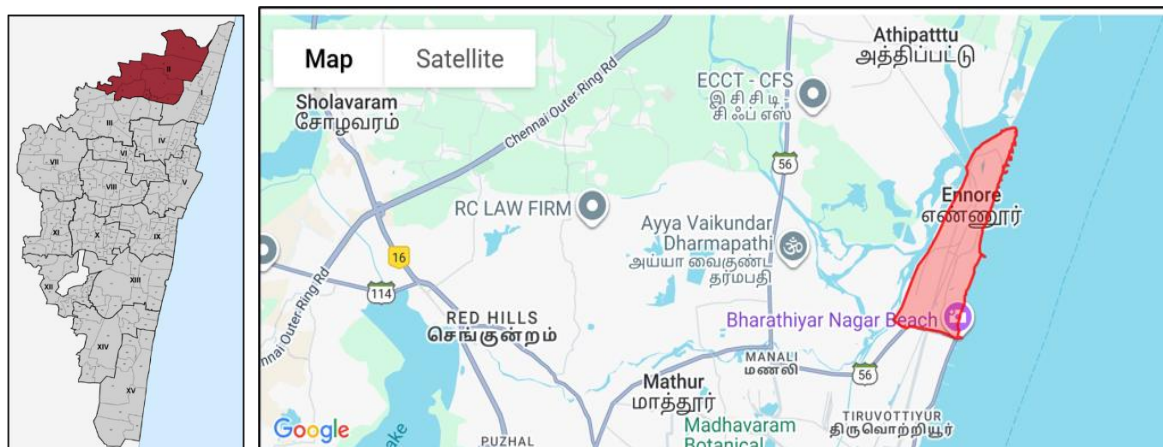


Five-Year Action Plan for the Manali-Ennore Region Under MERRC

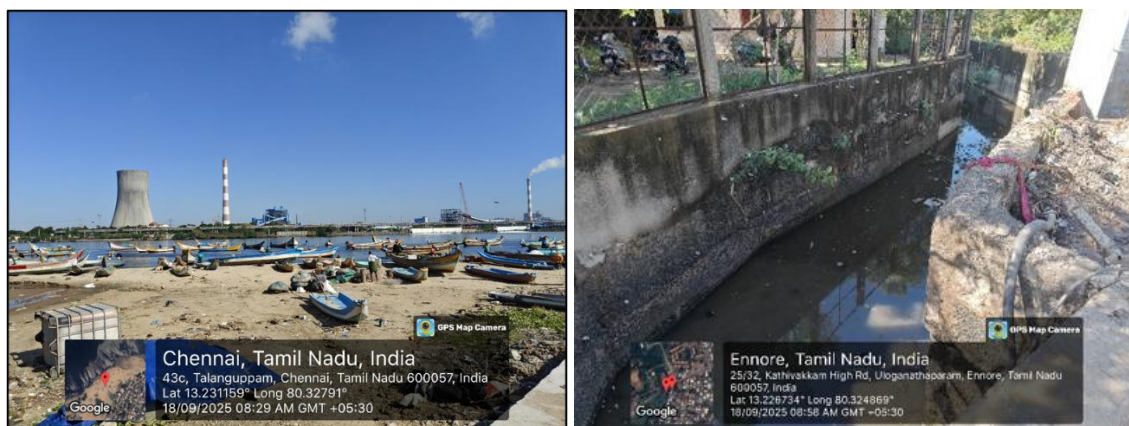
Background

The Manali–Ennore industrial corridor in North Chennai represents one of Tamil Nadu’s most important hubs of economic activity, while simultaneously being one of its most ecologically fragile and socially vulnerable regions. The corridor houses petroleum refineries, fertilizer and petrochemical industries, thermal power plants, ports, and associated infrastructure alongside dense residential settlements and ecologically sensitive ecosystems such as the Ennore Creek and wetlands. This backwater system, which covers nearly 9.2 km², provides vital ecosystem services: supporting mangroves and biodiversity, recharging groundwater, protecting against floods, and sustaining the livelihoods of thousands of fishing families.



