espa Deltas
ecosystem services for poverty alleviation

Linking Science to Policy in the Bangladesh Coastal Zone

ESPA Deltas: Assessing Health, Livelihoods, Ecosystem Services and Poverty Alleviation in Populous Deltas

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Background

The Ecosystem Services (ES) of river deltas, such as the coastal zone of Bangladesh, supports high population densities, with some 50% of the Bangladesh population (80 million people) living within 10m of mean sea level. Deltaic coastal zones constitute highly dynamic socio-ecological systems which are sensitive to local, regional, and global drivers of change. As these systems are coupled, policy makers are increasingly asked to consider an integrated approach to the socio-economic, environment, cultural and macro-economic development issues. The decisions made today regarding, livelihoods, investment and the response to anthropogenic changes, such as water resource management and climatic change, will influence the lives of millions for the foreseeable future.

Integrated Modelling and informing Policy Options

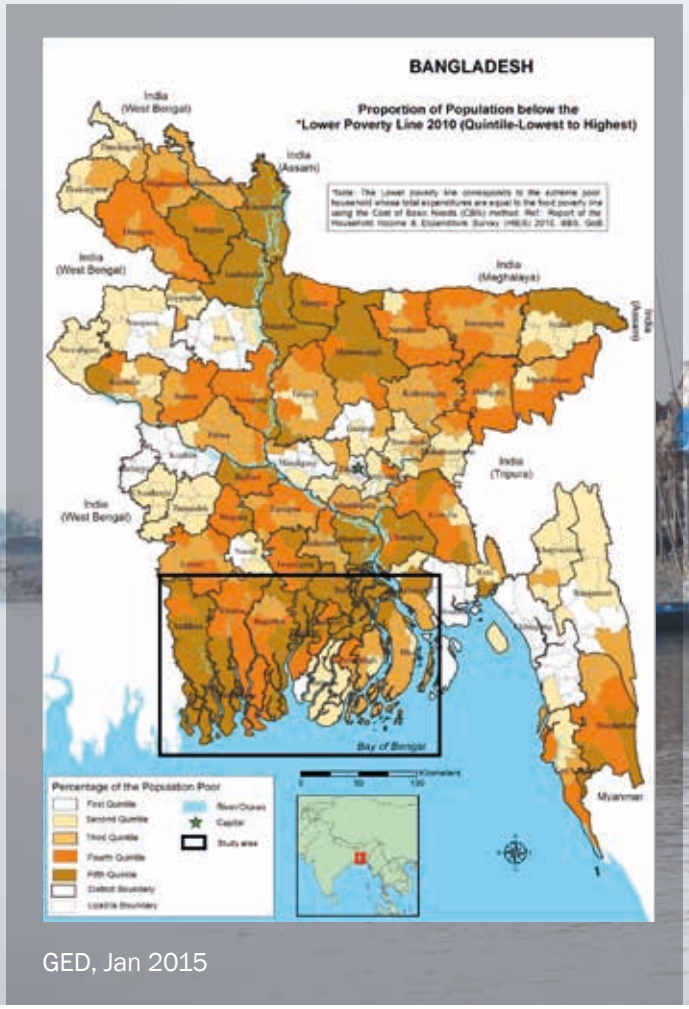
ESPA Deltas aims to provide policy makers with the knowledge and tools to enable them to analyse the effects of policy decisions on people's livelihoods, and the land, water and agricultural/aquaculture/fisheries systems which underpin them.

