EXECUTIVE SUMMARY

ENVIRONMENTAL IMPACTASSESSMENT REPORT

FOR

DEVELOPMENT OF KENI FISHING HORBOUR AT GABITWADA VILLAGE, ANKOLA TALUK, UTTARA KANNADA DISTRICT

Prepared for

Department of Fisheries

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1 INTRODUCTION

Karnataka's coastline called Karavali stretches 300 km between Mangalore in Dakshina Kannada district and Karwar in Uttara Kannada district. The coastline of Karnataka has been along the eastern shore of Arabian Sea. The Exclusive Economic Zone of Karnataka coast is estimated at 87,000 km^2 with a continental shelf area of 27,000 km^2. The total fishermen population in the three coastal districts have been estimated as 2,33,624 of which 96,853 persons are actively engaged in fishing and fishery related activities. The marine fish production of Karnataka state during the year 2011-12 has been estimated at 3,40,570 tonne valued at Rs.1,335.64 Crores. Also, there has been an increase in the exports of Indian fish products.

2 PURPOSE AND JUSTIFICATION OF THE PROJECT

Marine fisheries constitute an important industry in Uttara Kannada district. It is an important economic activity and a source of livelihood to a large number of coastal people in the district. In order to improve the socio–economic status of the local fishermen “Development of harbour is a Must”. Due the proposed harbour development at Keni, there will positive impacts on the socio – economic status of the surrounding areas, more employment opportunities will be generated, Physical infrastructure development such as improvement to roads, UGD lines, street lights, fishermen rest sheds, restaurant, boat repair shops, auction halls, fuel stations etc. will take place. There will be reduction of pollution burden on the seashore especially on the marine biota. Keeping the Environmental Management as the focal issue right from the harbour development area, Layout stage will definitely herald a new era in the sustainable harbour growth in harmony with the environment.

3 JUSTIFICATION OF THE PROJECT SITE

- Availability of wide range of fish species at the northern breakwaters.
- Site is very well connected by road which shall help in transportation of raw materials and finished products.

- The site has been acquired as non-agricultural land. Hence, conversion approval for non-agricultural purpose is not required.
- Local Manpower is available for construction as well as operation phase.
- All infrastructure facilities are easily available.
- Back up land area is available.
- Infrastructure facilities like ice plant, freezing plant etc. available in the close vicinity of the site.
- Ideal location from the point of view of nearness to residing fishermen community.

4 DETAILS OF PRODUCT AND PROJECT LOCATION

The location of the proposed fishery harbour site at Keni corresponds to Latitude 14^0 39' N and Longitude 74^0 16' E and is in Ankola taluk of Uttara Kannada District of Karnataka State.

Table No. 1 Details of Products

Sl.No.	Product Name	Quantity (TPA)
1	Fish Handling	≤10,000

5 SAILENT FEATURES OF THE PROJECT SITE

Sl.No.	Particulars/Parameters	Name	Aerial distance from the Project Site
1	Geographical Positions	Project Site	Latitude 14° 39' 40.83" N and Longitude 74° 16' 42.43"E
2	Nearest village	Keni	2km
3	Nearest city	Ankola	4km
4	Nearest River	Gangavalli	10
5	Nearest Highway	NH-17	2.5km
6	Nearest Airport	Panaji	98km
7	Nearest Railway Station	Ankola	7km
8	Nearest National park, Reserve Forest, Wildlife Sanctuaries	----	Not present within 10 km radius

6 BASELINE ENVIRONMENTAL STATUS

The study was conducted for the period December 2015 to February 2016.

Attributes	Sampling		
	Locations	Parameters	Frequency
Meteorological	Project location	Temperature, Relative Humidity, Precipitation Wind direction, Wind Speed	Hourly data from December 2015 to February 2016
Ambient Air Quality	08 locations in the study area of 10km radius from the project location	$PM_{2.5}$, PM_{10}, SO_2, NOx,	24 hourly, once in a month during study period
Noise	08 locations in the study area of 10km radius from the project location	Noise Levels in dB(A)	Once for a season
Ground Water	13 locations in the study area of 10km radius from the project location	Physical, Chemical,	Once for a season
Surface water	6 locations in the study area of 10km radius from the project location	Physical, Chemical	Once for a season
Soil Quality	13 locations in the study area of 10km radius from the project location	Physical, Chemical Characteristics, Soil Texture	Once for a season
Ecological Data	Within 10km radius of study area	Existing Flora & Fauna	Once in Study Period
Socio-economic Data	Within 10km radius of study area	Socio-economic characteristics of the affected area	Once in Study Period

Ambient Air Environment: The concentrations of PM_{10} $PM_{2.5}$, SO_2 and NOx) were found within the acceptable limits given by National Ambient Air Quality Standards (NAAQ).

Noise Environment:

The minimum noise level 49.2 dB (A) and the maximum noise level 52.1 dB (A) were observed in day time. The relative high values of noise recorded at Bobravada village.

