.
- (b) Aquaculture should be treated on par with agriculture for all facilities.
- (c) Micro-level survey for agriculture versus aquaculture use in Khazan Lands of Goa shall be taken up.

- (d) Integrated farming (Rice:Fish), pen culture, cage culture, raft culture, etc. have great potential. These technologies should be developed to suit local conditions and their adoption encouraged.

The statements of the Agricultural Land Development Panel (1992), with respect to the plight of the Khazan Lands and existing Land Tenancy Rules (1975) are reproduced below:

“Recommendations, guidelines and good ideas are plentiful, but there seems to be lack of direction, planning, synthesis of ideas and ‘political/administrative’ vision. Perhaps, this is the reason why Khazan lands reclaimed by the ancestors of Goans with much toil and labor are gradually reverting back to their original mangrove ecology.”

“The Panel is of the opinion that the rules governing the existing Tenants’ Associations have not achieved the desired objectives during past 16 years and even if amended comprehensively may not serve any purpose in the future.”

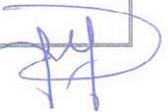
xiv) The steps recommended in the RALDP 1992, to revive and manage the deteriorating Khazan Land Ecosystems in Goa are summarized below:

- (a) Prepare a State Agricultural Policy framework
- (b) Formulate an Agricultural Land Use Plan



(c) Constitute an apex body in the name and style of "Agency for Planning and Management of Estuarine and Khazan Areas" (APMEKA) with the existing Soil Conservation Division of Department of Agriculture as its nucleus. The APMEKA will have jurisdiction over the entire Estuarine and Khazan areas of Goa and form an 'Integrated Estuarine and Khazan Area Development Plan'.

(d) Draft a new Act entitled "Goa Estuarine and Khazan Areas Protection, Conservation, Development and Management Act" based on the positive aspects of the former "Bous" system of traditional Khazan Land Management and practicable provisions of the Maharashtra Act No. XI, 1979. The proposed Act will replace the existing provisions related to Khazan land management made under the Agricultural Tenancy Act 1964. Consequently, under the new Act the overall management of the Khazan lands and estuarine areas will be entrusted to APMEKA and the responsibility of bund management & repair will that of the respective Village Panchayat.



6. Problems leading to the degradation of farming activities in Khazan Lands of Goa

The Committee perused all the earlier Reports placed before it by the Department of Environment & Climate Change, fresh material submitted by “Agriculture / Fisheries / Forest” Departments, views of Committee Members, Research Papers on Khazan Ecosystem & Mangroves of Goa and conducted field visits. Based on the result of the said deliberations coupled with the “expertise/experience” of the Members on issues concerning Khazan Lands the Committee is pleased to present its consensus on problems, present status and steps necessary for revival and sustainable management of Khazan Ecosystems of Goa, as follows.

- Due to the rapid developments of “Mining/Tourism/Real Estate/Services/Industries/Fishery” sectors, during the last four decades, employment and livelihood avenues other than Agriculture have become more lucrative.
- Shortage and high cost agricultural labor force. In particular this discourages the cultivation of a labor intensive crop such as Rice.
- Over the years, the purchase price of Rice has not increased much in comparison to the steep increase in the cost of agricultural inputs needed to cultivate the same.
- Small sizes of Rice land holdings do not allow economy of scale and this is an additional disincentive especially for cultivation of Rice.
- Some owners of agricultural fields (including Khazan fields) tend to keep their fields fallow for a number of years and

attempt to seek change in land use zoning for non-agricultural purposes due to phenomenal growth in other sectors of economy in the State. This tendency is mostly restricted to Khazan lands abutting urban areas such as Mapusa, Panaji, etc.

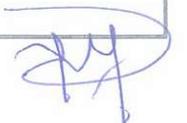
- Adverse impact of the provisions of the Goa, Daman & Diu Agricultural Land Tenancy Act (1964) and Rules (1975) (hereinafter referred to as “the Act”) on the sustainance of Khazan Land Ecosystems.

a) The agricultural lands in a Khazan Ecosystem can only be cultivated and managed as an integrated whole and not as independent individual land parcels. This is obvious because all agricultural fields which form part of the Ecosystem are dependent on proper ‘management/control’ of common entities such as major bund, internal bunds cum pathways, sluice gates, pouns and connecting water channels, all of which are the integral components of the same. The proper upkeep of such common components was easily feasible prior to the Act because all the Khazan farmers jointly owned their fields and hence maintained and tilled the same with the spirit of cooperation. More so their livelihood depended on the Rice and other Crops grown therein and all able bodied family members themselves were involved in field work. During major field operations such as planting, harvesting, etc., needing additional hands, they helped each other and finished the work without significant expenses.



- b) The Act was basically conceived for the good purpose of providing land ownership to the tiller of the same and consequently to bring more land under cultivation. However, due to the Act the Tenants tilling the Khazan fields have become deemed owners of the fields tilled by them and Comunidades which were based on the joint ownership of the Khazan fields are defunct for all practical purposes.
- c) The Act empowers the Mamlatdar, an officer who is in charge of revenue activities in his jurisdiction, to supervise the management of Khazan Lands through Agricultural Tenants' Associations constituted for the purpose. The prime duties of Tenants' Associations are to cultivate the agricultural fields and to maintain the bunds, sluice gates, pons, pathways & channels which protect and sustain the same. However, under the Act the basic principle of joint ownership and joint responsibility has changed to singular ownership and joint responsibility and (as narrated above) Rice cultivation has become "economically / logistically" non-feasible. Hence, the provisions of the Act are not implemented in the right spirit. This state of affairs has led to breaching of bunds, flooding, salinity and growth of mangroves in the agricultural fields and adversely affected all agricultural activities in the khazan lands. Mamlatdars are overburdened with routine revenue matters and have neither the time nor the "means/expertise" to solve the problems faced by the 'tenants/agriculturists'. Under the circumstances the penal provisions of the Act have never been invoked and the Mamlatdars are practically left with

the only function of supervising the auction of sluice gates for fishing.



