

Integrating ecosystem services inclusive-SEA & Ramsar guidelines of biodiversity for the sustainable future of Sewri wetlands in India



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Outline of the Presentation

Introduction

- Wetlands Ecosystem, Ramsar Convention, Study Area

Aim

Methodology

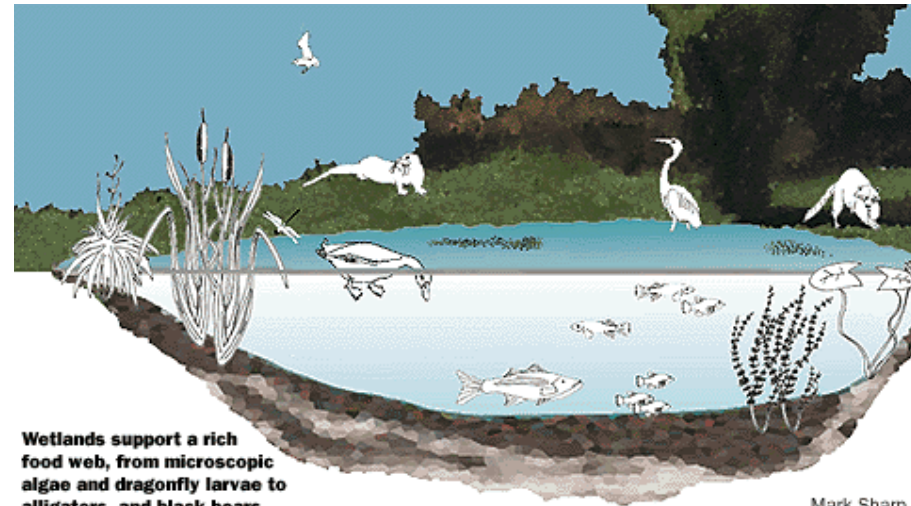
Results

ES inclusive SEA Framework, Discussions

Conclusion

Wetlands Ecosystem

- Transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by the shallow water.’ (Ramsar COP, 2007)
- More than 50% of the wetlands in the world have been destroyed due to changes in lands use and various socio-economical factors. (Finlayson et al., 2005)



Ramsar Convention

- ❖ The richness and usefulness of the wetlands was first brought to the notice of the world by a convention on wetlands held in Ramsar, Iran in 1971.
- ❖ The only global convention focussing attention on wise-use of wetlands ecosystem.
- ❖ Till date, 161 countries are part of this International treaty including India.

'Wise use' = sustainable use of wetlands and their resources
for the benefit of humankind