Summary of Soil Quality

The following are the highlights of soil quality in the study area:

- Results of pH were varying in narrow range for one location to other location from 5.36 to 7.9 during the study period .Overall the pH of all the soil samples were found almost neutral.
- Concentration of organic carbon was found in the range of 0.62 to 0.87 %. Very low value was observed in the samples.
- During analysis average concentration of total Nitrogen was found in the range of 0.57%-0.63%. Minimum value was observed in the soil sample of Bombravada.
- Phosphorous (as P) content was found in the range of 2.39 to 12.7 kg/ha. Minimum value was observed in the soil sample of Bombravada.

Summary of Water Quality

- pH range of ground water was observed between 6.3 – 8.2 whereas surface water show between 6.81 to 7.33 .
- Average Total dissolved solids were recorded in the range of 414 – 1125 mg/L. Total Dissolved solids concentration was found within the acceptable limit for all the locations. Surface water shows TDS between 29250 to 37758 mg/lit.
- Average Total Hardness was in the range of 142 - 1090.8 mg/L with minimum at Manjuguni & maximum at Dodabetta K. Hardness results were found within the permissible limit for all the locations. Surface water shows value of the same between 860 to 1300 mg/lit.
- All the heavy metals were found well within the range of prescribed standards. Any of toxic metals were not found in any village during analysis.

Ecology & Biodiversity

Total 52 species of floral species recorded during the study period. Among the faunal diversity 6 species of mammals & reptiles, 26 species of avifauna 8 species of invertebrates recorded.

Socio Economic Environment:

Sex Ratio: The sex ratio i.e. the number of females per 1000 males is in range of 678 – 1357 with lowest in Ankola and highest in Berde. The Sex ratio i.e. the number of females per 1000 males indirectly reveals certain sociological aspect in relation to female births, infant mortality among female children

Literacy Rate: Among all the villages of study area Varilbena is having high literacy rate i.e. 66.67 %. There is not much difference between female literacy rate and male literacy rate in the study region. Female literacy rate is an important indicator for social change.

Economic Aspects: Economic aspects of the study area include the economic structure of the people of the surrounding area. It can be predicted that economic structure of the study area will be improved with time, because it consists large industrial estate and hence there are more employment opportunities

Land Use Land Cover Statistics

Sl. No.	Classes	Area in Aq. Km	Area in %
1	Water body	152.32	48.49
2	Beach	6.44	2.05
3	Built-up Land	52.60	16.74
4	Agriculture	14.97	4.77
5	Forest	39.20	12.48
6	Open Land	48.62	15.48
Grand Total		**314.16**	**100**

7 SUMMARY OF IMPACTS AND MITIGATION MEASURES

Anticipated Environmental Impacts	Mitigation Measures
Air Environment	
Potential source of the pollution will fugitive emission from the equipment's and gaseous Emission from Transport vehicles. Temporary Impacts on air quality of area due to Emission from DG set operated as standby power source.	Proper facilities / infrastructure (like enclosed/closed conveyor, DG set with stack of adequate height & diameter etc.) shall be provided. Greenbelt area shall be developed in and around the proposed site to minimize the generation of fugitive dust.
Noise Environment	
Operation of DG set for emergency power supply will also increase the noise level.	Periodic monitoring of sound level at suggested places shall be carried out, Machines with low sound pitch shall be used and vehicles with noise level shall not be operated at night. Transport vehicles shall be set in operation only at day time & shall be equipped with low noise engine & silencers.
Water Environment	
Movement & cleaning of the ships in the marine area will cause spillage of the fuels or	Regular monitoring of water quality will be carried out at the site and in nearby surface

Anticipated Environmental Impacts	Mitigation Measures
other such materials in the marine resources which may Contaminate marine water.	bodies to keep track of adverse environmental changes. The waste generated from the ships will also be treated & disposed off as per authority rules.
Runoff of untreated sewage & effluent & other operational activity may also pose significant adverse impacts on the surface water quality	Wastewater generated will be treated in adequate size Effluent Treatment Plant & the treated wastewater will be reused for gardening Purpose, washing and flashing. Adequate design and procedural mechanisms have been proposed to ensure that the terrestrial groundwater or surface water bodies are not impacted by the harbour operations.
Land Environment	
Land pollution may take place during the operation phase due to accidental spillage of the fuel on land.	Operational area of concern for soil contamination by spillage/leakage of materials or fuel shall be lined to prevent entering of contaminating materials in the soil under the area. The used oil & discarded drums / empty containers shall be sold to the approved recycler/scrap dealers. ETP Sludge shall be used as manure
Land pollution may take place during the operation phase due to Hazardous waste	Dumping of solid wastes on land shall be strictly Prohibited. The entire Hazardous waste generated shall be disposed adhering to the Hazardous Waste Management Rules 1989 & 2003. A designated solid/hazardous storage area designed as per guidelines of CPCB shall be provided with proper floor lining.
Marine Environment	
During the operation phase adverse impact on marine ecology will be due to runoff of untreated domestic wastewater, water from washing & sprinkling etc. The jetty operations would also produce solid waste such as garbage; debris etc. which if not Properly disposed might influence the near shore areas. This includes waste and wastewater discharges, accidents and spillage containing oil, etc.	Disposal of sewage shall not be made in to the nearby/adjacent marine or other ecological habitat to prevent impacts on the ecological structure & marine habitat. Any kind of solid wastes shall not be dumped in to the marine environment as well as on land of premises /surrounding area. Regular monitoring of the local area shall be done to inspect any residual impacts.
Ecology	
Damage to the ecology of the muddy terrain as well as the aquatic resources due to	Any activities causing impact on marine environment especially navigation channel