7. Steps necessary for revival and sustainable management of Khazan Land Ecosystems

The Committee perused all the earlier Reports placed before it by the Department of Environment & Climate Change, fresh material submitted by "Agriculture / Fisheries / Forest" Departments, views of Committee Members, Research Papers on Khazan Ecosystem & Mangroves of Goa and conducted field visits and based on the same, recommends the following steps which are necessary for revival and sustainable management of Khazan Land Ecosystems:

I Detailed Survey of the Present Status of Khazan Land Ecosystems in Goa

It is observed that no statistical data is available with respect to the present status of Khazan Land Ecosystems in the State. The dearth of data is felt in land related, crop related, ownership related as well as demography related facts on the ground. An effective management plan for any entity can be conceived only when the hard facts of its present status are known. A detailed survey is recommended to determine what is listed below, which will help not only in planning, but also regulating and managing the Khazan Eco-system in an effective manner:

- a)** Extent of khazan lands (Ha), with Survey Numbers, owned by:
 - i) Comunidades
 - ii) Government
 - iii) Religious bodies
 - iv) Charity Organizations
 - v) Private Individuals



- b) Area under cultivation of *Rabi* Vegetables 'and/or' *Rabi* Rice.
- c) Area within Khazan Lands under *Kharif* Rice Cultivation and area left fallow.
- d) Area of bunds under Coconut cultivation and number of Coconut palms.
- e) Area under Poinis.
- f) No. of working and defunct Sluice Gates.
- g) Area under functional (Ha) and defunct Salt Pans (Ha).
- h) Ownership wise length of Bunds protecting the Khazan Lands and present condition of the same.
- i) Number of functional Tenants' Associations and their activities for the last five years as mandated in the Act.
- j) Present status of Sluice Gate auctions for capture fishery and income earned by the Associations and the Government (through the same) for last five years.
- k) Number of 'farmers/farm families' owning or occupying khazan lands under each of the above ownership categories.
- l) Area of Mangroves seen within Khazan Land boundaries (Ha) and all along the outer protective bunds of Khazan Ecosystems (Ha).
- m) Sluice gate wise area under saline water for traditional capture fisheries within Khazan ecosystems.
- n) Area used for traditional capture fishery if any after *Kharif* Rice harvest beyond the sluice gate capture area, carried out as per rules/acts in force.



- o) Bio-diversity of “Flora/Fauna” found within Khazan Land Ecosystems

II Demarcation of the area under each Khazan Land Ecosystem in Distinct Management Zones

It is recommended that each Khazan Land Ecosystem is ‘divided / demarcated’ in four distinct management Zones for specific “Cropping Pattern/ Activity” suited to each such Zone:

- a) Stretches where salinity is high and only local Salinity Tolerant Rice cultivation, conventional salt production and traditional fishing can be practiced. **(S-3)**
- b) Stretches on the landward side of Zone **(a)** and in vicinity of points where salinity is medium and no fresh water is available for *Rabi* cultivation. Here improved (hybrid) salt tolerant Rice varieties can be cultivated in *kharif* season. **(S-2)**
- c) Near the border of Khazan Land abutting the settlement area where salinity is insignificant and shallow fresh water table prevails after the end of monsoon rains. Here local and exotic vegetables can be cultivated in *Rabi* season after the harvest of high yielding Rice varieties grown in *Kharif* season. In some areas subject to availability of water a *Rabi* crop of rice can also be cultivated. **(S-1)**
- d) Patches of highly saline abandoned Khazan lands which are in an uncultivated state for a very long time and where

mangroves are regenerating due to marshy conditions created by highly eroded system of protective bunds. (HS)

Devise a special agricultural scheme with crop wise package of practices suitable for each of the above Zones and with specific incentives including subsidized costs of hiring agricultural machinery. Adapt and develop a model Khazan Land Farm to demonstrate the profitability of the said package of practices. Organize 'extension/training' camps for Khazan Land farming community and motivate them for the purpose.

III New cost-effective "methods/materials" for "repairs/improvement" and management of bunds:

Although the exact status of bunds will be known after the completion of the recommended survey, it is generally accepted that about 50% to 60% of Khazan land bunds are in a dilapidated condition, and threaten the very existence of the khazan lands. The bunds which are made up of locally available marine clay require constant minor maintenance works which were performed meticulously under the *Gaunkari* and colonial *Comunidades* systems.

Under the present situation there is a need to look for new technology which is environment friendly and cost effective. New approaches such as use of geo-membrane, sheet piling, coir, jute, etc, should be tried on a case to case basis and their performance examined and documented if found to be better than traditional.

While planning for a long term Khazan Land revival & improvement strategy current speculations on possible rise in sea level may be taken in to account to make a provision for appropriate increase in height of main Khazan bunds as the present free board is very small. Also the major bunds in close proximity of main estuaries should be designed for 'higher/stronger' wave surges due to the anticipated heavy aquatic traffic in near future.

It is not only necessary to devise an improved strategy for "repair/improvement" of bunds and sluice gates but a regular and effective maintenance system should be conceived which can maintain the bunds timely and efficiently without resorting to time consuming archaic and bureaucratic rituals. This will enhance the confidence of farmers to cultivate the Khazans with renewed vigor.

IV De-silting of Pains (internal water bodies) in Khazan lands:

The Pains which act as water detention basins and also serve as a buffer between saline and fresh water zones have to be kept in proper shape. Under the *Gaunkari* and *Comunidades* systems the Pains were regularly de-silted and the material was either used for strengthening nearby bunds or spread back in the agriculture fields. However, as per available information most of the Pains have not been de-silted for a long period of time and their efficiency has reduced.



The Poinis in each khazan should be evaluated and the areal extent required should be demarcated by an expert. Regular de-silting and deepening of the poinis should be taken up without endangering the bunds and the fields and the soil should be used for "improvement/repairs" of the bunds 'and/or' put back in fields. De-silting and deepening of the Poinis will increase fish rearing and harvest at the sluice gates and also increase the water retention capacity.

V Construction of sunken ponds (jal kundis) to promote irrigation:

Paddy cultivation is a *kharif* (rain-fed) activity in the khazan lands and to motivate farmers to take up *rabi* crop under irrigation, it is recommended to provide sunken ponds or jal kundis with the assistance and guidance from technical experts.

VI) Internal Bunds:

The khazan lands are vast lands and each field could be approached by small bunds. These bunds also need to be improved and trees like coconuts could be planted on them wherever feasible. Though the external bunds were provided with financial pattern of assistance, no such assistance was provided for internal bunds. A similar pattern of assistance is necessary for motivation of farmers as internal bunds are a source of income and also logistics for farming activities and also can produce coconuts.

Khazan Lands enjoy protection through the Town & Country Planning Act as well as CRZ Notification of 2011 under the Environment (Protection) Act, 1986 from all developments and activities excluding agriculture, traditional fisheries and salt production. This Committee reiterates that all cultivable agricultural lands including khazans should be protected for posterity. The Committee also recommends buffer zones (setbacks) of 20 m and 10 m from the outer boundary (on landward side) of the Khazan land in rural areas and in urban areas, respectively. This buffer zone shall be designated as No Development Zone.

VIII *Salt farming:*

Salt extraction was also a source of commercial activity in the khazan lands. Salt pans existed in many of the khazans and salt extraction is still practiced in khazans of Tiswadi, Pernem and Salcete talukas and on a smaller scale in other areas.

