

**F.No. 10-66/2016-IA-III**  
**Government of India**  
**Ministry of Environment, Forest & Climate Change**  
**(I.A. Division)**

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Dated: 29<sup>th</sup> November, 2016

To,

**Cdr. P.K. Srivastava**  
**Hydrographic Chief,**  
**M/s Inland Waterway Authority of India (IWAI)**  
**A – 13, Sector – 1, Noida,**  
**Uttar Pradesh - 201301**

E-mail: [hc.iwai@nic.in](mailto:hc.iwai@nic.in) ; Fax: 0120-2544009;

**Subject : Development of Stretch of Mandovi River (NW-68), Zuari River(NW-111) and Cumberjua Canal (NW-27) of National Waterway in the State of Goa by M/s Inland Waterway Authority of India –TOR reg.**

**Ref.: Your online proposal no. IA/GA/MIS/58823/2016 dated 6<sup>th</sup> September, 2016.**

Sir,

Kindly refer your online proposal no IA/AP/MIS/58669/2016 dated 30<sup>th</sup> August, 2016 alongwith project documents including Form-I, Pre-feasibility Report and draft 'Terms of Reference' as per the EIA Notification, 2006. It is noted that proposal is to develop stretch of Mandovi River (NW-68), Zuari River(NW-111) and Cumberjua Canal (NW-27) of National Waterway in the State of Goa by M/s Inland Waterway Authority of India. Stretch of 41 km, 55km and 17 km have been selected at Mandovi River ( NW-68), Zuari River ( NW-111) and Cumberjua Canal respectively for National Waterways. Total dredged quantity will be about 3 Mm<sup>3</sup>. Dredging in these stretches to be disposed off beyond the disposal area of Mormugao Port Trust ( Lat 73<sup>o</sup>44' to 73<sup>o</sup>45' East and Long 15<sup>o</sup>25 to 15<sup>o</sup>26.2' North) towards seaside. It is reported that Dr. Salim Ali Bird sanctuary falls on the right bank of the Mandovi River. The area adjacent to waterway have patches of mangroves, Agriculture land, Minerals *etc.* Cost of project is Rs. 200 Crores.

2. Draft Terms of Reference (TOR) have been discussed and finalized by the Expert Appraisal Committee (Infrastructure -2) in its 10<sup>th</sup> meeting held on 24<sup>th</sup> – 25<sup>th</sup> October, 2016 for preparation of EIA/EMP report. The Committee prescribed the following TOR in addition to Standard TOR provided at Annexure-1 for preparation of EIA-EMP report :

- i. Importance and benefits of the project.
- ii. Submit a copy of layout superimposed on the HTL/LTL map demarcated by an authorized agency on 1:4000 scale.
- iii. Recommendation of the SCZMA.
- iv. PP shall submit map dully authenticated by Chief wildlife warden showing Dr. Salim Ali Bird sanctuary features vis-à-vis project location.
- v. Copy of application submitted for clearance from NBWL.
- vi. Impact of proposed terminals be included in the EIA study.

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- vii. A detailed biodiversity impact assessment report and management plan shall be drawn up through the NIOS or any other Institute of repute on marine, brackish water and fresh water ecology and biodiversity. The report shall study the impact on the rivers, the estuary and the sea and include the intertidal bio topes, corals and coral communities, molluscs, sea grasses, sea weeds, Subtidal habitats, fishes, other marine and aquatic micro, macro and mega flora and fauna including benthos, plankton, turtles, birds etc. as also the productivity. The data collection and impact assessment shall be as per standard survey methods.
- viii. Study the impact of dredging in the river.
- ix. Action plan for disposal of dredged soil / rocks.
- x. Dispersion modelling for the dumping of the dredge materials shall be carried out. The study report shall be incorporated.
- xi. Study the Diurnal variations also and follow norms for ambient air monitoring as prescribed by the CPCB/MoEF.
- xii. Locate the base line monitoring stations on the seaward side also.
- xiii. A detailed report on the fish catches in the Mandovi River, Zuari River and Cumberjua Canal shall be undertaken along with the probable impacts of the activity and the management plan
- xiv. Disaster Management Plan.
- xv. Status of court case pending against the project.
- xvi. A tabular chart with index for point wise compliance of above TORs.
- xvii. Public hearing to be conducted and issues raised and commitments made by the project proponent on the same should be included in EIA/EMP Report in the form of tabular chart with financial budget for complying with the commitments made.

3. The proposed project falls under item 7(e) of schedule of EIA Notification, 2006. These 'TORs' should be considered for development of Stretch of Mandovi River (NW-68), Zuari River(NW-111) and Cumberjua Canal (NW-27) of National Waterway in the State of Goa by M/s Inland Waterway Authority of India in addition to all the relevant information as per the 'General Structure of EIA' given in Appendix III and IIIA in the EIA Notification, 2006. The EIA/EMP as per TORs should be submitted to the Chairman, State Pollution Control Board, (SPCB) for public consultation. The SPCB shall conduct the public hearing/public consultation as per the provisions of EIA notification, 2006.

