

QUESTIONNAIRE FOR ENVIRONMENTAL APPRAISAL OF PORTS AND HARBOUR PROJECTS

1. General Information

Note: Details in respect of items 4-7 are to be supplied in respect of major developmental works.

1.1 Name of the Port/Harbour

1.2 Classification:
Major
Intermediate
Minor
Fishing

1.3 Location

Latitude

Longitude

1.4 Authority/Authorities:

Area under Direct control (defined as controlled area) Name of the official to whom correspondence may be addressed.

Attach organizational chart and give details of the total staff in action for day to day execution of the work.

(Note: Make a special mention of the Environmental officers, if any, and their duties)

1.5 Approach and Charts

Is the port connected with a river/canal system? (if yes, give details)

Enclose a detailed layout map for transportation system for approach to and from the harbour.

Describe any other means of transportation including railway system with marshalling yard, etc.

List of hydrographic charts in use for operational purpose and any other charts applicable.

List of industries adjoining the harbour from which discharges of pollutants may effect the ecology of the harbour.

1.6 Please indicate minimum and maximum water depth in:

- Adjoining coastal waters
- Approach channel to harbour waters
- In harbour area

1.7 Give the list of in-house publications/reports (enclose one copy of each)

2. Berthing, Docking and Handling Facilities

Note: Details under this section are required to be supplied in case of major expansion programmes, involving substantial additions to port's handling capacity.

2.1 *Berthing Facilities*

Total number and types of berths/wharfs

Give complete details of dimensions, water depths and major handling facilities on the above berths together with the length and size of the vessels which can be accommodated. The type of cargo normally handled at these berths likely to cause pollution.

2.2 *Docking facilities*

Nos. and principal dimensions of

- Dry docks Also describe pollution control, prevention and combating facilities , the
ks in the event of pollution hazard.
- Floating docks
- Slipways
- Marine workshops

2.3 *Seagoing Facility*

- Nos. of dredgers, floating cranes etc.
- Nos. of tugs with their ballard capacity and their capacity with regard to fire fighting, salvage stage perationsand pollution combating facilities.
- Nos. of gullage/garbage disposal barges with capacities,

2.4 *On Shore Handling Facilities*

- .Give the details of major cargo handling equipment and allied machinery.
- Number of shore cranes (give capacity, type and end use for each of the cranes)
- Number of mobile cranes (give capacity, type and end use for each of the cranes)
- Number of tractors with trailers/loaders

2.5 *Any other relevant information*

3. **Warehousing and Storage Facilities**

Note: Details under this section are required for projects relating to warehousing facilities, independently or as part of a major project.

- 3.1 Number of warehouses with dimensions
- 3.2 Number of temporary sheds with dimensions

- 3.3 Number of transit sheds with dimensions
- 3.4 Number of dangerous cargo sheds, if any
- 3.5 Number and area of open spaces available for storage purposes
- 3.6 Do Warehouses have railway store s/facilities?
- 3.7 Are open spaces available with sliding facilities?

4. Amenities Available

Note: Details are required for projects involving creation of additional facilities. However details on existing amenities must also be provided.

4.1 Power- Electrical

- Give sources of power supply and figures for the total energy consumption in the controlled area of the port.
- Give details of the energy centre/electrical substation and distribution systems.
- Give projections for the energy consumption in the next ten years .

4.2 Power-Coal and oil based

Give details of power generation based on coal or oil and the source of supply of inputs.

4.3 Fresh Water

Sources of fresh water supply - Consumption rates (months),during past 5 years

4.4 Transportation

Give brief description of Public railway Public roadways Other modes

4.5 Housing

Give brief description and distance of housing colonies for

- Workers
- Supervisors
- Officers and Management

4.6 Green Belt

- What is the total area of green belt/ parks in the port premises ?
- What are the total number of trees and their average height and average coverage area ?
- What are the maximum number of trees which could be accommodated in the port area,?
- What is the total green belt area within 5 miles radius of port and what is the maximum number of trees which could be sustained ?

-What type, of trees are most suitable for your vicinity.?