It is the need of the hour to give a boost to such salt extraction and give support through a subsidy scheme 'and/or' to provide logistics and marketing facilities by refining the product.

IX *Fisheries*

Based on the socio-economic considerations, fish rearing and harvesting has become a lucrative business. The fishing trade however is unregulated. Fishing activities should be restricted to the pouns and sluice gates, where agriculture is not at all feasible. The auction of sluice gates is a very sensitive issue and needs to be regulated.

Improved technologies of enhancing capture fisheries at sluice gates and promoting aquaculture where agriculture is not feasible shall be promoted through the Directorate of Fisheries under the expert guidance CMFRI and in consultation with the GCZMA.

As suggested at II (d), above, Zone HS of Khazan land should be carefully identified and demarcated jointly by a team of technical staff of Departments of "Agriculture /Fisheries /WRD / SLR/ GCZMA/ CMFRI (Goa)/ ICAR (Goa)". The so demarcated stretches of Zone HS shall be considered for appropriate use by the concerned Departments of Agriculture and Fisheries by weighing prospects and constraints as per prevalent laws in force.

X Agriculture:

The Khazans were rice bowls of the territory of Goa since time immemorial. Unique salt tolerant rice varieties such as Korgut, Asgo, Babri, Chagar, Giresal, etc., were sown in the khazans. Coconut trees were grown on the bunds which also were a source of revenue to the farmers. As per information made available, ICAR has developed a Rice variety named Goa Dhan-4 which is a cross between Korgut and Jyoti and is resistant to saline conditions. Coconut palms of Benaulim variety should be grown on Khazan bunds wherever feasible, especially on wider bunds. Other crops such as banana, vegetables, pulses and even fodder can be taken up on the periphery of the khazan lands abutting the settlements near fresh water zone **S-1**

It is necessary to provide special support to assist the Khazan farmers in overcoming the shortage of agricultural labor by giving them subsidized machinery support for planting, weeding, harvesting and threshing of Rice crop. Also, salt tolerant high yielding varieties of Rice such as Goa Dhan-4 or equivalent should be provided to Khazan farmers at special rates for revitalization of khazan lands mostly in Zone **S-2**. Traditional Rice varieties like Korgut and Asgo should be promoted in Zone **S3** of the Khazan Lands recommended for demarcation, as above.

Seeds of Vegetables and Pulses may also be provided and their cultivation promoted in khazans especially in Zone **S-1** which is salinity free and having shallow fresh water table.

The Department of Agriculture should prepare special Package of Practices for all crops recommended as above in the three Zones proposed for demarcation within Khazan Land Ecosystems. The Package of Practices should provide subsidized inputs of improved seeds, agricultural machinery and carefully designed to ensure profitability. Training modules should also be organized to motivate and train the farmers to adopt the new technology described in the said packages. Assistance may also be provided in marketing of the-agricultural products of Khazan Lands.

Motivation of farmers should be the main focus for rejuvenating agriculture in the khazan lands. Agriculture department needs to bring out a policy which gives special benefits to the farming families cultivating khazan lands. This needs to be done in conjunction with the improvement and repairs of bunds as



farmers have to be convinced that their fields are safe from saline inundation due to breaches.

It is necessary to promote farmers' cooperatives which can bring desired results. The Directorate of Agriculture should adopt at least two typical Khazan Land Ecosystems (one each) located in North and South Goa, as Integrated Technology Demonstration Plots (ITDPs), with the "consent /participation" of Tenants and in collaboration with the Directorate of Fisheries.

After repairing the Bunds and other components of the said adopted Ecosystems the Department should guide and help the 'farmers/tenants' to cultivate the same scientifically.

The ITDPs should demonstrate improved technologies of "Rice/Vegetables/Coconut" cultivation, Capture fishery, and regular "repair/maintenance" of "bunds/sluice gates" in a planned and phased manner which would instill confidence in the farmers to go for advanced technologies.

The Committee is of the opinion that such demonstration plots will showcase the methodology & economics and instill confidence in the farming community to cultivate their lands. This can be taken up in a planned and phased manner where the bunds are in pristine condition.

The Directorate of Agriculture may also examine the Community and Cooperative farming activities practiced successfully in Majorda, Fatorda, Davorlim, Chorao and St. Estevao in recent years, for promotion and replication under Khazan land conditions.

A State Agriculture Land Use Plan should be evolved with express statutory provisions of conserving all existing cultivable

agricultural lands. This is essential to make Goa self-sufficient in growing its entire requirement of food crops (including fish) and also to provide food security.

- XI** Small Farm Machinery Stations based on Public-Private Partnership should be maintained at Block levels to hire out power tillers, seed drills, harvesting machinery, weeding implements, sprayers and the like at low costs.

XII *Self sustaining model:*

Each khazan land should be planned as a self sustaining model with receipts from agriculture, pisciculture and salt farming over and above the expenditure on bund maintenance and other farming inputs. Some 'out- of- the- box' activities such as eco-tourism and nature walk trails in Khazans as a niche product should be explored for additional income.

The Committee also recommends that products from Khazan lands, especially the salt tolerant rice varieties (Korgut, Asgo, Xitto, etc), Salt and tasty Fish can be **GI-tagged** or branded to enhance the essence of the produce and fetch better prices.

The State Directorates of 'Agriculture/Fisheries/Water Resources', the ICAR Complex for Goa, CMFRI (Goa Centre) and NABARD (Goa Branch) should enter in to a time-bound collaborative Project to devise an all encompassing (Rice, Vegetables, Fishery, Coconut, Banana, and 'Bund/Sluice' maintenance) and economically viable scheme for Khazan Land Ecosystems of Goa. The scheme may also

include elements such as provision of loans, crop insurance and subsidies on “seeds/fertilizers/pesticides” and “power-tillers /planters/harvesters”. The ultimate objective of this effort should be to make crop (viz. Rice, Pulses, Vegetables, Coco-nut, Banana, etc) cultivation, traditional capture fishery and salt production in Khazan lands a remunerative and sustainable venture. A desire to preserve, conserve and operate the Khazan Land Eco-system should come from the “Farmers/Tenants” themselves, and not from external forces.