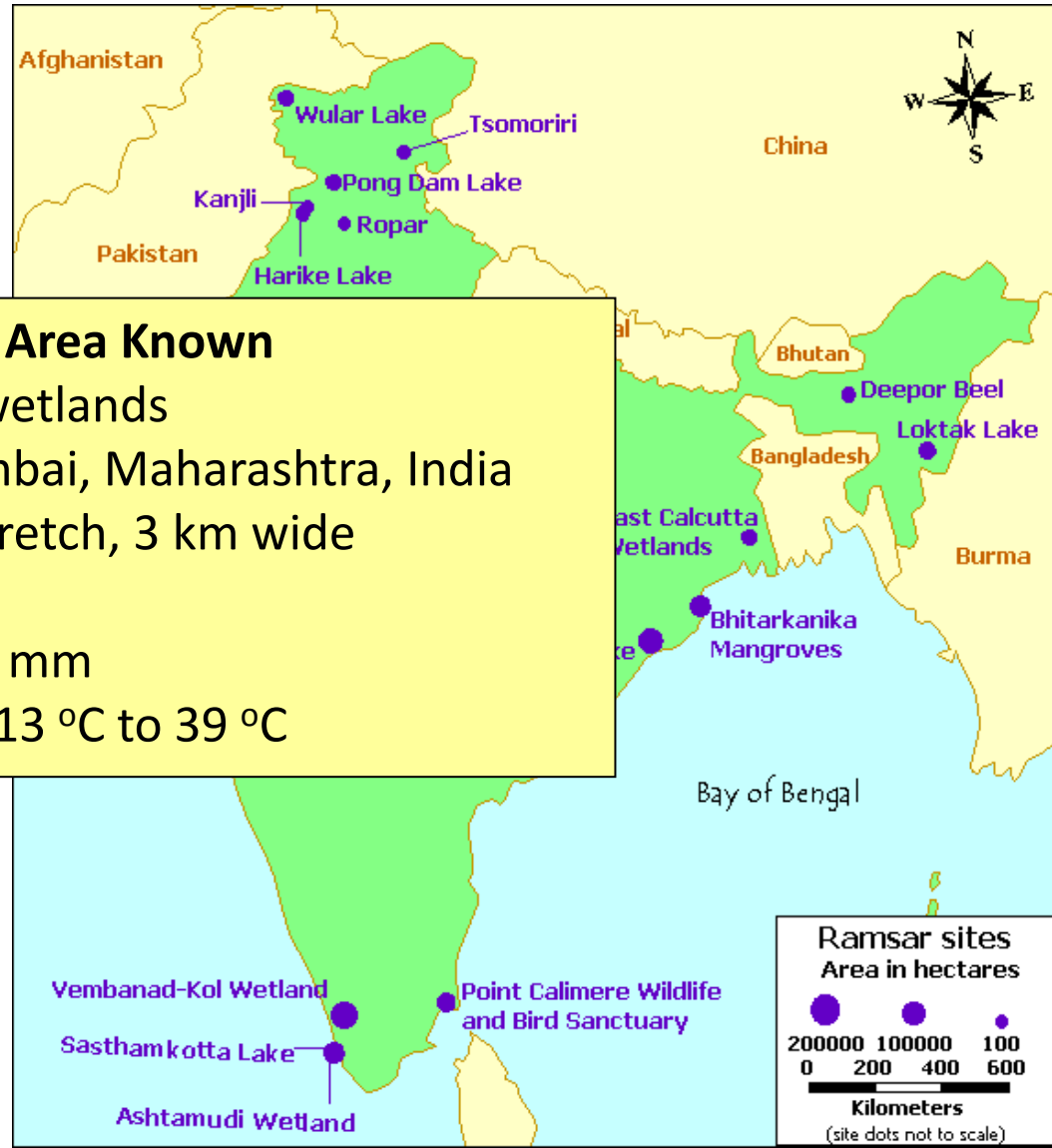
(Ramsar COP3, 1987)

Importance of Coastal Wetlands: India

- India has 8300 km long coastline which covers about 83,000 sq km of biogeographic zone or 2.52% of the total land surface of India (Rodgers et al., 1995)