5. Traffic and Cargo Handling

5.1 Imports

Indicate figures for the past five years and the projections for the next five years

- Edible oils
- Food stuffs
- Crude oil
- Chemicals (give details)
- Fertilizers
- General engineering items
- Other items

5.2 Exports

Indicate figures for the past five years and projections for the next five years

- Iron Ore
- Food stuffs
- General engineering items
- Miscellaneous

5.3 *Shipping Movement*

Nos. and types of ships loading/unloading per annum during past 5 years

- Upto 15000 tons displacement
- 15000 to 40,000 tons displacement
- above 40,000 tons displacement
- Maximum numbers in port at any time
- Secured alongside being serviced
- On waiting line alongside
- On waiting line at anchorage

6. Bunkering Facilities, Oil Residue Facilities and pipelines

6.1 *Bunkering Facilities*

- Give details of the bunkering facilities at the port.
- Define and explain the fuel cargo transportation system at the port
- Give details of the oil pipeline connection, if any, and the existing oil discharge facilities.
- Procedures adopted in issuing permits for bunkering and supervision during bunkering operations.

6.2 *Facilities for Reception of Oily Wastes from Ships*

(a) Type of facilities available in the port

- If fixed
 - Refinery
 - Tank storage terminal
 - Oily waste collecting and processing industry
 - Tank cleaning installation
 - Ore terminal
 - Other (describe)

-If mobile

| | No. of units | Capacity per unit (m ³) | Total capacity (m ³) |
|----------------------|--------------|-------------------------------------|----------------------------------|
| vessels | | | |
| road tankers | | | |
| rail wagons | | | |
| others (describe) | | | |

For both fixed and mobile facilities give each type of oily waste which the facility can receive, and indicate

- (i) the maximum receiving rate in cubic metres (m³) per hour,
- (ii) the maximum continuous throughput in cubic metres (m³) per hour and
- (iii) the charges (if any) applicable at the time of completion of the questionnaire.

(b) Dirty Ballast Water

- Maximum receiving rate m³/hour
- Maximum continuous throughput m³/hour
- Charges

(c) Tank Washings (Slops)

- Maximum receiving rate m³/hour
- Maximum continuous throughput m³/hour
- Charges

(d) Scale and sludge (from tank cleaning operations prior to docking)

- Any handling limitations (e.g, lifting gear, equipment, disposal etc.)
- Charges

(e) Oily Mixtures contaminated by Chemical Cleaning Agents

- Maximum receiving rate m³/hour

- Maximum continuous throughput m3/hour
- Charges

(f) Oil contaminated bilge water

- Maximum receiving rate m3/hour
- Maximum continuous throughput m3/hour
- Charges

- Whether fitted with IMCO Standard Discharge Connection Yes/No

(g) Sludge (from purification of fuel or lubricating oil)

- Maximum receiving rate m3/hour
- Maximum continuous throughput m3/hour
- Charges

- Whether fitted with IMCO Standard Discharge connection Yes/No

6.3 Additional information

l(a) If the discharge of "clean ballast" (as defined in the International Convention for the Prevention of Pollution from Ships 1973) is prohibited by national legislation, please indicate the receiving capability of "clean ballast":

- Maximum receiving rate m3/hour
- Maximum continuous throughput m3/hour
- Charges

b) Are there any restrictions in the use, of the facility, e.g. restriction as to user (tied facility) an embargo on contamination by certain chemical cleaning agents, restriction on type (s) of oil accepted? If so, please specify these in detail.

6.4 Planned Facilities

Information on enlarging existing facilities or constructing new facilities:

- Are there any plans to enlarge the existing capacity? If so, please indicate.

Are there new facilities planned? if so, please give the same particulars as requested for existing facilities and indicate when these new facilities are expected to be operational.

7. Hazardous Toxic and Dangerous Materials

Give details of toxic and dangerous materials handled by the port and their periodicity

- Chemicals
- Acids
- Gaseous
- Nuclear
- Any others

Also provide details of Disaster Management Plans for spills or accidents involving these materials.