- XIII** The Khazan Land Ecosystems are unique man-made systems established around 3000 years back by our ancestors as a result of intricate ecological, technical and environmental knowledge gained by them through centuries of trial and error efforts. It has been able to sustainably supply the food needs of local communities till date, albeit to a diminishing extent due to several socio-economic realities of modern times discussed above. Therefore the Khazan Ecosystem amply qualifies as a heritage eco-system worth promoting for acceptance as an UNESCO World Heritage Site. The Committee strongly recommends that the State Government may take up the issue for consideration of the concerned authorities.
- XIV** In the interim period until the new legislation is in place, the present Scheme for repair of Bunds and Sluice Gates shall be extended also to cover de-silting of Pains, repair of minor Khazan bunds serving as approach pathways to individual land parcels and construction of sunken ponds to tap the ground water table and to store rain water for cultivation of Rabi vegetables in Zone



S-1 of Khazan Land. However, the benefit of this Scheme should be extended only for those Khazan Lands where the Tenants have demonstrated their sustained interest in cultivation of "Rice / Vegetables" and production of Salt, based on the survey recommended at item 1., above.

XV *Legislation encompassing the above points:*

The Committee endorses most of the findings recorded in the earlier RALDP 1992 and summarized in brief under **Chapter 5**, above. Importantly, the Committee is also fully convinced that under the present circumstances the provisions of Agriculture Tenancy Act will not be able to conserve, protect and regulate the Khazan Eco-system in any effective manner and there is an ardent need to look into alternate effective means of regulation which will manage, regulate and conserve the Khazan Ecosystems in an effective and sustainable manner. However, the Committee also recognizes that unless the farmers are convinced about the economic viability of cultivation of Rice, Vegetables and other crops in Khazan Lands, no amount of legislative measures will succeed in coercing them to cultivate the land.

A pre-requisite for economic feasibility of agriculture in Khazan Lands is to first conduct a detailed survey to know the present status of agriculture in Khazan Lands and to put in place the package of practices, technological improvements & schemes, as suggested above. The constitution of an apex body in the name and style of Agency for Planning and Management of Estuarine and Khazan Areas (APMEKA) as recommended in the RALDP 1992 will be essential to 'examine/study' in details the outcome of the

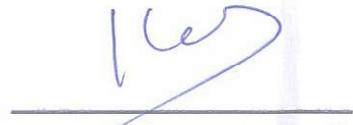


survey of the current status of khazan ecosystems, agricultural schemes and other technological interventions recommended above. Based on this study the APMEKA shall recommend an appropriate Legislation to replace the provisions of the Agricultural Tenancy Act (1964) & Rules (1975) which presently govern the management of Khazan Land Ecosystems in Goa.

Members of the Committee



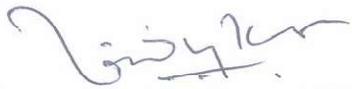
Dr Simon D'Souza
Chairman



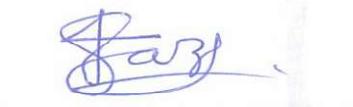
Dr Naraina P.S. Varde
Member



Subraj T. Nadkarni
Member



Dr Vinod Dhargalkar
Member



Dr Fraddry D'Souza
Member



Raya Shankhwalker
Member



Shrikant Priolkar
Member



Suraj Pagi
Member



Bhau Kalangutkar
Member



Tolentino Furtado
Member



Neville Alfonso
Member Secretary

Annexure I

Constitution of the Committee



Government of Goa
Department of Environment and Climate Change
1st Floor, Pandit Deendayal Upadhyay Bhavan,
Behind Pundalik Devasthan, Near Sanjay School,
Porvorim, Bardez Goa
 Phone Nos.: 0832-2416581 / 2416583 / 2416584
 e-mail: dir-env.goa@gov.in

No. 2-81-2020/Dir/Envt & CC/ 577 Date: 08/09/2020

ORDER

Government of Goa is pleased to constitute a Committee for Preparation of Draft Plan titled Khazan Land Management Plan comprising of the following members.

1.	Dr. Simon D'Souza Ex-Chairman, GSPCB and Scientist F, National Institute of Oceanography	- Chairman
2.	Dr. N.P.S. Varde Ex-Director, Department of Science, Technology and Environment, Govt of Goa	- Member
3.	Shri. Subrai Nadkarni, Ex-Chief Engineer, Water Resources Department	- Member
4.	Dr. Vinod Dhargalkar, Ex-Scientist, National Institute of Oceanography and Secretary of Mangrove Society of India	- Member
5.	Dr Fraddy D'Souza The Energy Research Institute (ERI) Resources	- Member
6.	Shri. Raya Shankhwalkar Hon Secretary, Heritage Network Group	- Member
7.	Shri. Shrikant. S. Priolkar Member, Khareban Tenant Association, Chodan	- Member
8.	Shri. Suraj Pagui, Akhil Goa Fisherman	- Member
9.	Shri. Bhau Kalangutkar, Chairman, Owleshwar Fisherman Society, Nerul	- Member
10.	Shri. Tolentino Fortado, Dy. Director, Department of Planning, Statistics and Evaluation	- Member
11.	Shri. Neville Alfonso, Director of Agriculture, Agriculture Department	- Member Convenor

The Committee shall:-

- a) Call for such records as necessary and analyze all the reports, documents, studies, publications as available in respect of Khazans.
- b) Carry out Field visits and consultation with stake holders
- c) Study the present laws, rules, regulations in respect of the above subject
- d) Prepare Draft Plan for the Management of Khazan Land.

The Committee shall complete the above task within 45 days from the date of publication of this Order.

The Members of the Committee shall be eligible for sitting fee of Rs 2000/- per meeting and Rs 1000/- per day for inspection.

By Order and in the name of
the Governor of Goa

J. B. Fernandes
31/7/2020
(Johnson Bedy Fernandes)

Director Environment and Climate Change

To,

1. **The Director, Government Printing Press, Panaji**..... for favor of immediate publication in the Official Gazette. The matter is checked and found fit for publication.
2. Dr. Simon D'souza, Ex-Chairman, GSPCB and Scientist F, National Institute of Oceanography.
3. Dr. N.P.S. Varde, Ex-Director, Department of Science Technology and Environment, Government of Goa.
4. Shri. Subrai Nadkarni, Ex-Chief Engineer, Water Resources Department.
5. Dr. Vinod Dhargalkar, Ex-Scientist, National Institute of Oceanography and Secretary of Mangrove Society of India.
6. Dr. Fraddy D'Souza, The Energy ^{Resources} Research Institute. (TARI)
7. Shri. Raya Shankwalkar, Hon'ble Secretary, Heritage Network Group.
8. Shri. Shrikant.S. Priolkar, Member, Khareban Tenant Association, Chodan.
9. Shri. Suraj Pagui, Akhil Goa Fisherman.
10. Shri. Bhau Kalangutkar, Chairman, Owleshwar Fisherman Society, Nerul.
11. The Director, Department of Planning, Statistics and Evaluation, Porvorim
12. The Director, Agriculture Department, Tonca Caranzalem-Goa.