- Western Coast of India has several important wetlands which are remain neglected

- Sewri wetlands located on Western coast near Mumbai are among the neglected coastal wetlands.

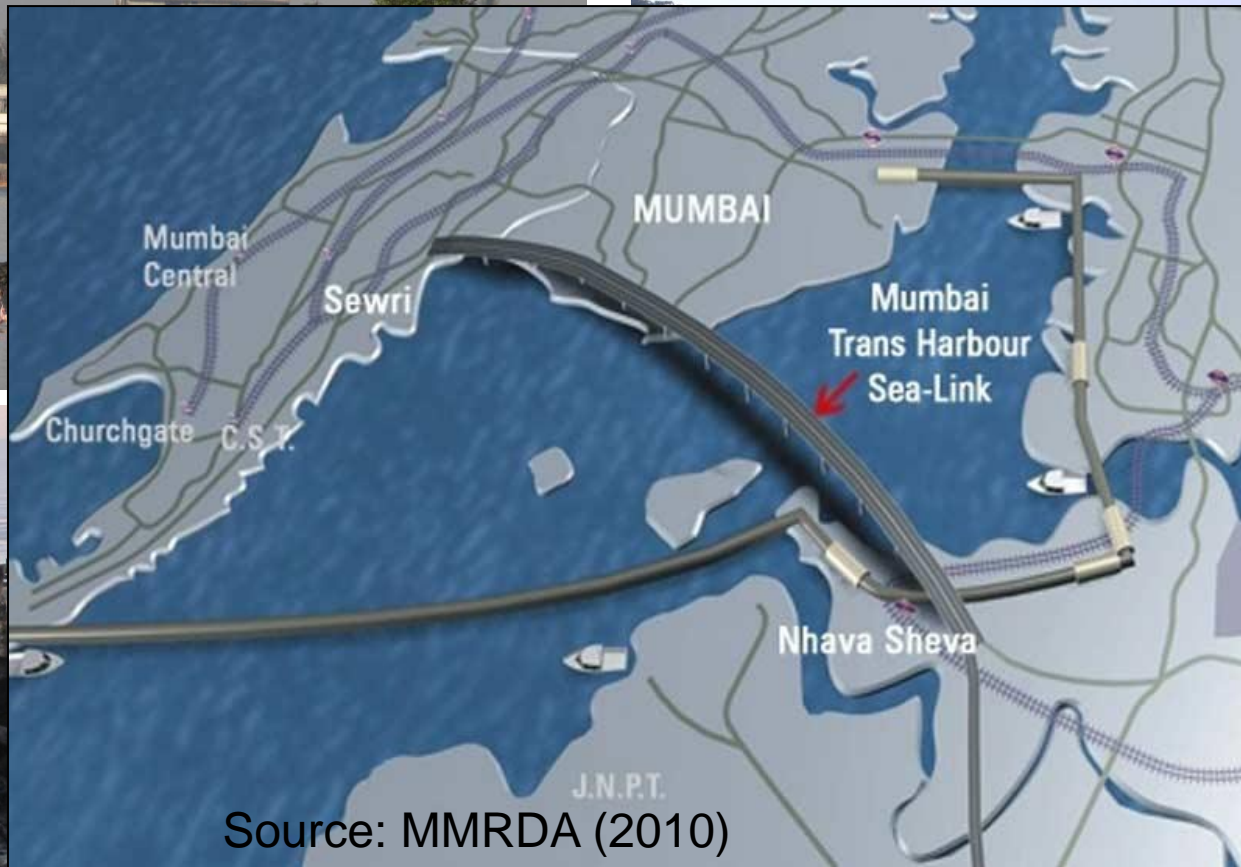
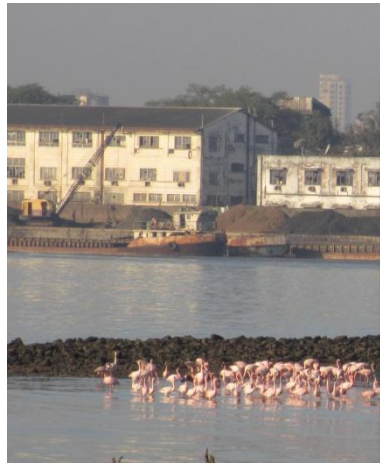