8. Oil Pollution and Petrochemical Complexes

8.1 Estimated Inputs

Give the estimated inputs of petroleum hydrocarbons entering into the harbour and adjoining coastal waters from Marine transportation Offshore oil production Coastal oil refineries Industrial wastes Municipal wastes Urban run off River run off Natural seeps Atmospheric rain out

8.2 Corrective Measures

What corrective measures/arrangements exist in port for oil pollution in terms of:

- Limitation
- Prevention/containment
- Removal
- Final clean-up

8.3 Contingency plan

Do you have any contingency plan for major oil spillage at sea ? If yes, give details.

- Number and type of vessels
- Methods/techniques adopted

8.4 Reporting of Accidents

How do you report accidents involving spillage of oil at sea? (Attach proforma if so available)

8.5 Coordinating Agency

Is there any coordinating authority for pollution abatement in the case of oil spillage while lading/unloading, leakages from machinery/tanks and ship discharge etc., If so, give its composition, and functions.

8.6 Petro-chemical Complexes

Is there a petro-chemical complex near the port. If so, give

- Inputs/receipts
- Output/offtake
- Any pollution resulting from the operation
 - Liquid
 - Solid
 - Gaseous

9. Waste Disposal and Inventory of Upstream Pollution Sources

9.1 Effluents

(a) Estimates of effluents discharged from:

- Passenger vessels
- Merchant shipping
 - Crew
 - Cargo
 - Recreational boating
 - Commercial fishing
 - Crew
 - Gear
 - Military
 - Oil drilling and platforms
 - Catastrophes

(b) What quality standards are prescribed for treated effluents for port?

(c) Is any portion of the waste water proposed to be recycled.? If so, give details.

(d) How would it affect your operations if all your water intakes were down stream and all your effluents were to be discharged upstream of the port?

(e) Are there any stagnant waters in the closed basins of the harbour and docking area?

(f) Give details of the flushing arrangements made for the stagnant waters.

(g) What methods are proposed to be adopted for the handling and disposal of sludge from the treatment plants.

(h) Give characteristics of waste waters for:

- Industrial discharges
- Municipality discharges
- Stagnant waters
- Adjacent coastal areas

Upstream

Downstream

- Temperature
- pH
- Colour
- Odour
- Turbidity
- BOD, (Biological Oxygen Demand)
- COD (Chemical Oxygen Demand)
- Oil and grease
- Acidity total and pH
- Presence of heavy metals (Hg, Pb, Cd, As) and phosphates

(i) What other specific toxic substances are being discharged into the harbour waters.? Please specify the nature and its composition.

9.2 Solid Wastes

(a) What is the nature of solid wastes present at the port premises ?

- Flammable/non-flammable
- Lumps
- Granules
- Dust
- Slurry
- Sludge
- Toxic materials
- Others

(b) What are the quantities and methods adopted for the disposal of solid waste?

I

- Land fill
- Dumping
- Composting

-Incineration

(c) What is the amount of spillage from cargo handling operations ?

- On berth
- On board

(d) Can any portion of the solid wastes be recovered or re-utilised? if yes, give details.

(e) Would disposal of solid wastes create pollution of air, water or soil. If yes, please explain.

9.3 Sewage Treatment

(a) Provisions and state of sewage treatment plants(STP) on board ships approaching the harbour-area, annually during past 5 years.

- Fitted with STP
- Without STP

(b) Give the total quantity of waste water discharged per day from

- Port premises
- Shore-based industries-industrial wastes flowing into drains, nullahs, rivers or direct discharge.
- Land (raw or semi-raw sewage)
- Ships (raw sewage, garbage, contaminated bilge, oil leaks from machinery, tanks and oily ballasts etc)
- Port installations
- Sewage treatment plants
- Others

(c) What mechanisms are being adopted for the discharge of waste water at present from different sources:

- Separate streams
- Combined

(d) What is the type of treatment being given, if any, to the waste water. Give details and flow chart.

(e) What is the point of final discharge (to be indicated in the map)

- Land/agricultural land
- Sewer

- River
- Lake
- Bay
- Estuary
- Coastal/open sea

(f) What would be the impact of sewage discharge upstream of port ?