Copy to:

1. OSD to Hon'ble Minister for Environment & CC, Government of Goa, Secretariat Porvorim Goa.
2. P.A to Secretary Environment & CC, Government of Goa, Secretariat, Porvorim Goa.

Annexure II

List of Khazan lands and Protective bunds

Sr No	Taluka	Village	Name of Khazan	Length of bund	Area Protectd	Notification date
				Mts	Ha	
I	Pernem	Keri	Katumban	800	15	20.11.1992
			Kazarkond	1200	25	08.03.1969
		Paliem	Mulak khazan	1100	50	23.01.1981
			Bal Khazan			23.12.1967
		Korgaon	Bal Khazan	1200	50	05.09.1975
			Bandlo, Deossa, Murdi	2000	100	05.09.1975
			Sulcho malo	1000	30	21.02.1975
			Bandpad,ovam.	1500	50	22.01.1971
		Pernem	Karo band	800	50	20.07.1982
			Torpacho band	200	3	07.10.1978
			Paraste band	450	15	
		Varkhand	Kamal Kunge	400	20	09.09.1978
		Kasarvarne m	Kasarvarne	1000	50	
		Dhargal	Fatorde xet	800	30	12.02.1978
			Chinchunchi manus	100	30	
			Dhadeshwar cantor	400	2	
			Mahakhazan	1100	30	13.11.1971

		Ponde khazan	100	35	16.07.1984
		Cole Cantor	500	60	10.02.1976
		Band at Arobo	200	5	23.12.1967
		Ganiya gaocho malo	150	20	
		Bhavnacho cando	250	12	
		Shimracho mali.	200	12	
		Randechे kand	100	5	
		Vaili cantor...	200	15	
		Pilernecho val	100	10	
		Ghanagalcho	100	28	21.02.1975
		Shirat, Kundi..	2000	28	
		Fulacho malo	500	60	13.11.1970
	Virnoda	Chinchnichi manas	150	12	25.05.1977
		Kotoba	500	40	20.06.1972
	Tuem	Mirandiche xet	600	20	
		Canturli	50	1	13.07.1976
		Khetro	400	30	
		Pudacho ank	800	40	
		Pankar madlo	1000	40	22.01.1971
		Ghotung madlo	2000	70	02.01.1971
		Shipyanche chol	800	10	
	Parsem	Parsekar	2000	100	
		Dessai madlo			
		Kalapllar Kaste	500	12	
		Khazan Gundo	800	300	

			Kalagutkar Khazan	800	12	14.12.1975
		Agarwada	Khare khazan	700	20	
			Namacho agor	800	6	
			Tata agar	800	30	
			Khare khazan	800	24	
		Chopdem	Tadche Khazan	600	8	
			Kurman bag	500	15	
			Sarchi mali	200	3	
		Morjim	Namla bhat	300	3	26.09.1973
			Katuband khind	100	10	26.07.1969
			Talpacho bandh	300	10	
		Harmal	Harmal band	1000	24	
			Total	34950	1680	
II	Bardez	Salvador-do- mundo	Mulenda Khazan	Sluice gates	300	02.04.1974
			Vithal Cantorla	600	5	02.04.1974
			St Paul Cantor	2500	40	09.01.1970
			Salem khazan	1500	30	01.07.1977
		Ecoxim	Cantor Natekar	1600	16	
			L. cantorla of Cardoz	300	15	01.04.1985
			L. Cantrola of Kamat	300	15	01.04.1985
			Bhat	100	2	12.01.1979
			St Paul Cantor	300	2	11.08.1971
		Pomburpa	Cantra	125		23.08.1976
		Olaulim	Olaulim khazan	800	8	30.04.1977

	Calvim	Calvim khazan	1200	50	06.05.1968
		Ambe cantor	600	10	03.03.1983
		Ponolem Khazan	3500	55	
	Aldona	Carona khazan	700	10	13.02.1979
		Nivim khazan	700	15	20.08.1973
		Zamuchi agurli	200	9	20.11.1985
		Gaun khazan	250	15	13.07.1976
		Goncoi khazan	400	15	23.01.1981
		Ranoi khazan	1000	42	19.01.1982
		Culak & Vaoxet	1500	70	19.01.1982
	Corjuem	Asnoi khazan	1000	20	07.02.1968
		Gouzo khazan	2000	30	31.05.1969
		Noi Khazan	800	20	10.02.1976
		Vantsuo Khazan	400	20	27.08.1983
		Hatal khazan	500	15	30.04.1977
		Camrai khazan	400	5	13.07.1986
		Canturli	200	4	20.07.1982
		Bakra khazan	400	5	13.07.1986
		Porvotacho cantor	300	3	04.02.1974
		Ranoi khazan	500	20	
		Van Khazan	400	10	23.01.1981
	Nachnola	Binal bund	200	3	23.12.1967
	Moirra/ Ucassaim	Pirzona bund	1000	25	01.07.1977
Calizor atafondem		2000	50	23.01.1981	
Marachi Canturli		400	10		

		Poin Xet	600	15	10.01.1972
		Canturiacho bund	200	25	04.05.1982
		Candlem	300	5	10.01.1972
	Mapusa	Camar khazan	1000	12	23.01.1981
		Acoi khazan	1500	295	27.06.1983
		Braganza cantor	200	2	01.12.1982
	Bastora	Dutone khazan	300	5	24.06.1985
	Guirim	Simecho band	700	30	10.10.1977
		Jacnoi band	500	20	18.04.1968
	Tivim	Danua	1000	25	
		Vatechi canturli	300	5	01.12.1982
		Bamul khazan	900	25	02.04.1985
		Dhamde Khazan	1200	25	19.07.1968
		Gavoi khazan	400	15	07.05.1979
		Vadachai	500	80	21.08.1969
		Dhakte Copra	600	10	21.10.1970
		Bodiem khazan	1500	20	30.04.1977
		Cumonem Khazan	1600	30	30.04.1977
	Sircaim	Sircaim khazan	600	20	
	Assnora	Malai khazan	500	20	20.07.1982
		Dhar khazan	1000	25	19.01.1982
	Revora	Kundai khazan	500	12	04.03.1972
	Colvale	Dokacha dat	700	25	
		Male cantor	800	20	28.05.1976
		Dade cantor	800	25	20.03.1987
		Tuanolle xet	300	12	20.03.1987

