

ESPA Deltas Overview

What are Ecosystem Services?

Ecosystem services are the benefits that humankind receive from ecosystems. These services are important for human well-being, and may be especially significant for the poorest who have limited options and choices.

Why deltas?

Deltas form where river sediments and nutrients are deposited in the sea. Globally these areas support 500 million people reflecting the rich ecosystem services of these areas. These include the supporting services of nutrient recycling, the provisioning services of agriculture and fisheries, the regulating services of protection provided by mangroves and the cultural services of ecotourism. Global (e.g. climate change), regional (e.g. catchment management) and local drivers (e.g., subsidence and land use change) are threatening these ecosystem services and their ability to support human well being.

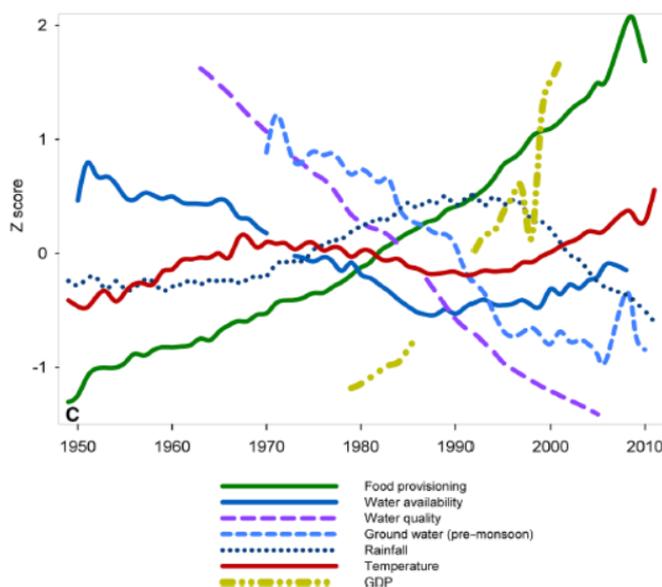


Figure 1 - Historical trends and trade-offs. Provisioning services have increased, but regulating services have declined – this cannot continue.

Overview

- Generated new information, knowledge and tools for supporting decision making.
- Holistic and integrated analysis of current conditions and future change.
- Supported the development of cross sectoral policy and implementation programs.
- Tools are flexible and can be adapted to incorporate new information and understanding of the future.
- Engagement across government, institutions, scales and sectors.

Goal of ESPA Deltas

To provide policy makers with the knowledge and tools to enable them to evaluate the effects of policy decisions on ecosystem services and people's livelihoods in coastal Bangladesh.

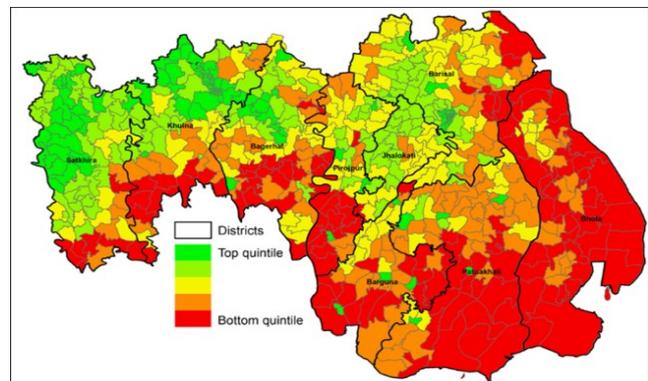


Figure 2. Asset-based poverty map. The coastal fringe appears to contain the poorest people reflecting a combination of high salinity, higher exposure to combined impact of riverine and coastal floods and lower access to economic assets such as towns, road networks, health and education facilities.

To find out more please contact;

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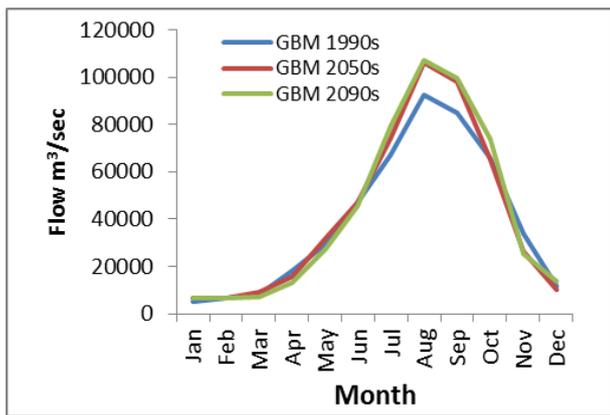


Figure 3 – Change in river flows diagram. River flows may increase, especially in the monsoon

Implications

Implementation of policy choices heavily dependent on governance quality across sectors and scales;

- Governance is one of the main factors influencing translation of ES into benefit
- Transboundary governance context crucial for managing resources at national level
- Salinity has been statistically associated with poverty.
- Migration is often not an option for the very poor, who may be left behind.
- Models show an increase in monsoonal and coastal flooding.
- Ecosystem services are utilized disproportionately by the poor.