4. You are requested to kindly submit the final EIA/EMP prepared as per TORs and incorporating all the issues raised during Public Hearing / Public Consultation to the Ministry for considering the proposal for environmental clearance *within 3 years as per the MoEF O.M. No. J-11013/41/2006-IA.II (I) dated 8<sup>th</sup> October, 2014.*

5. The consultants involved in the preparation of EIA/EMP report after accreditation with Quality Council of India / National Accreditation Board of Education and Training (QCI/NABET) would need to include a certificate in this regard in the EIA/EMP reports prepared by them and data provided by other Organization(s)/Laboratories including their status of approvals etc.

  
 (A.N. Singh)  
 Scientist 'D'

**Copy to:**

- 1) Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, Koramangala II Block, Bangalore – 560034.
- 2) The Chairman, Goa State Pollution Control Board, Dempo Towers, 1st Floor, EDC Plaza, Patto, Panaji, Goa - 403001.

- xviii. Details of rainwater harvesting and utilization of rain water.
- xix. Examine details of Solid waste generation treatment and its disposal.
- xx. Details of desalination plant and the study for outfall and intake.
- xxi. Examine baseline environmental quality along with projected incremental load due to the proposed project/activities.
- xxii. The air quality monitoring should be carried out according to the notification issued on 16<sup>th</sup> November, 2009.
- xxiii. Examine separately the details for construction and operation phases both for Environmental Management Plan and Environmental Monitoring Plan with cost and parameters.
- xxiv. Submit details of a comprehensive Risk Assessment and Disaster Management Plan including emergency evacuation during natural and man-made disasters
- xxv. Submit details of the trees to be cut including their species and whether it also involves any protected or endangered species. Measures taken to reduce the number of the trees to be removed should be explained in detail. Submit the details of compensatory plantation. Explore the possibilities of relocating the existing trees.
- xxvi. Examine the details of afforestation measures indicating land and financial outlay. Landscape plan, green belts and open spaces may be described. A thick green belt should be planned all around the nearest settlement to mitigate noise and vibrations. The identification of species/ plants should be made based on the botanical studies.
- xxvii. A detailed draft EIA/EMP report should be prepared in accordance with the above additional TOR and should be submitted to the Ministry in accordance with the Notification.
- xxviii. Any further clarification on carrying out the above studies including anticipated impacts due to the project and mitigative measure, project proponent can refer to the model ToR available on Ministry website "<http://moef.nic.in/Manual/Port and harbour>".

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**STANDARD TERMS OF REFERENCE FOR CONDUCTING ENVIRONMENT IMPACT ASSESSMENT STUDY FOR PORT, HARBOURS INFORMATION TO BE INCLUDED IN EIA/EMP REPORT**

- i. Reasons for selecting the site with details of alternate sites examined/rejected/selected on merit with comparative statement and reason/basis for selection. The examination should justify site suitability in terms of environmental angle, resources sustainability associated with selected site as compared to rejected sites. The analysis should include parameters considered along with weightage criteria for short-listing selected site.
- ii. Details of the land use break-up for the proposed project. Details of land use around 10 km radius of the project site. Examine and submit detail of land use around 10 km radius of the project site and map of the project area and 10 km area from boundary of the proposed/existing project area, delineating project areas notified under the wild life (Protection) Act, 1972/critically polluted areas as identified by the CPCB from time to time/notified eco-sensitive areas/interstate boundaries and international boundaries. Analysis should be made based on latest satellite imagery for land use with raw images.
- iii. Submit the present land use and permission required for any conversion such as forest, agriculture etc. land acquisition status, rehabilitation of communities/ villages and present status of such activities.
- iv. Examine and submit the water bodies including the seasonal ones within the corridor of impacts along with their status, volumetric capacity, quality likely impacts on them due to the project.
- v. Submit a copy of the contour plan with slopes, drainage pattern of the site and surrounding area
- vi. Submit the details of terrain, level with respect to MSL, filling required, source of filling materials and transportation details etc.
- vii. Examine road/rail connectivity to the project site and impact on the existing traffic network due to the proposed project/activities. A detailed traffic and transportation study should be made for existing and projected passenger and cargo traffic.
- viii. Submit details regarding R&R involved in the project
- ix. Submit a copy of layout superimposed on the HTL/LTL map demarcated by an authorized agency on 1:4000 scale along with the recommendation of the SCZMA.
- x. Submit the status of shore line change at the project site
- xi. Details of the layout plan including details of channel, breakwaters, dredging, disposal and reclamation.
- xii. Details of handling of each cargo, storage, transport along with spillage control, dust preventive measures.
- xiii. Submit the details of fishing activity and likely impacts on the fishing activity due to the project.
- xiv. Details of oil spill contingency plan.
- xv. Details of bathymetry study.
- xvi. Details of ship tranquillity study.
- xvii. Examine the details of water requirement, impact on competitive user, treatment details, use of treated waste water. Prepare a water balance chart.