		Chicalim Khazan	1200	12	26.01.1978
		Bhati	300	10	10.02.1976
	Camurlim	Bhailo cond	700	25	20.06.1968
		Bhati of S. Fds	700	10	
		Antiongon	300	6	31.02.1974
		Ghotkal	500	10	
		Ladache Bhat	200	7	07.10.1978
		Nanerem bund	150	5	13.11.1973
		Manchesho udo	100		21.08.1969
	Oxel-siolim	Code cantor	2000	75	21.08.1969
		Mansecho band	400	30	21.08.1969
		Pesucho bund	900	15	
		Vodle khazan	700	15	28.03.1969
		Bund at oxel			
	Siolim	Tariche khazan	400	10	21.04.1971
		Cursacho vato	500	15	20.06.1968
		Manilo vato	150	10	
		Gude bund	300	15	20.06.1968
		Kerem khazan	900	20	28.12.1971
	Arpora	Cordinicho agor	200	3	13.02.1979
	Calangute	Bati	200	6	13.01.1982
		Dr Egipcio's Khazan	250	5	
		Anabaichocant or	150	5	28.05.1976
	Candolim	Buta khazan	2500	80	28.03.1969
		Malkhazan	300	10	24.08.1977
	Nerul	Confriancho	600	20	19.08.1982

			agor			
			Adso xet	600	5	25.05.1977
			Apte khazan	600	16	21.02.1975
			Bund at Nerul	2000	50	14.10.1969
		Verem	Ambe cantor	700	30	
		Pilerne	Navoti khazan	100	30	23.01.1981
			Sapal	400	11	23.01.1981
			Cantor	100	5	24.08.1977
			Mahakhazan	1500	100	24.08.1977
			Panachi canturli	500	10	
			Khazan of Dumig	100	5	
			Cantor of o deago	150	10	10.02.1976
				Total	68825	2458
III	Bicholim	Sirgao	Kharat khazan	1800	60	03.01.1973
			Sawat khazan	1300	40	03.01.1973
			Cantor	100	2	27.07.1978
		Mulgao	Karat & Sawat	300	15	11.05.1973
		Mayem	Pongarpat	2000	70	02.04.1974
			Mulak khazan	1700	70	18.04.1974
			Evacui bund	150	30	18.04.1968
			Cantorla of Hoble	400	5	
			Barcoi	1500	40	16.07.1970
			Vaiguinim	1100	30	01.07.1970
			Tikhakazan	1600	50	09.07.1976
		Narao	Tikhakhazan	1200	20	16.11.1974
			Donxi	700	80	04.07.1977

		Cantorla (E)	600	4	23.01.1981
		Hindale	700	20	23.01.1981
		Digui of Roghuvir	900	12	22.05.1971
		Tonte of Victor	700	3	28.03.1968
		Tonte of Malbara Sardessai	400	5	26.10.1967
		Sancola khazan	50	5	23.01.1981
	Pilgao	Dokecho, mundi	400	20	13.01.1975
		Sluicegate(Sa)	500	40	
		Amiye khazan	1500	40	15.10.1967
		Bhailo cantor	300	2	25.10.1967
		Coswan	1000	30	27.02.1970
		Coswan bailipad	600	10	27.02.1970
		Cudcho cantor	300	8	19.01.1982
	Carapur	Virnole	1000	25	03.01.1990
		Cudcho cantor	800	4	16.11.1974
		Balkum xet	1800	35	
		Cudap	2500	135	25.11.1997
		Didicho cantor	300	8	19.01.1982
	Viridi	Moli	200	10	21.08.1979
		Dhabe khazan	700	22	23.01.1981
		Canturli of kamat	300	7	
		Canturli of Davaskar	200	3	21.08.1979
	Viridi	Bage cantor	500	6	09.09.1978

		Vithe cantor	600	4	23.01.1981
		Muli	200	10	19.10.1971
		Dolcho cantor	800	6	01.10.1992
		Vaghacho Goindo	400	2	09.09.1978
		Khare khazan	1500	35	23.01.1981
		Talcho cantor	500	10	10.12.1968
		Golcho cantor	800	30	19.10.1971
	Cudnem	Bhovado	600	10	23.01.1981
		Colombo, Anko	500	3	22.01.1971
		Barazanachi manas	300	30	01.12.1981
		Mop khazan	750	10	04.03.1972
	Navelim	Sanstacho ank	650	50	01.07.1977
		Dhakul main	300	5	08.12.1971
		Khazan of Borkar	1200	50	
	Surla, Pale...	Maxe bhat	200	2	06.06.1978
		Taricho ado	300	2	28.01.1971
		Bamnem xet	200	2	06.06.1978
		Hudo, Aco cantor	200	2	28.01.1971
	Amona	Cantor of Gawas	700	20	
		Mae cantor	600	6	
		Agapuri cantor	700	8	09.04.1975
		Rumad palipad	400	6	
		Udatto & Vaotoli	800	300	
		Talyache	500	20	19.10.1967

			khavate			
			Cantorla of Suresh Porob	500	6	
			Cantor of Vithal Porob	300	6	
			Cantor	15500	60	
			Bhaile xet	1800	40	09.02.1978
			Boka cantor	700	10	
			Uniyem cantor	600	10	19.04.1975
			Bhaile xetach pat	300	10	10.02.1976
			Thorli Devkhadi	900	25	16.11.1974
			Vagacho goindo	400	2	16.01.1969
			Total	64800	1758	
IV	Tiswadi	Merces	Murda, Cole..	1500	167	11.12.1972
			Morombi-o-grand	150	100	
			Cantor santanach	1000	100	
			Sinaricho bund	500	25	
			Ranodi bund	400	20	
		Calapur	Pate cantor	1800	100	11.12.1972
			Nevgi band	1000	20	
			Fulacho Pauni	1000	35	
			Zium, kotiem	1000	40	04.03.1972
			Padd, polos, naya	250	30	10.02.1976
		Siridao,Cudc	Bund of	300	5	21.11.1984

		a	Mascarinhas			
			Wodval	600	10	
			Khazan near church	1000	20	
			Aframento curca	500	50	09.12.1968
			Dempo bund	500	20	31.01.1989
		Santana	Santana khazan	1500	80	20.06.1968
			Cantor	680	15	14.03.1989
			Danaitacho	500	5	
			Cauntecho cantor	600	6	
		Gaolim moula	Gaolim khazan	800	30	
			Bhati	400	10	
			Naye khazan	800	12	09.09.1978
			Ordacho Khazan	350	10	09.09.1978
			Cantoria	500	24	14.01.1982
			Motto band	700	20	21.08.1979
		Goa Velha	Birmal, Amle..	250	10	10.10.1977
			Erco band	400	10	04.12.1984
		Agassaim	Tilkhazan	630	20	25.10.1967
			Olijua khazan	200	10	03.03.1983
		Neura	Pilo	2000	80	25.10.1967
			Silpa	1900	100	25.10.1967
			Nerda	1900	75	25.10.1967
			Amta	2000	80	25.10.1967
			Cantra	800	65	25.10.1967
			Neura khazan	800		06.05.1991
			Cantoria	200	15	23.08.1976

