



# Changing Livelihood Strategies: Adapting to Hydro-climatic Change in the Southwest Coastal Region of Bangladesh

**Deltas in Times of Climate Change II**

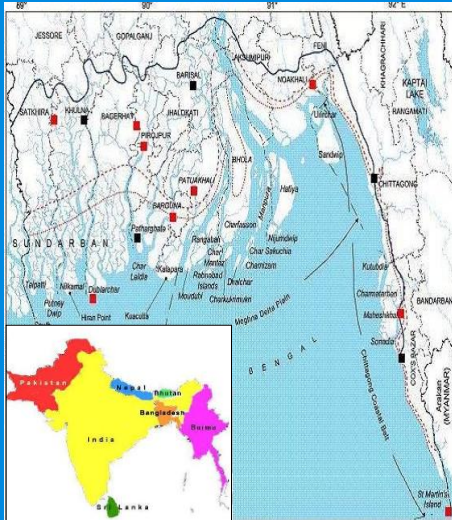
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**Masud Iqbal Md Shameem**  
**Dr Salim Momtaz**  
University of Newcastle, Australia

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# Coastal Bangladesh: An Overview



- ❑ Area: 47,000 km<sup>2</sup>
- ❑ Low lying plain (< 3m)
- ❑ Population: 40 million
- ❑ High level of poverty
- ❑ Unique livelihoods

## Hydro-climatic Vulnerability

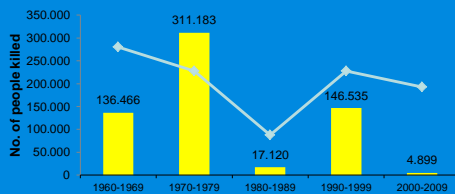


Fig.1. Cyclonic storm & human casualties

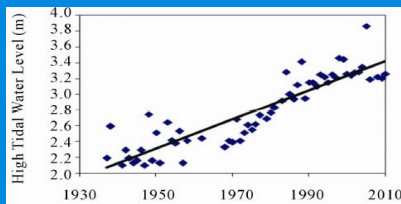


Fig.2. Annual max. high water levels  
(Source: Mondal et al. 2012)

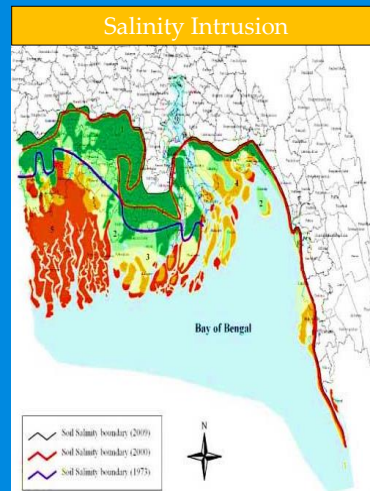


Fig.3. Growing salinity intrusion  
(Source: SRDI 2012)

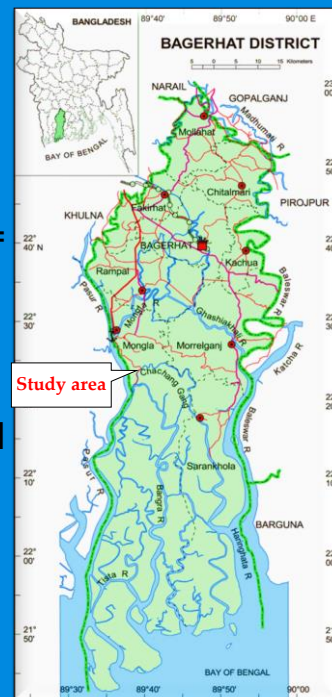
## Research Questions

- ❑ How do households adapt livelihood strategies in response to hydro-climatic variability and change?
- ❑ How do shrimp farmers cope with short-term climate disturbances?

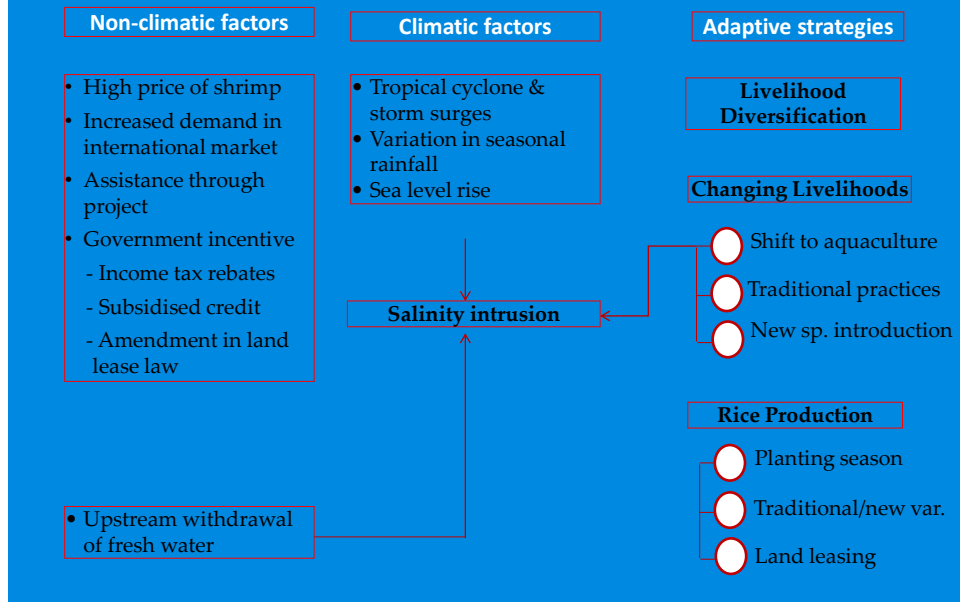
## Data Collection

- ❑ Household survey (n = 372)
- ❑ Focus group discussion (n = 20):
  - Hazard Mapping
  - Seasonal Calendar
- ❑ Shrimp farming household survey (n = 30)

Fieldwork in Mongla, Bangladesh between:  
September 2012 and January 2013



# Responses to hydro-climatic stresses



## Shrimp farmers' adaptation

Changes in shrimp farming practices*	Respondents Percentage of n (no. of sample) n=30
Increased embankment height	47 (14)
Digging pond inside the fish farm	20 (6)
Liming	10 (3)
Use medicine	7 (2)
Placing net around the shrimp field	3 (1)
No response measures implemented	47(14)

## Key findings

- ❑ Adaptation primarily focuses to increasing salinity;
- ❑ Livelihoods diversification depends on land-size;
- ❑ Shifting livelihoods from agriculture to aquaculture is a planned adaptation strategies;
- ❑ Shrimp aquaculture impacts adversely on food security;
- ❑ Innovation-driven adaptation occurs in aquaculture.

## Concluding thoughts

- ❑ Livelihood insecurity remains an intractable problem;
- ❑ Depletion of freshwater resources impacts the society immensely;
- ❑ Problems are beyond the means to solve at micro level;
- ❑ Clear winner and losers of adaptive strategies;
- ❑ Adaptation strategies should be combined with strategies addressing causes of vulnerability.

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