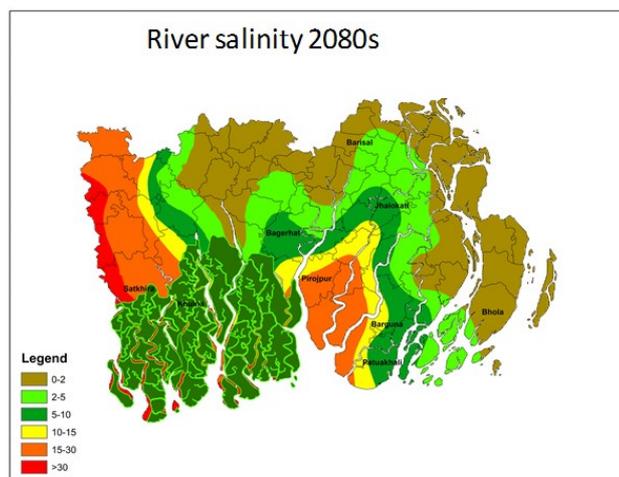


Figure 4 - Salinity map for 2080. As a result fluvial flooding may increase during the high flows. At the same time, under low flows sea-level rise will raise salinity during the dry season.

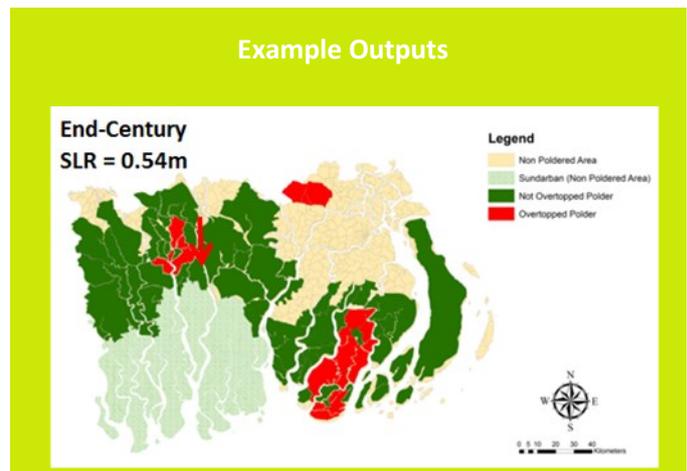
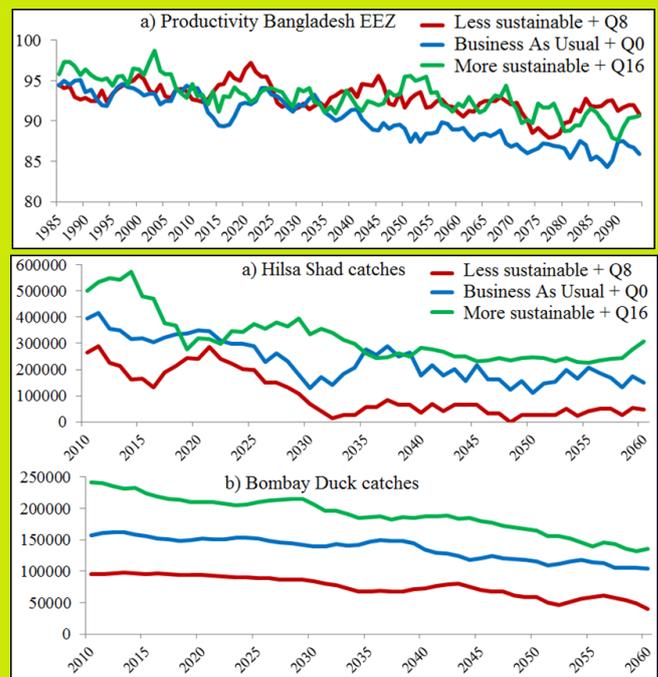


Figure 5 – Fluvial tidal flooding map

Figure 6. (below) Climate change and over-fishing could cause long term decline in fisheries, but good management can counter this



- Climate change is projected to decrease fish production in Bangladesh EEZ by up to 10%.
- These impacts are larger for the two major species (hilsa shad and Bombay duck)
- Over-fishing combined with climate change could reduce Hilsa catches by up to 90% by 2050.
- Good management can achieve higher catches in the more sustainable scenario.