		Damda khazan	3200	150	21.02.1975
		Tolap	200	2	
		Velfanim Khazan	200	70	05.09.1975
	Dongri, Mandur	Mandur khazan	30	20	
		Dongri xet	300	6	02.04.1974
	Azossim	Azossim Khazan	1300	200	28.05.1978
		Internal bund	150		30.04.1977
		Porne offol	500	30	21.02.1975
	Carambolim	Kholi ofla donzuo	30	100	24.08.1977
		Ofla Donzua	3780	400	08.07.1968
		Motto	1000	10	23.01.1981
		Cauzua	1500	70	
		Naganzo khedo	2500	200	
		Sawat khazan	500	100	
		Cantor	430	4	27.12.1988
		Kulwal cantor	600	50	13.07.1976
		Dhado	5000	200	19.10.1967
		Kulwal int bund	600	50	13.07.1976
	Corlim	Corlim khazan	1800	250	
		Dhavant	1500	40	
		Unico, lenco ..	500	30	20.11.1970
		Mayem sant	500	10	19.10.1971
	Cumbarjua	Imte	500	20	07.10.1972
		Thirkhazan	500	30	07.10.1972
		Cundaikar cantor	1000	20	14.12.1969

		Chune cantor	1000	40	21.02.1975
		Vantsuo	500	20	14.12.1969
		Kegdi Aco	300	7	30.01.1985
		Panchlai	500	20	
	Dauji-Ela	Dauji cantor	2500	70	
		Marques cantor	100	4	02.04.1974
		Cotopo, sepal,..	700	70	07.10.1976
	St. Pedro	Aframento	25	1	16.11.1974
	Gaundalim	Bor Khazan	300	5	28.05.1978
		Tivo cantor	700	20	06.05.1968
		Durga poi, vaglo	500	10	06.05.1968
	Capao	Vanxi bund	2000	50	
	St Estevem	Vai Khazan	2000	80	21.04.1971
		Marques cantor	200	5	10.10.1977
		Vantsuo	1800	100	21.10.1967
		Garekarnicho ban	400	7	
		Chune cantor	700	30	
		Panchlai	500	20	
		Palni	1500	60	13.07.1976
		Acaro band	1200	10	28.03.1969
		Tagre valai	1500	125	07.02.1968
		Madapoi	300	50	07.02.1968
		Causuo cantor	2500	120	07.02.1968
		Babal	700	6	10.02.1976
		Sapal of silva	2000	25	05.09.1975
	Navelim, Divar	Goltim	3000	250	09.09.1978
		Antucho bund	700		04.05.1982
		Zuamvoilo	2500	180	11.09.1970

		bund ..			
		Boro, Garximo..	2900	200	11.09.1970
		Amboi	1800	100	24.08.1977
		Sapal cantor	500	30	25.01.1969
		Noronnacho,...	200	5	06.05.1968
		Narao khazan	1800	75	05.09.1975
	Navelim, Divar	Sancorla, kakulo	200	13	02.03.1976
		Cantoria	400	5	
		Noi Inzonho, Tor	1700	50	13.11.1976
		Cono of Menezes	2400	30	19.10.1967
	Chorao	Sorel, Tivo cantor	8000	300	16.03.1970
	Chorao	Kerem	600	25	
		Bhobecho cantor	600	15	
		Sapal budule	900	30	
		Soryakaracho bund	500	30	
		Dhotracho	400	8	
		Budule	800	10	
		Karadi khazan	1400	100	
		Jambiacho	200		
		Cantor	2000	100	
		Candlem	2500	100	
		Cantoria Carepa..	300	20	05.09.1975
		Sapal of Jaganat	250	5	04.02.1974

			Nagvekar			
			Canturli of Chopdekar	300	10	07.02.1968
			Bandoni	3000	300	07.02.1976
			Loyola Nunes Khazan	600	25	
			Pongaracho	350	7	
			Cantoria Gonsalves	1000	15	
			Dubane	500	10	21.02.1975
			Van Khazan	100	20	13.07.1976
			Sorel, Voron,...	1500	200	16.03.1970
			Total	12465 5	6704	
V	Ponda	Banastarim	Powda cantor	700	45	
			Bailo cantor	500	5	25.05.1977
			Cosme betal bhat	700	10	27.06.1968
			Duklo cantor	100	2	30.04.1977
		Marcela	Cundaikar cantor	600	15	
			Bund at marcel	1000	25	
			Madapai	600	25	
			Coste khazan	1000	30	16.11.1974
			Coste bhat	600	5	16.11.1974
			Vishar poile	300	4	23.01.1981
		Khandola	Ambige khazan	600	5	
			Sapal & Cantorla	600	20	28.05.1976
			Cupel khazan	400	10	11.09.1970

		Adorna at Khandl	800	40	11.08.1971
		Adorna, Breach m	800	20	11.08.1971
	Betki	Maramon, monteman	1500	70	05.06.1970
		Vhoddi, Cuso	500	30	13.02.1979
	Savai Verem	Rampurush band	600	30	05.06.1970
	Vaghurme	Kharo bandh	200	40	01.07.1977
		Betul cultem	100	8	27.08.1984
		Zuven	200	10	01.07.1977
	Panchwadi	Visor, bandavizor.	2000	40	10.01.1972
		Amlai khazan	800	50	07.05.1979
		Altecho	300	4	06.06.1978
	Shiroda	Manke cantor	1000	16	14.12.1973
		Costi vadoli	700	20	16.11.1974
		Ovli cantor	200	5	16.11.1974
		Bi cantor	600	10	20.12.1967
		Barbot cantor	200	3	28.03.1969
		Socrem khazan	1100	40	06.05.1968
		Shirdotte	1500	60	02.04.1974
		Bhati of Laxmiknt	800	40	
		Kurmane Khazan	1700	75	04.02.1974
		Raicondo	450	4	06.01.1993
		Vincent jua cantr	600	15	

