

## FORM-I

### (I) Basic Information

Name of the Project:	<b>Modernization and Expansion of Port Infrastructure for Fishing, Coastal, &amp; Multipurpose Cargo Berth and Liquid / General Cargo:</b> <b>a)</b> Construction of Fishing Jetty. <b>b)</b> Development of Berth for Liquid bulk (Petroleum products including LPG). <b>c)</b> Development of Berth for Coastal and Multipurpose Cargo Berth. <b>d)</b> Development of Passenger Jetty, Launch Jetty, and Port Craft Jetty. <b>e)</b> Deepening of Berths 10 & 11 from -13.10 to -15.0m. <b>f)</b> Deepening of Breakwater Berth from -9.5 to -11.5m
Project Sector:	Port Sector
Location of the Project	Vasco Bay, Mormugao, South Goa.
State of Project	Proposed expansion of Mormugao Port
Size of the Project	<b>a)</b> One fishing jetty of length 520M to accommodate 370 fishing trawlers of different types. Including sheds and other ancilliary structures and reclamation area total of 13340.00 sq. m. <b>b)</b> One berth of length 300m to cater to vessels of upto 85000 DWT for handling POL berth including dredging. <b>c)</b> berth of length 250M to accommodate Coastal and 350 Mtr for Multipurpose Cargo Berth. <b>d)</b> A Passenger jetty of size 98m X 8m, Launch jetty of size 100m X 8m and Port Craft Jetty of size 48m x 8 m. (All are proposed RCC structures) reclamation work of 5000m <sup>2</sup> , Capital Dredging of 10000 m <sup>3</sup> . <b>e)</b> Deepening of Berths 10 & 11 from -13.10m to -15.0m with dredged volume of approx. 60,000, strengthening of berth by extending the berth towards the sea by 26m. M <sup>3</sup> and reclamation work of 15000m <sup>2</sup> <b>f)</b> Deepening of Breakwater Berth from -9.5m to -11.5m with dredged volume of approx. 25,000 M <sup>3</sup> .
Expected cost of the project:	Total Project cost: <b>Rs.500.00 Crores.</b> <b>a)</b> Rs.104.00 Crores <b>b)</b> Rs.116.38 Crores <b>c)</b> Rs.204.00 Crores <b>d)</b> Rs.20.22 Crores <b>e)</b> Rs.130.00 Crores (Cost of Strengthening included) <b>f)</b> Rs.30.00 Crores (Cost of Strengthening included)
Contact Information:	<b>The Chief Engineer</b> Mormugao Port Trust, Headland Sada,

	Goa - 403804
Screening Category:	A

(II) Activity

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	<p>The project does not involve any change in land use as all constructions are proposed on reclaimed marine area within the Port Basin under Mormugao Port Jurisdiction. The details are as under:</p> <p>a) In fishing Jetty Land required for shore based facilities like auction hall, loading area, parking area, approach road, internal roads, net mending shed, gear shed, rest shed, ice plant cum chilled storage facilities and administrative office. For these a total area of 20,000 sq.m is proposed to be reclaimed.</p> <p>b) A Berth of length 300m and a connecting approach road of 500m in length and 10m in width is proposed to be constructed.</p> <p>c) Coastal and Multipurpose Cargo Berth of length 600m. A backup earthen bund for reclamation is also proposed. The total back-up area shall be approx.. 50000 sq.m to cater to storage and handling of general and coastal cargoes.</p> <p>d) A Passenger jetty of size 98m X 8m, Launch jetty of size 100m X 8m and Port Craft Jetty of size 48m x 8 m. (All are proposed RCC structures). Reclamation work of 5000m<sup>2</sup>, Capital Dredging of 10000 m<sup>3</sup>.</p> <p>e) Strengthening of Berth No. 10 &amp; 11 will consist of projection of existing deck slab by 26m in water area supported on piles and reclamation work of 15000m<sup>2</sup>.</p> <p>f) In order to facilitate the deepening of</p>