ESPA Deltas has:

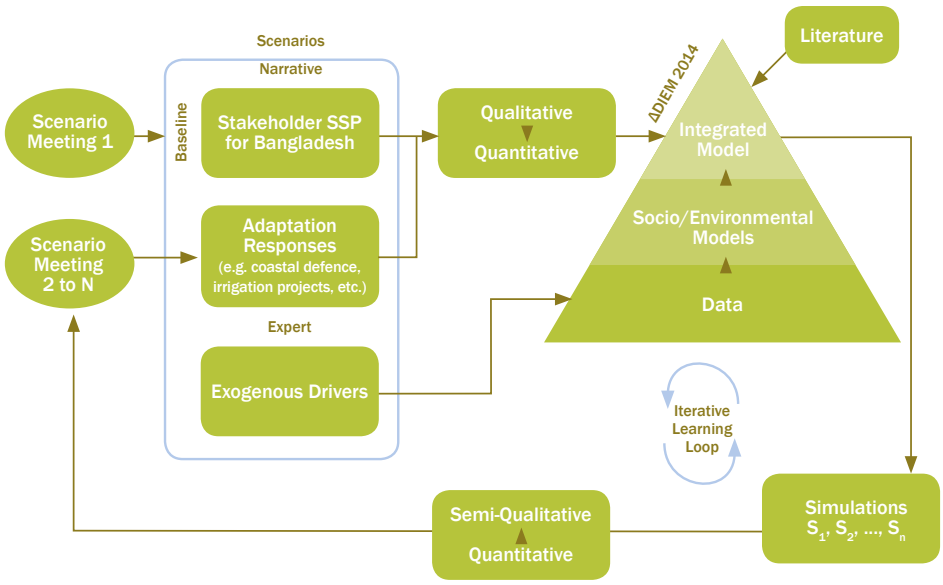
- Developed an integrated socio-environmental model of coastal Bangladesh called ΔDIEM - Delta Dynamic Interactive Emulator Model – which addresses
  - Environmental change (including climate, sea level, subsidence and salinity changes)
  - Demographic change
  - Ecosystem Services (including agriculture, aquaculture, fisheries and mangrove)
  - Rural livelihoods and poverty
  - Governance analysis
- Conducted a range of detailed socio-economic, biophysical and stakeholder analyses of coastal Bangladesh, Bangladesh and the surrounding regions.
- Used these analyses to develop appropriate modules for ΔDIEM
- Simulated a series of plausible future states for coastal Bangladesh using ΔDIEM and scenarios developed with a large Bangladeshi stakeholder group
- Established a protocol for decision makers to test and explore different policies and combination of policies against a range of possible futures
- Encouraged interaction between sub-national, national and international experts and the practical needs of policy analysis and decision making

Quantification of links between poverty and ecosystem services

Outputs



GED, Jan 2015



Policy Linked Iterative Learning Loop – Stakeholders are contributing at all points

To Find out More

The ΔDIEM tool is an open source platform with technical support provided by BUET. The project and its government and civil governance supporters invite you to engage with the process of deciding the future of the Bangladesh coastal zone by contacting:

Dr. Md. Munsur Rahman

Professor, Institute of Water and Flood Management (IWFM) Bangladesh University of Engineering and Technology (BUET) Dhaka 1000, Bangladesh

Email: mmrahman@iwfm.buet.ac.bd; munsurbuet1989@gmail.com

Skype: professor.munsur

Cell: +8801552399905

Model integration of biophysical and socio-economic sciences

An evidence base for the policy cycle

Transferability methods for other populous deltas

Tools for decision makers

Project Partners

UK

University of Southampton
University of Oxford
University of Exeter
National Oceanography Centre
Plymouth Marine Laboratory
University of Dundee
Met Office/Hadley Centre

Bangladesh

Bangladesh University of Engineering and Technology (BUET)
Bangladesh Institute of Development Studies (BIDS)
Institute of Livelihood Studies (ILS)
Ashroy Foundation
International Centre for Diarrhoeal
Disease Research, Bangladesh (ICDDR,B)
Center for Environmental and Geographic
Information Services (CEGIS)
Bangladesh Agricultural University (BAU)
Bangladesh Agricultural Research Institute (BARI)
Technological Assistance for Rural
Advancement (TARA)
International Union for Conservation of Nature (IUCN)
Dhaka University

India

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