

GLOBAL SYMPOSIUM ON SALT-AFFECTED SOILS

20 - 22
October, 2021
Virtual meeting

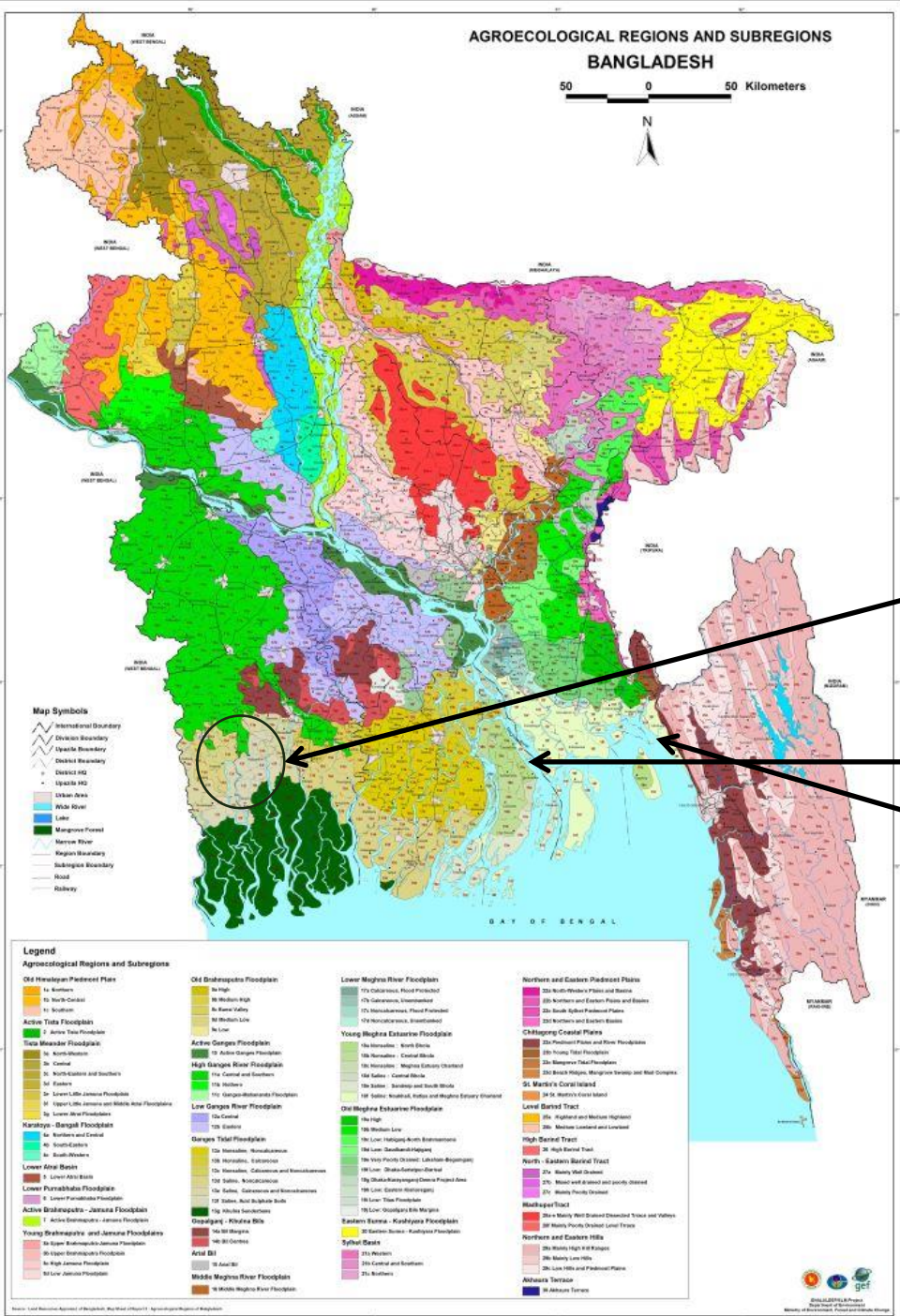
Bangladesh Coastal Region: Sustainable Land Management (SLM) Best practices

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Bangladesh Coastal region

- **47,201 Sq Km, 32% of land area**
- **147 sub-district of 19 districts of three divisions**
- **Approx. 33.85 m, 27% of total population**
 - *Bangladesh Bureau of Statistics (BBS), 2011.*



Bangladesh Coastal region

Ganges Tidal Flood plain (AEZ-13)- *Covers larger part of Coastal region & Study area.*

There are two other AEZ regions in the coast

Young Meghna Estuarine Floodplain (AEZ-18)

Chittagong Coastal Plain (AEZ-23)- a minor part

Characteristics of Ganges Tidal Floodplain:AEZ-13

❖) Constraints/limitations

- ❖ Mixed Tidalic and Gleyic (with some Eutric Gleysols)
- ❖ Heavy textured sub-soils
- ❖ Salinity in dry season
- ❖ Water logging
- ❖ Poorly to very poorly drained
- ❖ Single cropped (Oryza Sativa)
- ❖ Shrimp & salt
- ❖ Land use conflict among shrimp, salt & Agriculture
- ❖ Conflict of interest in resource usage: large absentee owners
- ❖ Natural hazard