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
			break water berth, sheet piling at the edge of the berth will be driven from a depth of (-) 9.00 m to a founding level of (-) 20 m.
1.2	Clearance of existing land, vegetation and buildings?	No	No clearance of existing vegetation or buildings is involved. The land is not vegetated as it is an integral part of Port land and used as such.
1.3	Creation of new land uses?	No	
1.4	Pre-construction investigations e.g. bore holes, soil testing?	Yes	Borehole and soil testing studies have been conducted and details are available with the Port.
1.5	Construction works?	Yes	<p>The waterfront facilities and other infrastructure facilities proposed as a part of the project are listed as below:</p> <p>(a) A landing quay of length 520 m and varying widths of 8m/ 10m and 12 m aligned in North South direction, constructed as RCC deck structure Supported on Piles, construction of RCC slip way 60x62 m and backup area constructed by providing reclamation bund of approx. length 400m constructed to reclaim an area of 20000sq. m. for accommodation of shore facilities for fishing harbor. The shore facilities of the fishing harbour will include auction halls, net mending shed, gear shed, rest shed, plot for ice plant, administrative office, canteen, toilet block, internal roads, parking lots, radio communication center etc. Dredging of 15000m<sup>3</sup>.</p> <p>(b) The POL berth of length 300 m is proposed to be constructed at a distance of 350 m away from the existing Berth No. 10, in the Vasco Bay. The proposed berth shall be constructed as a RCC structures resting in piles. The berth shall comprise of a jetty head of 40 X 20 m size with 2 breasting dolphins of 15 X 12 m size on either side of the Jetty head, and 2 nos. 12 X 12 m size mooring dolphins on either sides. The approach of</p>

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
			<p>the POL berth shall be a RCC deck structure of size 60 X 20 m for supporting Pump rooms and other ancillary facilities. The berth will be connected by an earthen/Laterite boulders 10m wide approach road. The approach channel of the berth shall be dredged to -15.1m to cater to 85000 DWT ships.</p> <p>c) Coastal cargo berth of length 250 mtr and Multipurpose Cargo Berth of length 350 m. A backup earthen bund for reclamation is also proposed. The total back-up area shall be approx. 50000m<sup>2</sup> to cater to storage and handling of general and coastal cargoes. The backup shall be constructed by laterite earthen bund and earth reclamation.</p> <p>d) A Passenger jetty of size 98m X 8m, Launch jetty of size 100m X 8m and Port Craft Jetty of size 48mx8m. (All are proposed RCC structures)</p> <p>e) Strengthening of Berth No. 10 &amp; 11 will consist of projection of existing deck slab by 26m in water area supported on piles and reclamation work of 15000m<sup>2</sup> and Deepening from -13.10m to -15.0m.</p> <p>f) In order to facilitate the deepening of Cruise Berth, sheet piling at the edge of the berth will be driven from a depth of (-) 9.00 m to a founding level of (-) 20 m. Deepening from -9.5m to -11.5m.</p>
1.6	Demolition works?	No	
1.7	Temporary sites used for construction works or housing of construction workers?	Yes	Temporary site office and store room with a total covered area of about 500m <sup>2</sup> .
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	Please refer to 1.5 above.
1.9	Underground works including mining or tunneling?	No	-
1.10	Reclamation works?	Yes	A total marine reclamation work of about 65000 m <sup>2</sup> is involved as detailed above at

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data	
			1.5.	
1.11	Dredging?	Yes	A total dredged quantity of about 1.62 Million m <sup>3</sup> is involved as detailed above at 1.5.	
1.12	Offshore structures?	No		
1.13	Production and manufacturing processes?	No	-	
1.14	Facilities for storage of goods or materials?	Yes	<b>Temporary</b>  Storage shed for cement/steel/ equipment of about 500m <sup>2</sup> .	<b>Permanent</b>  Permanent sheds are not envisaged for storage but for Auction hall, net mending shed, gear shed, rest shed, ice plant.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	Solid waste will be segregated into biodegradable and non bio degradable. Non biodegradable waste will be disposed of through the Mormugao Municipal Waste Treatment Plant. Biodegradable waste will be composted and used as manure for green belt areas developed within the Port complex. The sewage generated in new facility shall be collected in collection tanks and transported through night soil tankers to existing Port sewage treatment plant. Dredged material will be disposed off in the existing marine spoil grounds identified and demarcated by CWPRS, Pune.	
1.16	Facilities for long term housing of operational workers?	No.	-	
1.17	New road, rail or sea traffic during construction or operation?	Yes.	An approach road of 8.0m width and 50m length is proposed for connecting the project area to main city road.	
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	-	

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	-
1.20	New or diverted transmission lines or pipelines?	Yes	This is applicable to activity at (b) stated above. A POL/other liquid cargo pipelines from the existing Berth No. 8 shall be reinstalled at the proposed POL berth.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	-
1.22	Stream crossings?	No	-
1.23	Abstraction or transfers of water from ground or surface waters?	No	-
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	-
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Transport of materials and personnel will be through the existing road. An approach road of 8.0m width and 50m length is proposed for connecting the project area to main city road.
1.26	Long-term dismantling or decommissioning or restoration works?	No	
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Temporary and minor impact of influx of about 70 workers/ technical staff is expected only during construction phase. Most of the labour force will be local and hence reside at their residences located close by and shall go back to their homes on completion of the work.
1.29	Introduction of alien species?	No	-
1.30	Loss of native species or genetic diversity?	No	-
1.31	Any other actions?	No	-