Location Maps Manali Zone and Ennore Area

Over the last five decades, however, unregulated industrialization, fly ash deposition, effluent discharge, encroachments, and waste dumping have severely degraded air, water, and soil quality. These stresses have combined with the loss of wetlands to heighten the area’s disaster vulnerability. The 2015 floods, the 2017 Ennore oil spill, the 2023 ammonia leak, and the Cyclone Michaung-induced oil spill are reminders of the compounded risks that industrial pollution, ecological degradation, and climate change create for both communities and industries. For the fisherfolk and local residents, environmental decline translates directly into livelihood insecurity, health risks, and economic loss, further deepening social vulnerability in the region.





Manali–Ennore Restoration and Rejuvenation Council (MERRC)

In response to this chronic and multi-dimensional crisis, the Manali–Ennore Restoration and Rejuvenation Council (MERRC) was created in December 2024 by the Government of Tamil Nadu as a Special Purpose Vehicle (SPV) under the Companies Act, 2013. Structured as a not-for-profit Section 8 company, MERRC’s purpose is to provide an institutional mechanism that can plan, coordinate, and monitor ecological restoration and sustainable development in the region. MERRC’s establishment was triggered by the 2023 Ennore oil spill, but its mandate extends far beyond disaster response. It serves as a long-term coordinating platform that bridges governance, regulation, industry accountability, and community participation. Its areas of action include:

- Oil spill remediation and industrial pollution control (air, water, and hazardous wastes).
- Restoration of waterways, wetlands, and mangroves to revive ecological functions.
- Greening and dust control initiatives to improve air quality.
- Solid waste and wastewater management in coordination with local authorities.
- Community infrastructure and livelihood support projects, ensuring environmental justice.
- Emergency response readiness for industrial accidents and climate-induced disasters.

To deliver on this mandate, MERRC is guided by an eight-member Governing Board of senior Tamil Nadu officials.

Five-Year Action Plan Report

In this context, AquaMAP prepared the Five-Year Action Plan that outlines a roadmap to address the dual challenges of ecological restoration and social resilience in Manali–Ennore. It recognizes that safeguarding Ennore Creek and associated wetlands is not just an environmental imperative but also a social and economic necessity: protecting vulnerable communities, reducing disaster risks, and ensuring that industrial growth in the region can align with principles of sustainability and justice.

This is meant as a guiding document to help prioritize projects over the next five years. This report draws on government reports, scientific literature, secondary data, media sources, and field observations.



The report consists of 13 chapters:

1. Introduction & Background
2. Institutional Framework
3. Field Visits
4. Current Status of Restoration work
5. Infrastructure and Urban Services in the Manali–Ennore Area
6. Present Status of Waste Management in Ennore–Manali (North Chennai), Tamil Nadu
7. Disaster Preparedness and Multi-Hazard Risk Profile of Manali-Ennore Area
8. Carrying Capacity Assessment Needs
9. Recommended Action Plan: Short Term (0-1 Year)
10. Recommended Action Plan: Medium Term (1–3 Years)
11. Recommended Action Plan: Long Term (3–5 Years)
12. Financing the Restoration

13. Monitoring, Evaluation & Governance

14. Summary & Way Forward

Recommended Interventions

The plan identifies priority interventions across three phases: immediate actions within 0–1 year, systemic resilience measures over 1–3 years, and transformative interventions over 3–5 years. The recommendations are designed to balance ecological restoration, industrial sustainability, and social resilience, while establishing MERRC as a model institution for governance, monitoring, and citizen engagement in coastal-industrial regions. Through this report, we aimed to provide a practical roadmap that integrates scientific monitoring, governance mechanisms, and community participation, helping MERRC to safeguard Ennore Creek and associated wetlands, mitigate disaster risks, and promote sustainable development for the region's residents and industries alike.

