

LIVELIHOODS IN TRANSFORMED FLOODPLAIN: A case of flood polder in southwest Bangladesh

Hamidul Huq^a, Rezaur Rahman^b, Masfiqu Salehin^b, Helen Adams^c, W. Neil Adger^c

^a Center for Sustainable Development, University of Liberal Arts Bangladesh, Corresponding author. E-mail: hamidul.huq@ulab.edu.bd

^b Bangladesh University of Engineering and Technology, Dhaka, Bangladesh

^c Geography, College of Life and Environmental Sciences, University of Exeter, United Kingdom.

Introduction

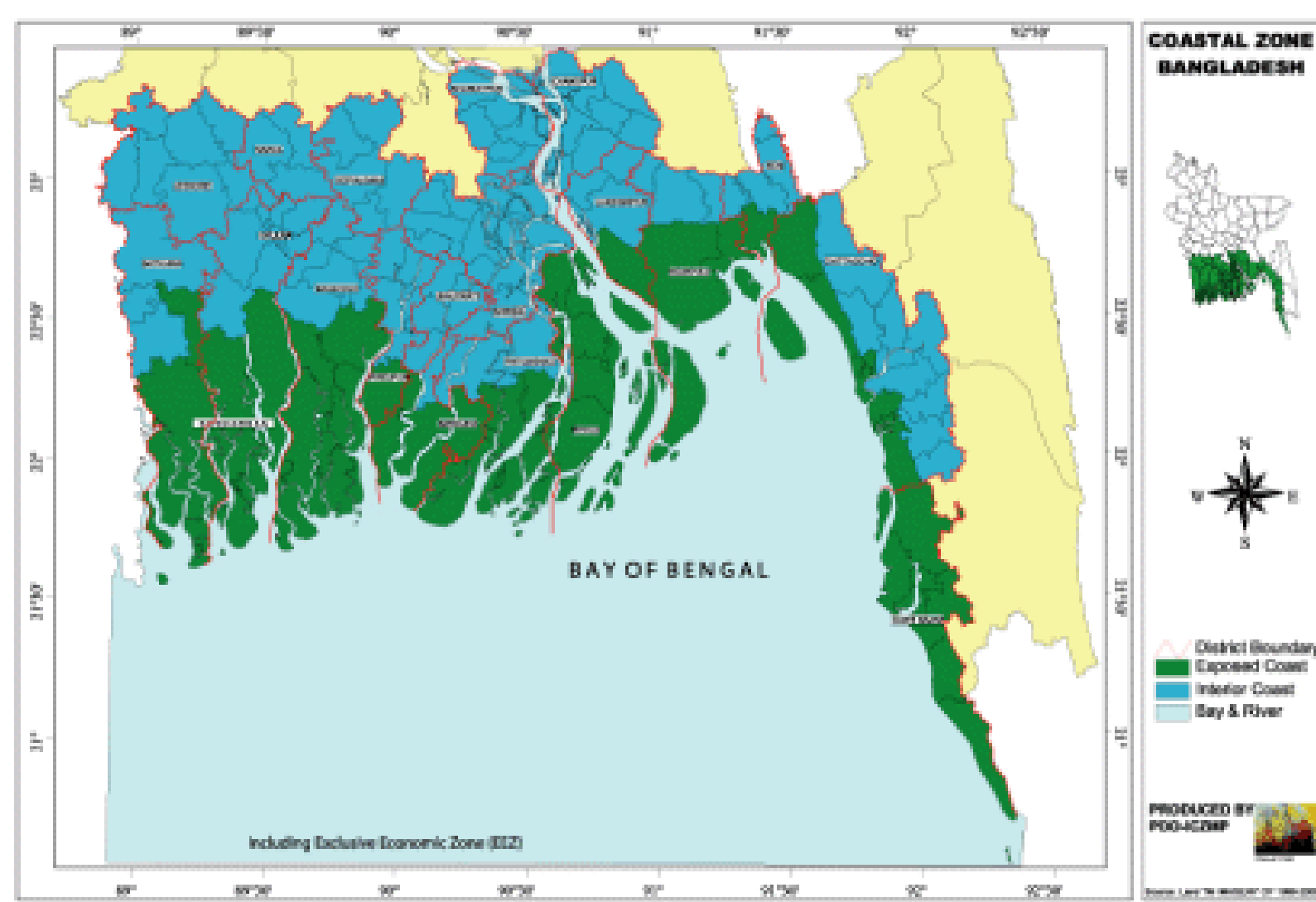
Bangladesh

Nearly 90% of Bangladesh is less than 10 meters above sea level, and is located in the floodplains of the three great river systems totaling 22,155 km in length: the Padma (also known as the Ganges), the Meghna, and the Jamuna/Brahmaputra, and about 700 other rivers and streams. Bangladesh is an extraordinarily rich country in terms of land, water, climate and people. It is also equally a poor country in terms of efficiency of utilization of these resources, sustainable development and mobilization of vast majority of the people in the processes of development. This wealth and poverty are reflected in the coastal environmental stress affecting Bangladesh today (ESCAP, 1988).