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

S. No.	Information/checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	-
2.2	Water (expected source & competing users) unit: KLD	Yes	<p>During project construction and operation phases, water would be required for meeting various needs.</p> <p>During construction phase, about 20 m<sup>3</sup>/day of water will be required for meeting domestic water demand as given below:</p> <ul style="list-style-type: none"> <li>- Water for workers at the project site @50lpcd for 70 persons – 3.5 m<sup>3</sup>/day.</li> <li>- Water required for construction and allied purposes is about 16.5 m<sup>3</sup>/day.</li> </ul> <p>During operation phase, about 25m<sup>3</sup>of fresh water will be required to meet the demands of fishing boats, manufacture of ice, domestic use, cleaning of fish, etc. Seawater will also be used for certain needs.</p>
2.3	Minerals (MT)	No	
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	Yes	<p>Stone – 50,000 m<sup>3</sup>  Aggregate – 90,000 m<sup>3</sup>  Sand – 45,000 m<sup>3</sup></p> <p>Sand, Aggregates, Stones and Murrum will be procured from within the State through approved contractors.</p>
2.5	Forests and timber (source – MT)	No	-
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	The power for construction will be arranged from local sources. However, provisions shall also be made for diesel generating set of adequate capacity to be used as back up during power cut and emergency.
2.7	Any other natural resources (use appropriate standard units)	No	

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	The nature of present development does not involve any such eventuality.
3.3	Affect the welfare of people e.g. by changing living conditions?	No	The proposed modern fishing jetty will make all fishing operations easy and efficient and hence give boost to the economic welfare of local fishermen. The proposed project will create the following additional infrastructure: <ul style="list-style-type: none"> <li>• Fish auction hall</li> <li>• Ice plant cum chilled storage facilities.</li> <li>• Fish drying platform</li> <li>• Net mending shed</li> </ul>
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	-
3.5	Any other causes	No	-

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes Source: PFR	Yes	The construction waste generated during construction phase shall be used partly for land filling and restoration of the project site. Balance material will be disposed as per the guidance of the Mormugao Municipal Authority at designated road construction sites. The dredged spoils shall be used in the extent possible for reclamation and unsuitable method will be disposed off at the designated spoil grounds.

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.2	Municipal waste (domestic and or commercial wastes)	Yes	The municipal waste generated during project construction phase shall be of the order of only 0.03t/day. This will be disposed through the Mormugao Municipal Council.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	-
4.4	Other industrial process wastes	No	-
4.5	Surplus product	No	-
4.6	Sewage sludge or other sludge from effluent treatment	Yes	The sewage generated in new facility shall be collected in collection tanks and transported through night soil tankers to existing Port sewage treatment plant.
4.7	Construction or demolition wastes	No	-
4.8	Redundant machinery or equipment	No	-
4.9	Contaminated soils or other materials	No	-
4.10	Agricultural wastes	No	-
4.11	Other solid wastes	No	-

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	The operation of various equipment during construction phase will require combustion of diesel. The major pollutant, which gets emitted, as a result is SO <sub>2</sub> . The SPM emission is minimum due to low ash content in diesel. The short term increase in SO <sub>2</sub> , even assuming all the equipment are operating at a common point is expected to be quite low. Thus, no adverse impact on ambient air quality is anticipated.
5.2	Emissions from production processes	No	-
5.3	Emissions from materials handling including storage or transport	Yes	During construction phase there will be increase in vehicular movement. Construction material will be brought and stored at various sites. Due to blowing of

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
			wind especially when environment is dry, some of the stored material can get airborne. However, impact on this account is not expected to be significant. During project operation phase, fish landed at the fishing jetty shall be transported to consumers in trucks. The increase in number of trucks operating at the fishing jetty will be determined in the EIA study and necessary precautions will be taken as per the instructions of GSPCB.
5.4	Emissions from construction activities including plant and equipment	Yes	Same as 5.1
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	No	-
5.6	Emissions from incineration of waste	No	-
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	-
5.8	Emissions from any other sources	No	-

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data										
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise will be generated during construction phase as a result of operation of construction equipment. The noise likely to be generated due to operation of various construction equipment is given as below: <table border="1" data-bbox="860 1747 1429 2056"> <thead> <tr> <th>Equipment</th> <th>Sound level (dBA)</th> </tr> </thead> <tbody> <tr> <td>Floating pontoon with mixer machine and crane</td> <td>70</td> </tr> <tr> <td>Winch machine</td> <td>80</td> </tr> <tr> <td>Transit mixer</td> <td>75</td> </tr> <tr> <td>Dumpers</td> <td>75</td> </tr> </tbody> </table>	Equipment	Sound level (dBA)	Floating pontoon with mixer machine and crane	70	Winch machine	80	Transit mixer	75	Dumpers	75
Equipment	Sound level (dBA)												
Floating pontoon with mixer machine and crane	70												
Winch machine	80												
Transit mixer	75												
Dumpers	75												