Anticipated Environmental Impacts	Mitigation Measures
Turbidity in the water resources and disturbance of the muddy terrain (mainly by ship movement)	area & surrounding coastal area shall be prohibited to ensure that the operation of the proposed project does not affects the marine & ecological environment of the area.
Socio-Economic Environment	
Proponent shall give priority to appointment of local people to maximum extent during the employment process for proposed project.	Emergency response plan and DMP shall also be placed to take care of adverse impact in case of any incident of accident. Such plans shall also be helpful to the local villagers/area during the incidence of Natural Disaster. Safety training shall be provided to all the workers. The industry shall carry out welfare activities and provide basic amenities to employees and surrounding villagers.

8 ADDITIONAL STUDIES

Risk Assessment

A detailed Risk Assessment (RA) study was carried out for the proposed project. The following processes/units have been covered for the RA study of the proposed project:

- Harbour operation
- D. G. Set
- Material handling/transportation/storage
- Personnel safety measures
- Noise environment

Disaster Management System

The project proponent will be developed an emergency management system to tackle the emergency situation. The roles of the following personnel are described to tackle any such emergency situations;

- Site Main Controllers
- Incident Controllers and Deputy Incident Controllers
- Key Personnel
- Essential Workers

The other important elements addressed as a part of Disaster Management Plan are:

- Assembly points
- Emergency control center
- Fire control arrangements
- Medical arrangements
- Other arrangements

9 GREENBELT DEVELOPMENT PLAN

The proponent has planned to develop green belt within premises all along factory periphery consisting of at least three rows of trees of local species. However, if the adequate land is not available within premises, unit shall tie up with local agencies like gram panchayat, school, social forestry office etc. for the plantation at suitable open land in nearby locality. Total 800 m2 area shall be allocated for green belt. Further, avenue plantation will be undertaken along the road side of the plant. Extensive afforestation at plant area will be undertaken which not only act as lung will space in the area but will also improve aesthetics. Multi-layered plantation comprising of medium height trees (7 m to 10 m) and shrubs (5 m height) are proposed for the green belt. Moreover, in future creepers will be planted along the boundary wall to enhance its insulation capacity. The landscapes are colourfully developed by planting decorative plants & trees and the right plant species shall be selected in consultation with expert Horticulturist & forest department. The land shall be chosen timely with permission of relevant concerned authority for land utilization for forestry/greenbelt.

10 SOCIAL WELFARE AND UPLIFTMENT PLAN

The proponent is actively involved in the improvement of society through its contribution in social welfare activities & programs. It directly organizes various programs for social welfare & upliftment or indirectly contributes in such activities conducted by other organizations by providing financial & other aid. Owing to the approximate cost for demand of infrastructure and service support, the management of KFDC shall conduct a need based survey for identifying the required services in the surrounding area and allocate a specific budget to be implemented with an action plan of five years.

11 BUDGETARY PROVISION FOR EMS

Table No. 10.2 Budgetary Provision for Environment Management Plan

No.	Particulars	Amount in INR, Lakhs
One Time Installation Cost (Capital Cost)		
1	Air Pollution Control	25
2	Noise Control System	15
3	Green Belt Development	15
4	Environment Monitoring and Management	30
5	Occupational Health & Safety	15
	Total	**100**
Recurring Cost		
1	Environmental Monitoring /APH Maintenance	10
2	Greenbelt Maintenance	7
3	Noise Pollution Control	5
4	Occupational Health	10
5	Environmental Management	5
6	Corporate Social Responsibility	15
Total		**52**

12 CONCLUSION

The proposed project of fishery harbour envisages the activity of fish handling at Vill: Keni , Tal: Ankola, Dist. Uttara Kannada. The EIA study has been carried out with respect to the TORs awarded by SEAC, Karnataka. All the impacts likely to have an effect on the environment have been identified and efficient/adequate mitigation measures have been proposed for the same. Considering the probability of likely impacts, the proponent has planned adequate mitigation measures and EMP. Further, the proponent also undertakes CSR activities which shall have beneficial impacts on the socio-economic environment. Employment generation due to the proposed project is also considered positive impact on the socio-economic environment. Measures like energy conservation and greenbelt development are also noteworthy. Looking to the overall project scenario, employment potential and allied development plans; it has been noticed that the proposed project would significantly help in the improvement of the society and nation at large.