❖) Agricultural Potentials

- ❖ An extensive area of tidally flooded land
- ❖ Smooth relief
- ❖ Farmers innovation-vegetables production
- ❖ GO/NGO intervention- soil health improvement, integrated/community approach
- ❖ Tidal River Management
- ❖ Landscape change
- ❖ Agro/social forestry
- ❖ Tree plantations along embankment and dykes

Characteristics of Young Meghna estuarine Floodplain:AEZ-18

❖) Constraints/limitations

- ❖ Mixed Eutric and Calcaric Fluvisols (with some Eutric Gleysols)
- ❖ Medium textured
- ❖ Salinity in southern parts
- ❖ Water logging
- ❖ Poorly drained
- ❖ Inadequate surface & ground water for irrigation
- ❖ Conflict of interest in resource usage
- ❖ Natural hazard

❖) Agricultural Potentials

- ❖ Young Alluvial land
- ❖ Smooth relief
- ❖ GO/NGO intervention- soil health improvement, integrated/community approach for intensification of Agriculture
- ❖ Agro/social forestry
- ❖ Tree plantations along embankment and dykes

Characteristics of Chittagong Coastalplains:AEZ-23

❖) Constraints/limitations

- ❖ Compound unit of piedmont, river, tidal and estuarine floodplain landscapes
- ❖ Mixed Thionic Gleysols & Gleyic Fluvisols (with some Eutric Gleysols)
- ❖ Medium textured
- ❖ Salinity along shore line
- ❖ Poorly drained
- ❖ Inadequate surface & ground water for irrigation
- ❖ Conflict of interest in resource usage
- ❖ Natural hazard

❖) Agricultural Potentials

- ❖ Young Alluvial land
- ❖ Smooth relief
- ❖ GO/NGO intervention- soil health improvement, integrated/community approach for intensification of Agriculture
- ❖ Agro/social forestry
- ❖ Tree plantations along embankment and dykes

Sustainable Land Management

The use of land resources, including soils, water, animals and plants, for the production of goods to meet changing human needs, while simultaneously ensuring the long-term productive potential of these resources and the maintenance of their environmental function- UN

The adoption of land-use systems that through appropriate management practices enable land users to maximize the economic and social benefits from the land while maintaining or enhancing the ecological support functions of the land resources- TerrAfrica

SLM based on four principles

Targeted policy and institutional support, including the development of incentive mechanisms for SLM adoption and income generation at the local level

Land-user-driven and participatory approaches

Integrated use of natural resources on farms and at the ecosystem scale

Multilevel, multi-stakeholder involvement and partnerships at all levels – land users, technical experts and policy-makers

Characteristics of SLM

- **Maintain or enhance productivity**
- **Reduce the level of production risk**
- **Protect natural resources**
- **Increase farm production**
- **Community involvement**

Methodology of SLM documentation

Questionnaire on Sustainable Land Management (SLM) Technologies (QT), 2019 edition

Contents of QT

- General information
- Description of an SLM Technology
- Classification of the SLM Technology
- Technical specifications, implementation activities, inputs, and costs
- Natural and human environment
- Impacts and concluding statements
- References and links
- ANNEX

Focused on: Adoption of soil salinity in dry season and waterlogging in monsoon

Results

- Slightly to moderately saline area AEZ-13a &13b (Khulna District)
- ✚ Integrated homestead farming in slightly saline area.
- ✚ Rain water harvesting in saline area.
- ✚ Changing cropping pattern to increase cropping intensity in slightly saline area.
- ✚ Modifying landform to grow rice-fish and vegetable in saline area.
- ✚ Involvement Women in large scale vermin compost production at villages of Batiaghata sub-district.
- ✚ Adoption of Climate resilience vegetable farming in slightly saline area.
- ✚ Usage of cut-off river water to increase cropping intensity in saline area.
- ✚ Raising Community seedbed to facilitate quality seed for boro rice in coastal region.
- ✚ Tree plantation to protect embankment/dykes.

Focused on: Adoption of soil salinity in dry season and waterlogging in monsoon

Results

- ✚ Strongly saline area AEZ-13b (Satkhira district)
- ✚ Commercial crab (*Scylla serrata*) cultivation in strongly saline area
- ✚ Mele (*Bolboschoenus maritimus*) cultivation by less privileged community in strongly saline area
- ✚ Tower gardening in saline and intermittently shallowly flooded areas in coastal region
- ✚ Vegetable with rice and fish in moderately saline area
- ✚ Transplanted aman rice (*Oryza Sativa*) and golda shrimp (*M. rosenbergii*) /white (common) fish cultivation.

Integrated homestead farming in slightly saline area



Modifying landform to grow rice-fish and vegetable in saline area



Involvement of Women in large scale vermin compost production at villages of Batiaghata sub-district



Adoption of Climate resilience vegetable farming in slightly saline area



Tree plantation to protect embankment/dykes



Raising Community seedbed to facilitate quality seed for boro rice in coastal region



Commercial crab (*Scylla serrata*) cultivation in strongly saline area



Vegetable with rice and fish in moderately saline area



Outcome of the SLM best practices

-  **Livelihood improved**
-  **Reduce soil salinity**
-  **Increase crop production**
-  **Improved food security**
-  **Improved health & sanitation**
-  **Local resource usage**
-  **Improved livestock health**
-  **Adopt climate extremes**
-  **Adopt water logged situation**
-  **Reduced embankment breaching**



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**THANK YOU FOR
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