Coastal Zone

Coastal Zone of Bangladesh covers 19 southern districts with a land area of 47,201 square kilometers, inhabited by 35.08 million people. Three indicators have been considered for delineating the landward boundaries of the Coastal Zone of Bangladesh: influence of tidal waters, salinity intrusion, and cyclones/storm surges. It is known as a zone of vulnerabilities as well as opportunities (Coastal Zone Policy Bangladesh, 2005).



Coastal Zone of Bangladesh

Southwest Region of Bangladesh is coastal floodplain belongs principally to agro-ecological zone of Ganges Tidal Floodplain. This region is potential area of newly reclaimed cultivable land after polderisation. This region was naturally characterized by having tidal floodplains; capillary river networks; the rivers brought enough siltation to the floodplains through their tidal process; rivers were connected with *beels* (wetlands) that functions as tidal water reservoir and drainage; tidal sediment forms landscape, and enrich land fertility (Nandy, 2011). The area of these *beels* is around 4840 ha (PDO-ICZMP, 2005).

First Decade of Polderisation : Intensive Agriculture



Polderisation in Southwest Region: In 1960s, the Coastal Embankment Project enclosed all the tidal influenced coastal areas within 123 polders of which 39 polders were built in southwest region enclosed 10,14,100 acres land to protect the tidal floodplains from saline water intrusion and tidal surge towards increasing the cropping intensity. The polderised tidal floodplains were brought under intensive rice cultivation from which farmers were benefitted from increased yielding up to 200 – 300%.



Decades of displacement

Shrimp farming : After a decade of polderisation, external businessmen in collaboration with large absentee farmers started salt water shrimp (*Penaeus monodon*, locally known as *Bagda*) farming taking more lands on lease from the small and medium farmers applying muscle power. They brought saline water for shrimp farming breaching the rules and regulations. Over a period of 10/12 years, all most the whole polderised areas were brought under shrimp farming. Highly profitable export market of shrimp was the main attraction of shrimp farming instead of rice.



Shrimp Farm

Drainage congestion and water logging: Nature's reaction against the intervention was already building up. Within a decade or more of the polderisation siltation started at the water entrance point of the sluice gates and rivers and canals' bed height began to increase. As a result, first Beel Dakatia under polder 25 became water logged. Consequently, polder 24, 27 & 28 also became water logged one after another. The temporary drainage congestion, which first appeared in 1982, gradually became permanent water logging to such an extent that, by 1990, an area of 100, 600 hectares in Khulna and Jessore districts of the region alone was permanently waterlogged (IFI Watch - Bangladesh, 2006). The polders have also contributed to internal drainage congestion and heavy external siltation.



Water Logging



Livelihoods threatened: Where the southwest coastal region of Bangladesh was once a prosperous agricultural hub, today it is an area ravaged by salinity, natural disasters, poverty and an inability to cope with recurrent shocks. The conversion from agriculture to shrimp farming created a physical and ecological imbalance, which has largely destroyed the natural ecosystem of the southwest region (Karim, 2006). Salinity increase has been one of the major problems for traditional agricultural practices in coastal Bangladesh for several decades (Rahman et al 2011).



Threatened Livelihoods

Decades of local initiatives

Counter-development: New change in land and water uses started appearing again in the polder during mid 1980s through the farmers' innovated 'rice-prawn *gher*' approach. Since then farmers grow *Golda Chingry* (*Macrobrachium rosenbergii*) and rice and white fish in the same land using freshwater (Barmon et al, 2004). Farmers call this farming system "Pocket Gher".



Pocket Gher

For "Pocket Gher" the farmers make perimeter-dykes, which is a modified rice field having high and wide dikes with a canal inside the periphery of the dikes that retains water during the dry season. In addition to rice, prawn, and carp farmers grow vegetables and fruit trees on the Pocket *gher* banks. The life cycle of prawn and carp is from May/June to December/January, *boro rice* is from the end of January to end of April and seasonal vegetables are throughout the year. Before release of prawn post larvae (PL) into the *gher*, farmers repair the *gher* dikes and trenches almost every year.

Conclusion

We need to support 'counter-development' towards achieving sustainable livelihoods of the delta people. Here, counter-development refers to balancing between local initiatives and dominant development interventions. If a group of poor people, aware about the outcomes of the development intervention (project), consciously agree on collective action which would challenge the/that development intervention process is understood as counter-development (see Galjart, 1995, Huq, 2001).