Short-Term Plan (0–1 year): Laying the Foundation: The immediate focus is on actions that provide visible relief, mitigate pressing risks, and create the baseline for long-term recovery. Priority measures include:

- **Pollution Control:** Rapid installation of modular sewage treatment plants, enforcement of industrial emission standards, real-time monitoring of effluents, and dust suppression systems to address acute air pollution.
- **Waste and Drainage Management:** Desilting of canals and stormwater drains, clearing solid waste blockages, and intercepting untreated discharges to prevent flooding and health risks.
- **Disaster Preparedness:** Strengthening flood and cyclone emergency systems, installing early-warning mechanisms, and equipping local disaster response teams.
- **Community Health and Safety:** Medical camps, exposure screening for heavy metals, and occupational safety measures for workers and residents.

These interventions deliver immediate improvements in environmental quality and public health while embedding accountability mechanisms. They also prepare the groundwork for deeper structural changes in the medium term.

Medium-Term Plan (1–3 years): Building Systemic Resilience: The medium-term phase focuses on integrated infrastructure, ecosystem rehabilitation, and capacity building. Key actions include:

- **Water and Effluent Management:** Interception and treatment of 47 sewage outfalls, strict enforcement of zero-discharge norms, and deployment of real-time water quality sensors across creeks and wetlands.
- **Flood Mitigation and Stormwater Systems:** Rehabilitation of stormwater infrastructure, dredging of polluted creek beds, and construction of green buffers to absorb excess rainfall.

- **Ecosystem Restoration:** Large-scale mangrove rehabilitation, reforestation of mudflats and degraded wetlands, biodiversity enhancement, and establishment of ecological corridors.
- **Urban Greening and Air Quality:** Development of urban forests, roadside plantations, and industrial green belts to improve air quality and microclimate resilience.
- **Socio-Economic Strengthening:** Training programs to develop green livelihoods such as mangrove restoration, waste recycling, and eco-tourism services.
- **Institutional and Planning Frameworks:** Preparation of a comprehensive masterplan integrating industrial expansion with ecological thresholds and disaster resilience.

This phase transforms emergency fixes into systemic resilience measures, ensuring that environmental recovery is durable, enforceable, and economically inclusive.

Long-Term Plan (3–5 years): Towards Sustainable Transformation: The long-term vision is to reshape the corridor into a resilient, ecologically balanced, and socially inclusive coastal-industrial hub. Major priorities include:

- **Catchment and Wetland Restoration:** Protection and rejuvenation of Ennore Creek, restoration of degraded catchments, and eco-engineering of coastal protection structures.
- **Enforcement and Compliance:** Strict adherence to the regional masterplan, long-term monitoring of industrial emissions, and institutionalization of independent audits.
- **Sustainable Infrastructure:** Development of eco-friendly housing, model fishing villages, upgraded transport networks, and modernized civic infrastructure.
- **Community Development:** Construction of a multi-specialty hospital, educational institutions, cultural hubs, and recreational spaces to improve social well-being.
- **Economic Diversification:** Promotion of eco-tourism circuits, community-based fisheries management, and cultural heritage initiatives to broaden livelihood opportunities and reduce dependence on polluting industries.
- **Resilience to Climate Change:** Integrating climate adaptation into urban planning, including rainwater harvesting, renewable energy integration, and flood-resilient design standards.
- The long-term plan represents a shift from restoration to transformation—embedding sustainability and resilience into every layer of regional development.

The Unifying Thread

Governance, Transparency, and Participation: Across all three phases, the Action Plans stress that ecological recovery cannot be achieved through technical interventions alone. Effective governance, transparency in implementation, and active citizen participation are the cornerstones of success.

MERRC provides a platform that unites state agencies, local bodies, industries, and communities under a shared mission of environmental rejuvenation. Independent audits, real-time data, and citizen science initiatives ensure accountability, while traditional ecological knowledge and community organizations ground the process in local realities.

A Model for Other Coastal Industrial Belts

The MERRC framework is more than a localized initiative. It offers a replicable model for other coastal industrial belts in India, where the pressures of pollution, industrialization, flooding, and livelihood vulnerability converge. By sequencing urgent, systemic, and transformative actions, and by embedding inclusive governance, MERRC demonstrates how industrial regions can reconcile ecological recovery with socio-economic growth. It shows that restoration is not merely about repairing damage, but about reshaping futures where communities, ecosystems, and industries coexist sustainably.