



EIA TERM PROJECT

**Review of
Passenger Jetty
Expansion Project**

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Passenger Jetty Extension Project - Tamilnadu Maritime Board, Kanyakumari

Background Information:

Tourist thronging Kanyakumari would have definitely visited Vivekananda rock memorial and Valluvar statue, it's one of the favourite tourist destination spots, known for its picturesque sunrise and sunset scenes. There's one major problem tourists face when they visit these places, waiting time for the ferry is longer due to minimal berthing space in the existing jetty, only one ferry could be engaged at a time. During peak seasons it causes lot of discomfort to the tourist, waiting line for the ferry will be about one to one and a half kilometre long. This might discourage few tourists to visit these two places. Ferry services is being operated by Poompuhar Shipping Corporation Limited (PSCL), currently its fleet size is 3, existing jetty has a length of 37m with a width of 8m. PSCL has entrusted the work of upgrading the facility to Tamilnadu Maritime Board (TNMB), which has approached the department of coastal engineering, IIT Madras for the feasibility report and the designing of facilities. Entire jetty is planned in CRZ -IV (consists of the coastal stretches in the Andaman and Nicobar Islands, Lakshadweep and small islands, except those designated as CRZ I, II, III. The project is well within the boundary that is allocated to PSCL by the government of Tamilnadu.

One catch in this project is CRZ Notification 2011 prohibits alteration of landscape in such areas for entertainment, recreation and beautification activities. This might come as a hindrance when they are seeking approval from Coastal Regulation authority.

Project outcomes:

Existing jetty is of 37m with a width of 8m, proposed project would increase its length to 140m and maintaining the same width. Deck level of the new jetty would be at the same level of existing jetty. Protective groyne is proposed for a length of 140m to protect the jetty from erosion and wave action, it would have a bed level of (-) 4m CD (Chart datum) and (-)4.5m CD (Chart datum) taken for the design. This particular project location due to its coastal vulnerability requires shoreline management. This groyne would come up perpendicular to Vivekananda rock memorial, this alignment is chosen by taking into consideration the predominant wave direction and safe berthing of ferry and its length would be 140m made out of precast concrete blocks and Tetrapod. Once this project is completed the jetty can accommodate 5 vessels at a time. This extension project is carried out taking into consideration the projection of tourist influx in the upcoming years. From the bathymetry survey conducted by IITM, it was concluded that dredging was not needed. Total budget of the project is INR 20 crores. It is stated to be completed in 12 months, which includes the project execution and the approval from Coastal Regulation Zone.

Resource consumption during the construction and operations of the project:

Water required for the construction phase would be purchased from government sources. Waste water treatment is out of the scope of this project, Emissions from the vessels would be curbed by installing DG sets suggested by CPCB. They have capped the solid waste generated to be around 1TPD, solid waste would be handed over to external agencies.

It's an expansion project, so the secondary infrastructure is already in place like water storage and supply, roads, EB grid, STP, green belt, fire station.

Analysis of Alternatives:

It has been clearly stated that the existing jetty is insufficient in handling the ferry, leading to poor operations of the existing ferry, only possible solution existing for them is to increase the length of the jetty to handle 3 ferries at a time. No other alternative was considered for the study. As the jetty could be subjected to erosion, a protective groyne is being proposed.

The adequacy of samples of surface water, ground water and air pollution data and whether they have been collected in required place?

From the point of the project location, 10 km radius was considered the impact area, data on micrometeorology, air quality, water, noise, soil/sediment, socio economics and terrestrial and Marine biology were studied. Data on above parameters were collected only during the month of May, the reason for doing so was not mentioned in the report, as Kanyakumari is prone to cyclones, data on wind speed and direction, rainfall could have been collected during the month of November and December also. Data collected during the month of May would not give the exact picture.

When it comes to air pollution, major advantage is this region has unstable atmosphere which favours the dispersion of pollutants, this was also evident in the PM 10, PM 2.5 and other contaminant measurements, all of them were well within the NAAQS standards. They had selected 5 locations for setting up ambient air quality stations, reasoning for selecting these stations was not mentioned in the EIA report. They have data on micrometeorology, pollutant emission from the ferry. They could have carried out dispersion modelling to find out regions, through which the plume travels, based on this information, they could have setup the monitoring stations. Also, information on the topography of the area in which these stations were placed and the land use pattern, major sources around the station, this information was not provided in the report. They have covered all the major pollutants; their values were lesser than NAAQS.

For water quality, they have surveyed the various sources that fall within the 10 km radius from the site, surface and subsurface sources were considered for the water quality data. Surface water was collected from back water, sea water near project site, manakudi river, kottaram lake and Pottalkulam lake. Subsurface water was collected from 5 places in the impact area, again why these areas was considered was not specified. Physical and chemical values reported by them was also fishy. Dissolved oxygen in sea water sample collected near the site and back water sample collected from kovalam had values above 100 mg/l. Arsenic concentration have gone up to 170 mg/l. One of the water samples from Manakudi river had arsenic concentration of 65 mg/l. They have mentioned in the report that water is relatively potable, whereas maximum arsenic concentration permissible in drinking water is about 0.1 mg/l. They could have rechecked the values before approving the document. Samples are adequate, but the reasoning for choosing this location is not provided for both water and air quality measurements.