Study Area: Sewri Wetlands





Stress on Sewri Ecosystem



Environmental Assessment Tool: SEA



Overall Aim of the Study

This study aims at:

- Introducing SEA concept in an Indian context and integrating it with Ramsar convention through a case study.
- Developing a framework to include the importance of biodiversity and ecosystem services assessment in SEA.

Methodology

Phase 1: Pre-field visit phase

Literature review, Identifying and reviewing relevant policy documents, Stakeholder analysis

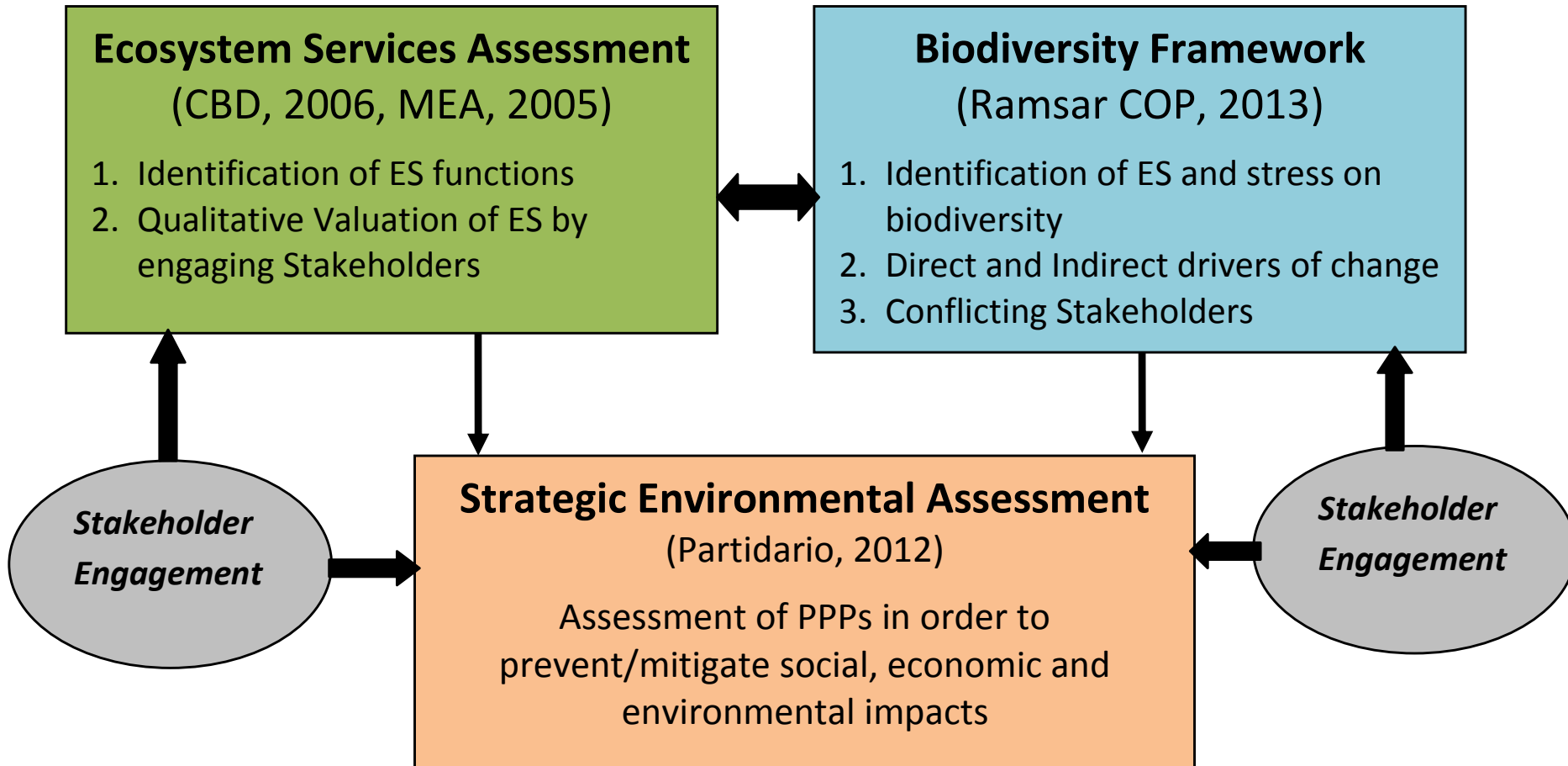
Phase 2: Field visit

Visiting Sewri wetlands, Interviewing local and regional stakeholders (semi-structured), Baseline data collection

Phase 3: Data Analysis

Using theoretical framework of ecosystem inclusive SEA (Partidario, 2007)

