

Jawaharlal Nehru port is committed to sustainable development and adequate measures are being taken to maintain ecological balance. The port has received many awards towards its green efforts. More than 40% area (ie. About 1480 hectares) of the port is under green cover including mangroves. The port's ecosystem consists of rich and diversified flora and fauna. To address the Global climate change problem at port level, the Port has proposed to take up much initiative to acquire "Green Port Status".

Port activity is mainly a combination of Sea side and land side traffic handling and involves continuous movement of Vehicles and ships. Vehicle and Ship movement are main polluters as far as green House gas emission is concerned. The port has ambitious development plans of increasing the ports capacity by another 5 Million TEUs in container handling and also to develop port based industries in the back up area The development activities and Port's core cargo handling activities are focused on sustainability measures targeting the **triple bottom line; i.e Ecological stability, Social aspects and Economic efficiency**. To achieve status of "A Green Port" the Port's Operational and developmental activities are aimed for:

- Enhancing Port's capacity in a sustainable way.
- Determining efficient management processes to reduce waste and emissions, conserve resources, and improve efficiencies and productivity
- Implementation of environmental safe guards in all operations in the port
- Reduction in effects of emissions of Green House Gases by continuing process of afforestation, Mangroves protection etc.
- Improving performance of energy related operations
- Switching over to use of Non conventional energy sources
- Introducing water and energy conservation plans
- Introduction of Diesel emission reduction programme
- Training and awareness
- Taking care of other integrated preventive measures including
 - ✚ Mapping of other emission and pollutants
 - ✚ Chemicals management
 - ✚ Disaster mitigation

The Port's environmental efforts for sustainable development

These development plans may bring environmental impacts on the port's environment. In order to develop the port in a sustainable way, Port's developmental plans are synchronized with the Coastal Zone Management and Land Use plans. The Coastal Zone Management Plan is based on the MoEF's CRZ notification 1991.

The JN Port's CZMP is complete in all respects and also meets the goals of the ICZM, viz

1. **Maintaining the functional integrity of the coastal resource systems**
2. **Reducing resource-use conflicts**
3. **Maintaining the health of the environment**
4. **Facilitating the progress of multi-sectoral development**

The CZMP of the port has been approved in the year 2005. Based on the approved CZMP the port has taken up various developmental plans. The projects are taken up after detailed Environmental Impact assessment and due approvals of the MoEF or MCZMA as per the applicability. The environmental monitoring is done during execution of the projects and compliance report is submitted to the concerned authorities.. Ambient water and air quality is being monitored by and corrective and preventive actions are taken.

Macro and micro monitoring of the Coastal Zone Management at the JN Port

The Port is monitoring the effects of its activities on the environmental parameters. This is being done on two levels i.e one on the Macro level and other on the Micro levels. The monitoring is further briefed as under.

A) Macro level monitoring

The macro level monitoring includes following aspects.

- i. Master planning of the port facilities with respect to the traffic forecast and identification of projects.
- ii. Environmental impact analysis, land use planning and finalisation of the location of the projects.
- iii. Finalisation of the Port's conceptual plan for future development.
- iv. The port's Integrated Management System (IMS), includes ISO-14001 Environment Management System.
- v. The IMS policy and the objectives also address the environmental concerns of the Port.
- vi. Obtaining statutory permissions like Consent to Operate from the State Pollution Control Board, is also a part of macro monitoring.

B) Micro level monitoring

The port further carries out environmental monitoring on actual site as a micro level monitoring. The Port has taken up many resources for this, which are as under.

- i. Obtaining environmental clearances for a project and monitoring of the pollutants during the execution of the project as per the approved Environmental Management Plan (EMP).
- ii. Continuous monitoring of the effects of the Port's working on the environmental parameters, to check the pollutant's level with respect to the EMP. This is in progress past more than 20 years.
- iii. Comparing the monitoring results with respect to the standards adopted in the EMP and Identification of the nonconformities.
- iv. Finalisation of the corrective and preventive actions to be taken to mitigate the non-conformities found. Inclusion of the necessary works for such mitigations.
- v. Provision of appropriate Budget allocations for execution of the works identified.
- vi. Maintenance of horticulture and arboriculture works. Maintenance of the existing green cover of the Port.
- vii. Plantation and related allied environmental works.
- viii. Implementing non-conventional energy sources applications in the port working, to reduce emission of the Green House gases.
- ix. Eco friendly techniques in its workings and environmental safeguard has remained the major policy of the port since inception.
- x. The private terminal operators of the Port keenly follow the good environmental practices in their working.

The macro and micro monitoring gives the actual environmental efforts taken at the ground level and also provides a long term data. This ultimately helps in analyzing the effects of the port's working and development on the environmental attributes.