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data								
			<table border="1"> <tr> <td>Generators</td> <td>85</td> </tr> <tr> <td>Batching plant</td> <td>90</td> </tr> <tr> <td>Air compressors</td> <td>90</td> </tr> <tr> <td>Pile drivers</td> <td>*115</td> </tr> </table> <p>Inconvenience, if any, due to this noise will be restricted only for the construction period and that too during the working time. The equipment will be kept in good working condition to reduce the impact.</p>	Generators	85	Batching plant	90	Air compressors	90	Pile drivers	*115
Generators	85										
Batching plant	90										
Air compressors	90										
Pile drivers	*115										
6.2	From industrial or similar processes	No	-								
6.3	From construction or demolition	No	-								
6.4	From blasting or piling	Yes	Only from piling (90 dB(A)). No blasting is envisaged.								
6.5	From construction or operational traffic	Yes	<p>During construction phase, there will be increase in vehicular movement for transportation of construction material. Noise generated during operational phase is insignificant. Fishing activity and transportation of fish is happening for the temporary Jetty in the area.</p> <p>Based on past experience, impacts on ambient noise levels due to operation of construction equipment, and increased vehicular movement is not expected to be significant.</p>								
6.6	From lighting or cooling systems	No	-								
6.7	From any other sources	No	-								

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	-

7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	The sewage generated in new facility shall be collected in collection tanks and transported through night soil tankers to existing Port sewage treatment plant.
7.3	By deposition of pollutants emitted to air into the land or into water	No	-
7.4	From any other sources	No	-
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	-

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No	-
8.2	From any other causes	No	
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	The proposed project site falls in Zone-III as per IS-1893 (Part-I):2002. Hence, it is not a seismically active zone. Similarly, there is no record of occurrence of floods, landslides, cloud bursts, etc. in the project zone.

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

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	Lead to development of supporting utilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads,	Yes	The proposed development will improve the Port infrastructure for various activities such as fishing, cargo handling operations and tourism. Fishing industry will get boost through the development of modern fishing Jetty and other facilities,

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
	power supply, waste or waste water treatment, etc.) <ul style="list-style-type: none"> <li>• housing development</li> <li>• extractive industries</li> <li>• supply industries</li> <li>• other</li> </ul>		which will lead to export of Marine products. Cruise facilities will positively impact the tourism industry. POL berth, Coastal and multipurpose Berths will increase capacity of Port. This will benefit the Port and hence the State. About 70 persons are likely to be deployed during construction phase. In particular the proposed development of modern fishing jetty will fulfill the long pending demand of local fishermen and hence community at large.
9.2	Lead to after-use of the site, which could have an impact on the environment	No	
9.3	Set a precedent for later developments	Yes	Please refer 9.1 above.
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	Yes	As a part of the existing Port complex this modernization and expansion will improve the efficiency and profitability of port operations and benefit the local community as well as the State.

### (III) Environmental Sensitivity

Sr. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Yes	Dr. Salim Ali Bird Sanctuary is located about 13 km from MPT (Refer Figure-3). NIO has reported corals in Grand island located about 7 km from MPT. Mangrove vegetation is located as few patches in Zuari creek at about 7 km from MPT.

Sr. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	Yes	Only a few patches of mangrove vegetation are present in the area. However, the nearest patch of mangrove is about 7 km from the Eastern boundary of the Port in the Zuari River
4	Inland, coastal, marine or underground waters	Yes	The active Port Basin is located in the Zuari Estuary and is used continuously for Port activities for last five decades.
5	State, National boundaries	No	-
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	No	-
7	Defence installations	Yes	INS Hansa- 2.2km; Goa Shipyard- 2.8km
8	Densely populated or built-up area	Yes	Mormugao population: Approx. 28000.
9	Areas occupied by sensitive man-made land uses ( <i>hospitals, schools, places of worship, community facilities</i> )	Yes	3 kings church- 13.289km; ReiusMagoos fort- 9.26km; Deepvihar School- 0.9km; MES College- 7.32km; MPT hospital- 1.40km; SMRC Hospital- 4.52km
10	Areas containing important, high quality or scarce resources ( <i>ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i> )	Yes	TOURIST PLACES Baina beach- 2.4km; Bogmalo beach-6.1km; St. Jacinto Island- 6.7km
11	Areas already subjected to pollution or environmental damage. ( <i>those where existing legal environmental standards are exceeded</i> )	No	-
12	Areas susceptible to natural hazard which could cause the project to present environmental problems ( <i>earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions</i> )	No	There is no record of occurrence of floods, landslides, cloud bursts, etc., in the area. The proposed project site is not located in a seismically active

(IV) **Proposed Terms of Reference for EIA studies**- Enclosed as Annexure.