Ecosystem inclusive SEA Framework



Ecosystem Services (ES) Identification

Provisioning



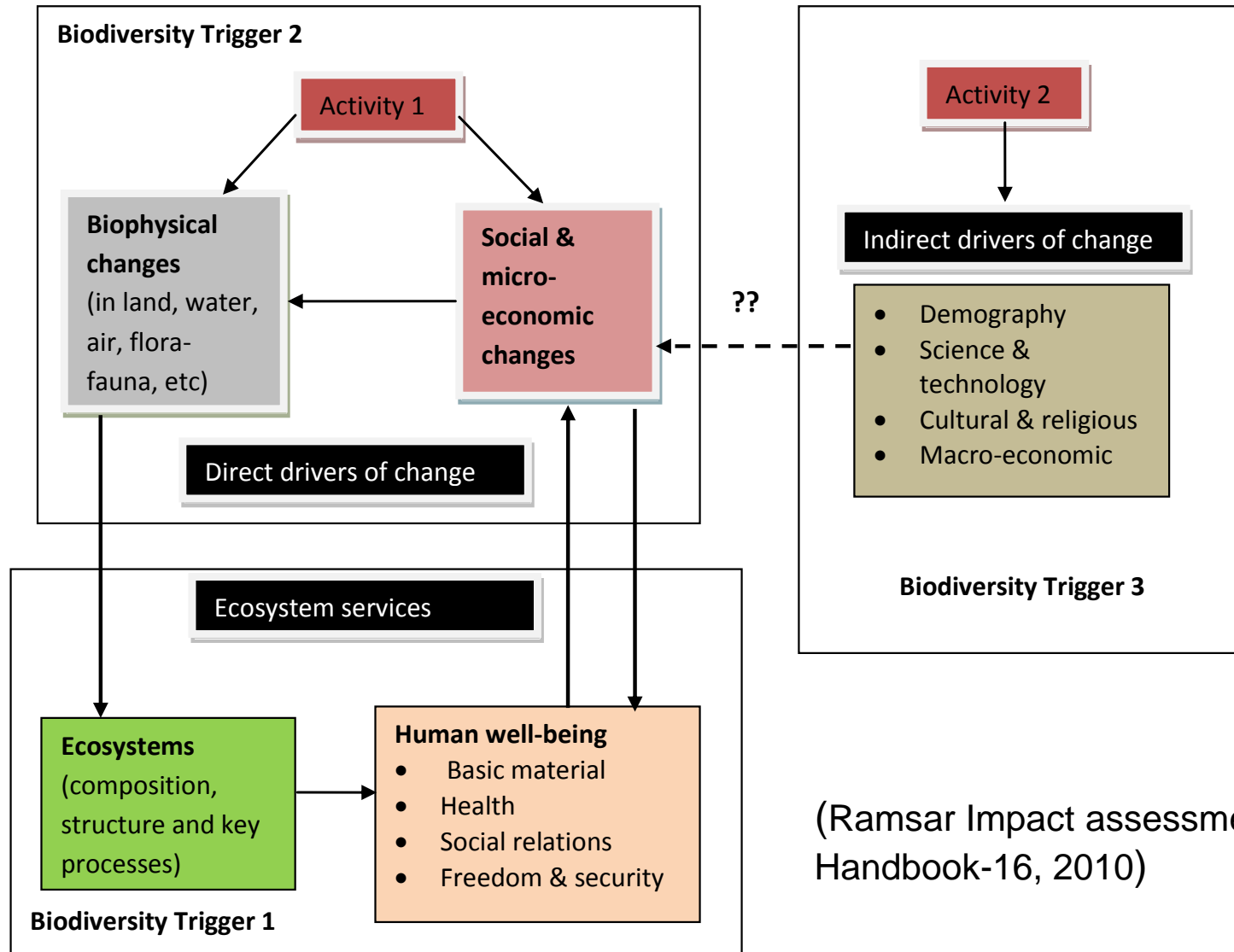
Regulating



Cultural



Biodiversity Framework: Ramsar Convention



Biodiversity Framework: Direct Drivers

Abandon ship recycling yard, local industries, slums, infrastructural changes, port activities, Lorry parking, etc

Activities with Physical Change

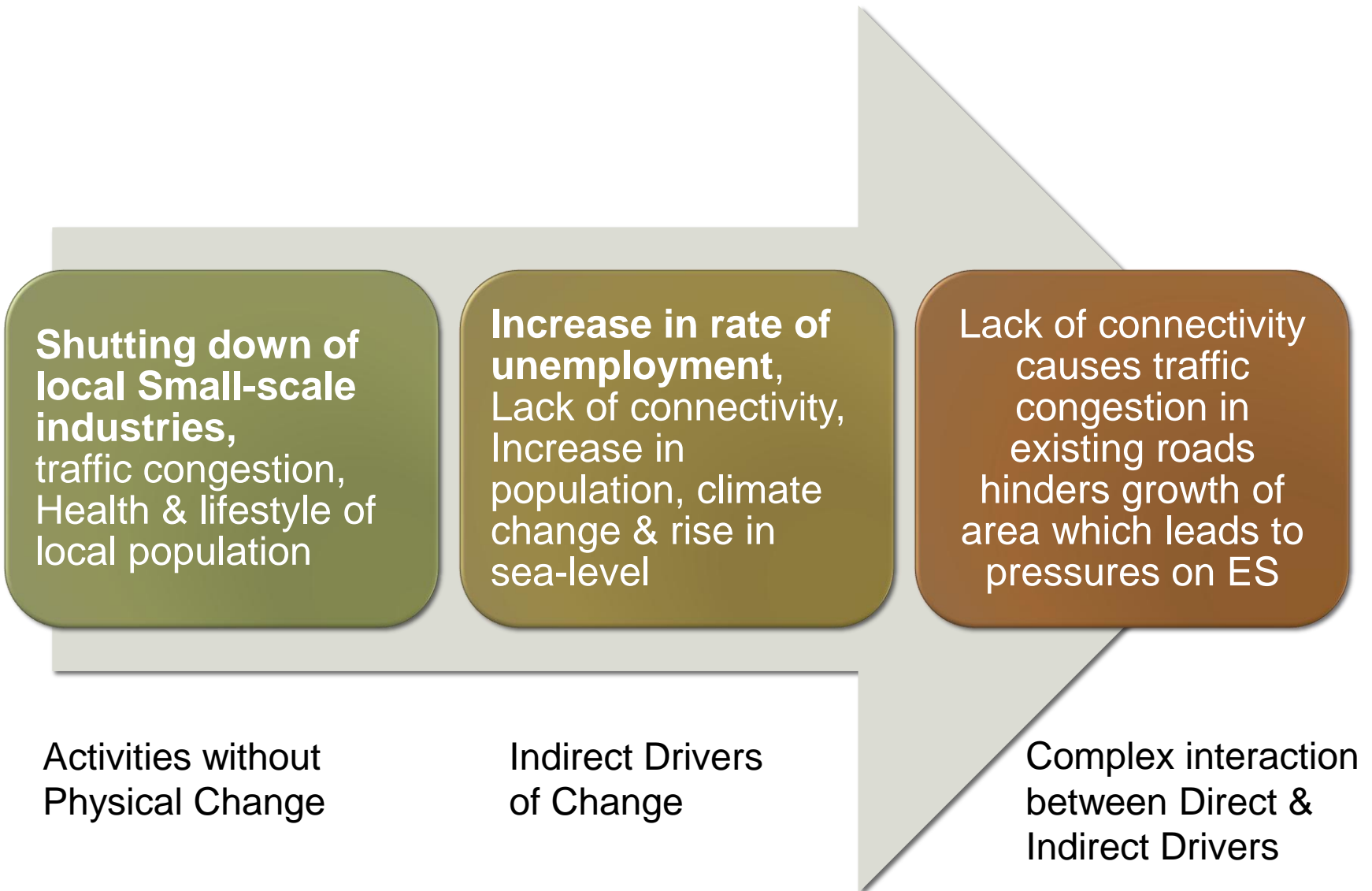
Hot water, polluted effluent discharge, sewage and domestic wastes, overexploitation of fishery, poaching of birds, etc