		Apkare, Sonali..	600	15	19.01.1982
		Lliat & Cono ..	650	106	11.09.1970
		Cantor of Philip	500	10	
		Dabolim cantor	300	5	07.05.1979
	Borim	Bet, Bhitarlo...	700	10	01.07.1977
		Borkhazan	600	15	19.08.1969
		Babje cantor	1500	50	20.06.1968
		Devti, Figred..	1550	75	17.01.1973
	Vaddi-	Khazan talle..	500	50	05.06.1970
	Talaulim	Naga,Bhutnath	450	50	05.06.1970
		Khazan Kutumban	1200	40	17.01.1973
	Durbhat-	Khalil cantor	350	6	13.01.1989
	Agapr	Narsinhprasad	1800	65	26.07.1969
		Babal Narsule	500	14	16.03.1970
		Mahadev narsule	500	20	04.02.1974
	Bandora	Benal, Und..	1500	12	
		Naite at undir	100	3	13.11.1976
		Kharewada bund	200	10	31.12.1974
		Petcantor	300	30	
		Deva khazan	700	10	
	Marcaim	Devli bund	200	40	31.12.1974
		Parampai	1200	30	28.03.1969
		Rampoi, Madacm	400	10	16.11.1974
		Nivel cantor	800	18	21.10.1967
		Bar, vage cantor	2000	120	21.10.1967

			Ambre khazan	900	40	21.10.1967
			Adon, Vazrea ...	200	10	15.04.1987
		Cundaim	Sasurpoin	800	50	25.01.1969
			Chikalpoin	1600	75	25.01.1969
			Juven cantor	1500	31	14.12.1973
			Naila cantor	740	25	11.12.1972
			Bhoma	Dhado Nainado	3500	150
			Bund of Kenkare	200	10	21.10.1967
			Jafaralem	60	10	
			Mushifond, Usale	500	10	27.08.1983
			Total	53650	2056	
VI	Sacette	Lotulim	Goltem khazan	600	7	
			Sakal fondi	500	10	11.08.1971
			Copre cantor	1000	10	11.08.1971
			Deorbhat..	2000	70	11.08.1971
			Cantor of Pilomen	400	5	11.08.1971
			Vatlaim	800	10	11.08.1971
		Lotulim	Combo cantor	300	5	11.08.1971
			Catbhat cantor	2000	10	11.08.1971
			Bebdo cantor	300	50	11.08.1971
			Nocasana	2500	60	11.08.1971
			Menino cantor	800	10	11.08.1971
			Sapal cantor	500	10	11.08.1971
		Ambora	Costi vadoli	1800	60	
			Bamna bhat	700	50	
		Raia	Novor khazan	1000	75	
			Sapal	75	30	

		Dhakte ord,	1600	80	
		Voldem ord..	2000	100	
		Odlim khazan	700	30	
		Banda poi	500	50	
	Rachol	Cantor de Sailim	500	15	
		Shial cantor	900	20	
		Khod khazan	600	12	
		Fosso cantor	35	25	
		Canator de Digaim	150	5	
		Digaim khazan	1000	75	
	Curtorim	Solbem	2000	100	
		Bund de Estibero	300	10	
		Cottombo	700	100	
		Galche cantor	200	7	
		Porne khazan	900	32	
		Novo cantor	300	25	
		Bhati khazan	400	15	
		Morondi cantor	1200	20	
	Macazana	Varzea khazan	1000	20	
		Batim khazan	1000	10	
		Bhate khazan	700	20	
		Voldem khazan	3200	250	
		Saibinicho cantor	1000	15	
		Jule Khazan	1200	40	
		Surla khazan	300	15	
	Chandor	Paklo bund	700	40	

		Add Xet	900	35	
		Bir Khazan	500	40	
		Munde Add	300	10	
		Kodvoi vaddi	300	19	
		Pasco bund	700	10	
		Bass, Babjer xet	2500	150	
		Tollem bund	300	25	
	Girdolim	Maria poim	1200	70	
	Betalbatim	Khare khazan	30	50	28.05.1976
		Viliad	500	20	
		Dalalacho bund	300	20	
	Colva	Khazan norte ,sul	500	40	
	Carmona	Vanca	500	20	13.01.1975
		Marinha calata	300	150	26.09.1973
		Bokapoicho canto	1200	50	19.10.1967
		Dongafodi	1000	40	24.07.1971
		Code Reprosa..	1200	150	20.04.1970
		Aframento costa	1300	10	15.06.1989
		Dugale khazan	1000	125	05.09.1975
		Comfre agor	510	3	04.02.1974
		Machabachetal e	500	20	11.12.1972
		Cavelossim	Isle at Zunga	1000	6
	Deu Patre Orem		400	40	05.08.1974
	Sequetim	Band o Peda	250	10	06.01.1993
	Chichinim	Ortem at	500	3	28.02.1989

			Deusua			
			Deusua	500	10	24.07.1989
			Donacholecho bund	1500	80	
			Ker Khazan	2000	150	
			Durga bund	2500	100	
			Uskini bund	100	50	
			Naiquinicho agor	1000	150	10.10.1977
			Bandao Pedda	500	15	23.08.1976
		Assolna	Ambole, Satole	500	20	07.05.1979
			Doncon	900	40	
			Bund at assolna	700	60	
			Bund at Monteiro	300	50	
		Velim	Bund at Velim	500	100	
			Total	67050	3544	
VII	Quepem	Xelvona	Kapad,Dig,..	400	70	
			Muxe khand adya bandh	300	38	25.02.1971
		Cotombi	Cotombi bandh	500	40	25.02.1971
			Adi bund	150	28	19.04.1978
		Curcholem	Khandiwada band	150	20	27.12.1988
		Cacora	Kolmorod, Chikmuli	1250	60	19.10.1989
			Total	2750	256	
VIII	Mormago	Chicalim	Mixibandh	1400	4	20.06.1972
			Sapal	300	5	23.12.1967
		Sancoale	Bund at	2000	25	

			Sancoale			
		Cortalim	Sapal of de silva	500	9	07.05.1979
			Batem cantor	600	20	
			Dando, Tolcantor	700	15	04.03.1972
			Gaudi khazan	1000	15	
		Quellossim	Bund of Rodrigue	2000	40	
			Gudi mudi khaza	1000	15	
			Maste khzan	1000	12	
			Zeo band	2500	75	
			Total	13000	235	
IX	Canacon	Khol	Salerichi Al	150	18	
		Agonda	Dandomorod...	500	12	
		Palolem	Partagalmat band	300	20	
		Kindalebag	Donim, Tonda...	300	12	
		Poiguinim	Caria Gosne ..	200	15	
			Chandrapad	200	10	
			Cole	150	18	
		Sadolshem	Taga band	200	10	
		Nuven	Band at Nuven	150	9	
		Loliem	Gorjin jirayat	200	10	
			Vani band	100	80	
			Ben Khazan	200	16	
			Total	2650	230	

Annexure III

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**BEFORE THE NATIONAL GREEN TRIBUNAL
SITTING AT PUNE**

Application No. 10 of 2023

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

Federation of Rainbow)
Warriors and Anr) ...Applicants

Versus

Union of India and Ors)..Respondents

Affidavit in Rejoinder

ON THIS DATED 04TH NOVEMBER 2025

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