This project has a positive impact to the tourism sector, waiting time reduces then definitely tourists would have the eagerness to explore the place, it would boost the local economy and provide employment opportunities to many local people, but there's a catch, they had mentioned one particular issue in the **additional study** section about **Curio Trade**. It's basically the trade of marine ornamental molluscs and corals, along with other hard bodied marine vertebrates and invertebrates, this is the major source of income for many of the coastal communities. It has been clearly banned

by the Indian Wildlife Protection Act 1972. With increase in tourism sea shells, corals and sea horses would be taken out of their natural environment and traded, which is going to have a negative impact on the aquatic ecosystem. This was **not included in the environment management plan**. They had created an **Impact quantification matrix**, **possible increase in the Curio Trade was not considered in creating the matrix**. From the impact quantification matrix, the overall impact of the project has been positive.

Environmental Management Plan:

They had devised the EMP for three phases of the project namely, Planning and design, establishment and construction phase and Operations and Maintenance phase. They found out the critical activities of the project and drafted the mitigation plan and monitoring strategies. Like discharge of effluent, waste oil, grease and sewage their mitigation plan would be to comply to MARPOL convention and other regulation and monitoring would be regularly carried out by TNMB chief engineer. As mentioned before, they had failed to consider few secondary impacts into the environmental management plan, whereas the direct impacts have been extensively covered with the requisite mitigation and monitoring strategies. Most of the monitoring frequency and strategies are ambitious also. During the construction stage EMP was drawn for Marine environment and Terrestrial Environment. EMP for operation and maintenance phase mainly focussed on continuous data collection on the magnitude and direction of wind and wave, data collection on coastal processes like cyclone, sea level rise, Environmental monitoring and Monitoring of marine life and biodiversity. EMP did not consider socio economic aspect of the project, necessary laws should be enforced by the forest officials, along with educational and awareness program for promoting alternate resource of livelihood for seashell and coral collectors and curbing curio trade, this should have been part of EMP, also the impact of this extension project on the fishermen's livelihood was not considered.

They have listed down the possible benefits when the project gets implemented like employment to the local people, growth potential for TNMB, ingress of more international tourist, also enhancing the tourism of adjacent state. They have promised in their EIA report that PSCL will accommodate the educated local youths for possible employment, CSR plan and corporate environmental plan would be drafted for the growth of fishermen community around the project location. With ingress of tourist, that will demand better transportation facilities, solid waste management plans, which would benefit the local people also. They have not specifically covered the people who will be directly impacted by the project, they have mentioned the demography data for entire Kanyakumari, whereas the impact area is 10km radius from the project area. What would be the employment generation due to this extension, a rough estimate should have been mentioned to further strengthen their proposal.

Environmental Monitoring Program:

Two monitoring approaches have been proposed, Onsite and off-site monitoring. On site monitoring is for TNMB Water spread area and Off-Site monitoring for TNMB administration like the Jetty and its environment. Both continuous and Periodical monitoring would be carried out.

Most of the parameters would be measured once in a season, this would be subjected to changes depending upon the recommendations from Coastal regulation authority. Only parameters like water in off site would be monitored every month.

Whether report has been prepared with due diligence for environmental preservation?

In the environmental baseline monitoring extensive study has been carried out to collect data on all Value environmental components and their co-existing relationships, data on the flora in the impact region, aquatic plants, phytoplankton, fauna, insects, birds and zooplanktons, fishes, polychaetes and molluscs were collected and presented in the EIA report. Only aspect which was lagging is the information on why only May month was considered for the data collection and selection of site for water and air quality sampling. Barring few errors in the water quality measurements, data collection for other aspects of the environment were carried out with due diligence. Environmental monitoring plan, mitigation strategy has been drafted in a very rational way, the project would not run into problems, if the above-mentioned monitoring and mitigation strategies are followed religiously. Impact quantification matrix did not take into account the secondary impacts of the project, so I feel matrix has been little biased, Curio trade is bad for the marine environment, this was not taken into account under the environmental parameter of Marine environment for impact quantification matrix

Prediction on the impact of groyne construction on the shoreline has not been attached with the EIA report. This is very important as mentioned before the CRZ notification of 2011, prohibits any transformation in coastal terrain for tourists or entertainment purpose, it has been mentioned that impact prediction has been attached in the annexure section, but annexure section is not attached with the report. Summary of the impact prediction should have been mentioned in the report. I had searched for the recent status of the project; it has been decided to carry on with the extension work without constructing the groyne. They should have mentioned the safety aspects that would be improved in Vivekananda rock and Tiruvallur statue after the construction of jetty, as the inflow of tourists to these places would increase.

Lessons learnt from this report:

1. Provide proper justification while selecting the locations for air and water quality sampling
2. Summary of the impact prediction should be presented in a condensed manner
3. Secondary impacts should be part of the Impact matrix and Mitigation plans, it was a good practice of them to consider the impacts of increased tourist flow once the project is completed, they should have included that in the mitigation and impact matrix, but these were mentioned only in the additional study section.
4. Quantification of statements, like they had mentioned employment generation as one of the benefits of the project, but they could have quantified this statement to reinforce their proposal.
5. Proof-check the values before publishing it in EIA report
6. Data was collected only for the month of May, reasoning was absent, it would have been great if they had considered another month, maybe in the monsoon time for data collection, this would have given a better picture, as this region is cyclone prone, impact of cyclone on the ferry activities, coastal impacts should have been part of mitigation strategies.