Direct Drivers of Change

Bioaccumulation of heavy metals, eutrophication, alarming pollution levels, loss of mangrove cover and bird habitats, loss of landscape, etc

Impact on ES

Biodiversity Framework: Indirect Drivers



SEA Process: Sewri Case Study

Setting the Context

- Baseline Description
- Stakeholders mapping and engagement
- Strategic Reference Framework

Strategic Pathways

- Critical Decision Factors (CDF),
- Assessment Criteria.
- Strategic pathways

Follow-up Guidelines

- Monitoring guidelines
- Compulsory Recommendations

CDF: Strategic Options (1/3)

Ecological Ecosystem

- Exact mapping, inventory and monitoring of bird habitat, populations & mangrove belt
- Patrolling of Wetland
- Mangrove plantation, Improved governance by sharing responsibility, Flushing of tidal water
- Stricter monitoring and control over point & non-point sources, Regular management of domestic waste and sewage
- Risk assessment study, restoration and rejuvenation of wetlands to mitigate existing loss

Strategic Options..

(2/3)



Socio-cultural Development

- Establishment of Watchtowers, Conservation of Sewri Fort
- Improve Accessibility
- Organize Nature trails, boat rides, development of ecological park near Sewri wetlands
- Organize and promote events explaining the importance of wetland ecosystem

Strategic Options..

(3/3)



Economic Development

- Efforts to protect local small scale industries
- Eco-tourism & Opportunities to promote alternative livelihood means for local fishermen
- Management of lorry and truck parking area
- Allocate grants for mangrove and bird life research

Discussion

(1/2)

- **Governance and management** practices for Sewri wetlands needs to be resolved by **sharing the responsibility of ownership**.
- **Point and non-point pollution sources** destroying the wetlands ecosystem needs immediate attention.
- Environment, biodiversity and wetlands protection acts are well in place in Indian context, however, pollution levels in Sewri revealed the fact of **inefficient regulatory response** and **weak monitoring measures**.

Discussion

(2/2)

- The **persistence** of pollutants from abandon ship recycling yards poses threats of **bioaccumulation** in the wetlands ecosystem.
-
- The recent EIA for proposed MTHL Sealink project was **not focused on ecosystem services and the impacts on biodiversity** were seen to be critically neglected.
- **Integration** of procedures from three assessment methods in the ES inclusive-SEA framework promotes comprehensive understanding about **complex interactions between direct and indirect drivers** of change.

Conclusions

- Ecosystem services identification and valuation engaging stakeholders proves **critical for the in-depth understanding of ecosystem.**
- Aid to **decision-making** for **vulnerable** and **important** ecosystems
- **Tiering** of Environmental assessment tools needed to be done with the special focus on ecosystem services to achieve sustainable development plans.
- This methodology **can be adapted elsewhere** to achieve sustainable future for any area aiding important and vulnerable ecosystem.

Thank You!!!



Questions???