9.4 *Air Pollution*

(a) Indicate the existing estimates of emissions in the port area by way of burning fuel from

- Fixed installations
- Mobile vehicles

(b) What is the nature and composition of these emissions?

- Particulates
- Smoke/gases
- Sulphur Dioxide, Nitrogen Oxides, Hydrocarbons, Carbon Monoxide and others.

(c) Do you have any air pollution control systems at your premises? Give details (e.g. collectors, precipitators, scrubber etc.)

(d) What are the prescribed quality standards for gaseous emissions.

9.5 *Noise Pollution*

(a) What are the major sources and frequencies of noise in port premises ?

(b) Are safety levels specified for workers in different areas of port premises being exceeded ?

(c) If yes, then provide details of noise mitigation programme.

9.6 *Electro-Magnetic Transmission (Constant or Intermittent)*

Are there any transmissions from: (give details)

- Radar Stations
- Micro Wave links

9.7 *Thermal Pollution*

Give details of all cooling water discharges in/near port.

10. Accidents

10.1 What different types of accidents have occurred during the past 10 years in the port or can occur in shipping and harbour operations ?

(Give the exhaustive list of possible accidents like collisions, fire, sinking machine failure involving crane operations, navigation and communications, vessels carrying hazardous toxic cargo, corrosive materials, failure of power supply, sabotage, failure of harbour security and protection measures etc.)

10.2 What major accidents have occurred so far within 50 miles of the port ? Classify them in the following two broad categories:

- accidents involving shore based facilities
- accidents on and/or involving floating vessels.

10.3 What are the preventive measures taken so far to minimise such possibilities and combat the situation arising out of such accidents ?

10.4 What are the corrective measures available and organisation thereof ? Explain.

10.5 What has been the impact of accidents on the workers and the environment in the controlled area ?

10.6 What has been the impact of such accidents on the coastal population in the adjoining areas ?

11. Fire-Fighting/Emergency

11.1 Describe giving capability, manpower, readiness and other details of (separately for onshore and offshore)

- Clean-up facility
- Fire-fighting facility
- Any other

11.2 What are your plans for updating and improving the emergency facilities ?

11.3 What are your training and manpower development plans for optimal utilisation of above facilities ?

11.4 Describe the contingency plan in the event of natural catastrophe, enemy action/sabotage, operational failure/ negligence or equipment failure/malfunctioning.

11.5 Are such emergency plans being periodically tested, evaluated and improved upon by performing mock drills ? if so, with what frequency ?

11.6 Give the details of shore-based medical facilities for the workers and other concerned staff.

12. Port/Harbour Development Activities

12.1 Elaborate the proposed plan of action for the next ten years.

- 12.2 List out major equipment/ machinery being procured and/ or proposed to be acquired during the next ten years.
- 12.3 What development activities are being undertaken or approved for: - New construction -Reclamation - Extension and modernisation for Berthing Breakwaters Loading Unloading Storage Midstream anchorage Widening and deepening of channel Repairs Sanitation/sewage
- 12.4 What is your maintenance dredging load
- per annum
 - monthly (show variations)
- 12.5 What dredging equipment is used for this purpose by
- Dredging Corporation of India
 - Your own organisation
 - Any other private dredging firm
- 12.6 Please state the area of vegetative cover/agricultural land being affected by the proposed harbour/port development.
- 12.7 Please state the area to be reclaimed for port activities.
- 12.8 What are the major assets of the area
- Commercial
 - Industrial
 - Agricultural
 - Energy generation centres
 - Scientific institutions
 - Cultural such as historical monuments
 - Scenic places of tourist importance
 - Recreation etc. (Give details and refer to the map already asked for.)
- 12.9 Do you see any interlinkages with the on-going port/harbour development activities with the following:
- Change in migration pattern of the coastal population
 - Nucleation of population
 - Nucleation of facilities/services and institutional development
 - Social change life style, health, education, etc)
 - Employment pattern
 - Regional economy

(Please explain and give adequate data to support it)

13. Environmental and Biological Parameters

13.1 Environmental

Give the current figures for the following:

(a) Monthly Temperatures

- Ambient Air Temperature (normal and extremes)
- Sea surface temperature (normal and extremes)

(b) Monthly mean relative humidity (normal and extremes)

(c) Monthly wind speed:

- Mean value
- Prevailing direction
- Frequency distribution

(d) Monthly sea-level pressure

- Mean value
- Max observed

(e) **Monthly Visibility**

- Less than 1/2 N. Mile
- Less than 1 N. Mile
- Less than 2 N. Miles
- Less than 10N. Miles

(f) Monthly Waves-give the values of the wave heights experienced so far for the port area and the adjoining coastal waters .

- Mean Value
- Max Significant wave height
- Mean recurrence interval (wave period)

(g) Monthly Salinity

- Harbour waters
- Adjoining coastal waters

(h) Monthly Density

- Min Mean Max.

- Min Mean Max.
- Mean value for harbour waters
- Mean value for adjoining coastal waters

(h) Monthly rainfall

- Average annual
- Average monthly

(j) Fog

- During which months
- Occurrence in hours
- Percentage frequency

(k) Give the frequency and intensity of cyclones experienced so far.

(l) Tidal Information

- Tidal currents with directions at
- Flood
- Ebb

(m) Sediment Transport

- Pattern of littoral drift of sedimentary materials
- Silt deposition at the mouth of estuaries
- Natural patterns of erosion and deposition
- Seasonal changes of silt movement due to influx of fresh water
 - for Inflow waters
 - Outflow waters
- Shore and beach profile and its engineering features
- Properties of the shore and bed materials
- Breaker zones (if any) and their types Spilling Plunging Surging
- Breaker heights and their location at different tidal levels
- Wave refraction/, diffraction during different seasons due to breaker zones in the adjoining area.

(n) Seismic characteristics of the region.

(o) Fresh water influx

- Fresh water sources in the region
- Local currents due to influx of fresh water

13.2 Biological parameters

(a) Give the existing estimates and monthly variations for the following:

- Microbiological population
- Pathogenic bacteria
- Plankton distribution
- Fish spawning grounds, in the adjoining waters
- Commercial fisheries potential
- Vegetation including inter tidal
- Flora and fauna in the marine and estuarine environment

(b) Infectious water carried diseases

What is the incidence of following diseases among the port work force and neighbourhood?

- Gastro-enteritis
- Bronchial/asthamatic
- Skin rashes
- Eye trouble
- Any other abnormality

What is the quantity level of Hg in local fisheries?

- Average
- Minimum
- Maximum

Has tainting of sea floods ever been reported in or around the port?

14. Pollution Control set-up

14.1 Give details of pollution control set up presently in operation.

14.2 What improvement do you plan in the next five years?

14.3 What is the level of expertise of the person incharge of pollution control ?

14.4 How do you monitor the different kinds of pollution at present or propose to monitor in future.

14.5 What kind of interaction exists with other concerned bodies for pollution abatement Programme at the level of.

- Local
- Regional
- State
- Centre

14.6 What national/international legislation's, rules and regulations and stipulations of the Water Pollution Boards, have so far been enforced ? What are the future plans thereof?

14.7 What legal provisions are being followed/or proposed to be adopted for preventing environmental pollution and regulating toxic discharge in the harbour areas ?

15. Ship building and Ship Repair Activity :

- Is there any shipbuilding or ship repair activity in or near the port? If so, give details.

What is the impact of this activity on natural environment of the Port ?

- Is there any proposal for creation of ship building and ship repair facilities at the port ? If so, give details.

16. Self Assessment of environmental Impact:

Kindly give a resume of the Environmental Impact that the Port Trust and the environmental experts envisage, resulting from the proposed developmental project/expansion programme.

Place

Date

Name and Signature of the Competent Officer/authority

Note: The project authorities are earnestly advised in their own interest to provide complete information on points which they think are relevant to their proposal. Non-supply of required information may result in considerable delay in according environmental clearance.