

Postlarvae fishing, biodiversity and livelihoods under climate change: A case study on southwest coastal community in Bangladesh

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C1 Session

Impacts on fisheries and coastal communities

International Symposium

Climate Change Effects on Fish and Fisheries: Forecasting Impacts, Assessing Ecosystem Responses, and Evaluating Management Strategies

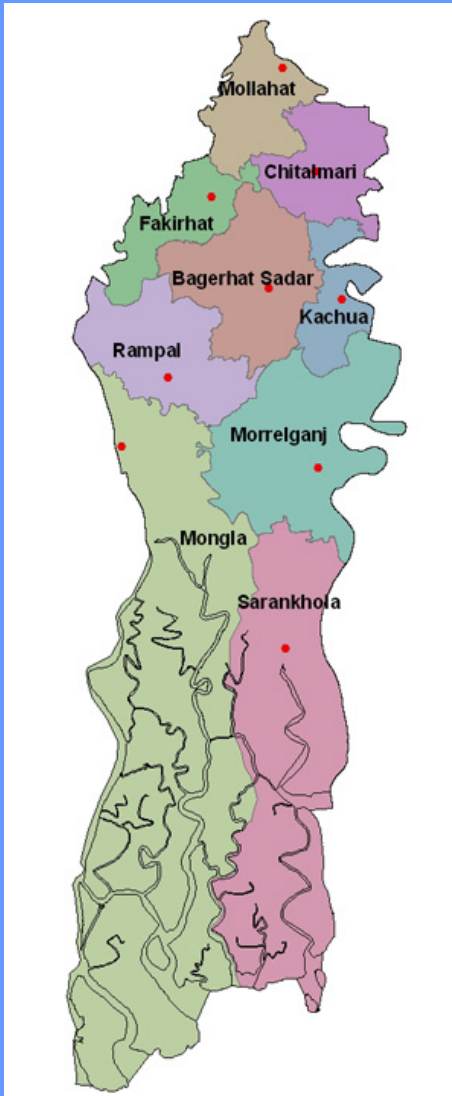
April 25 – 29, 2010

Sendai, Japan



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District Map

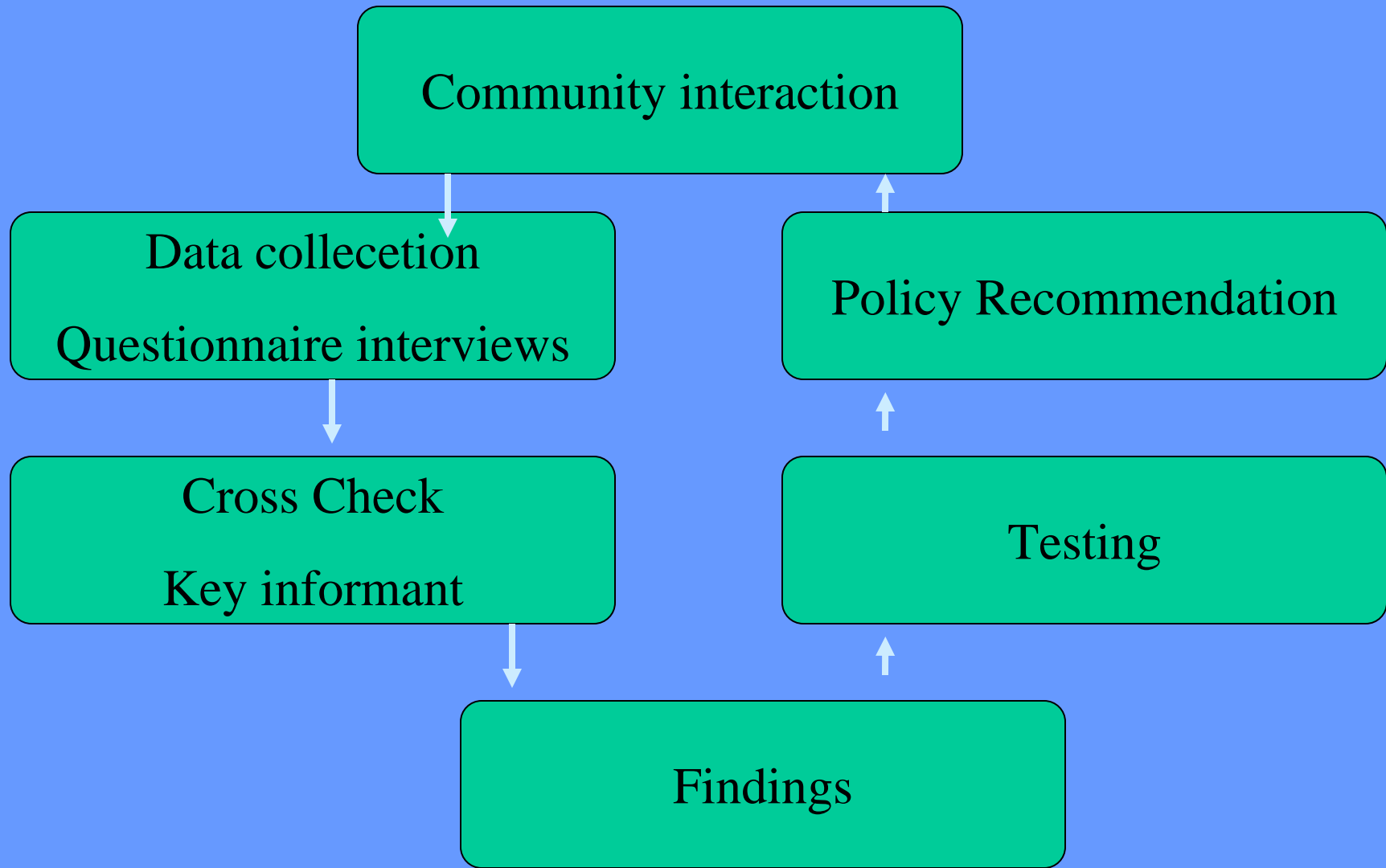


Study Area Map



Research Design and Method

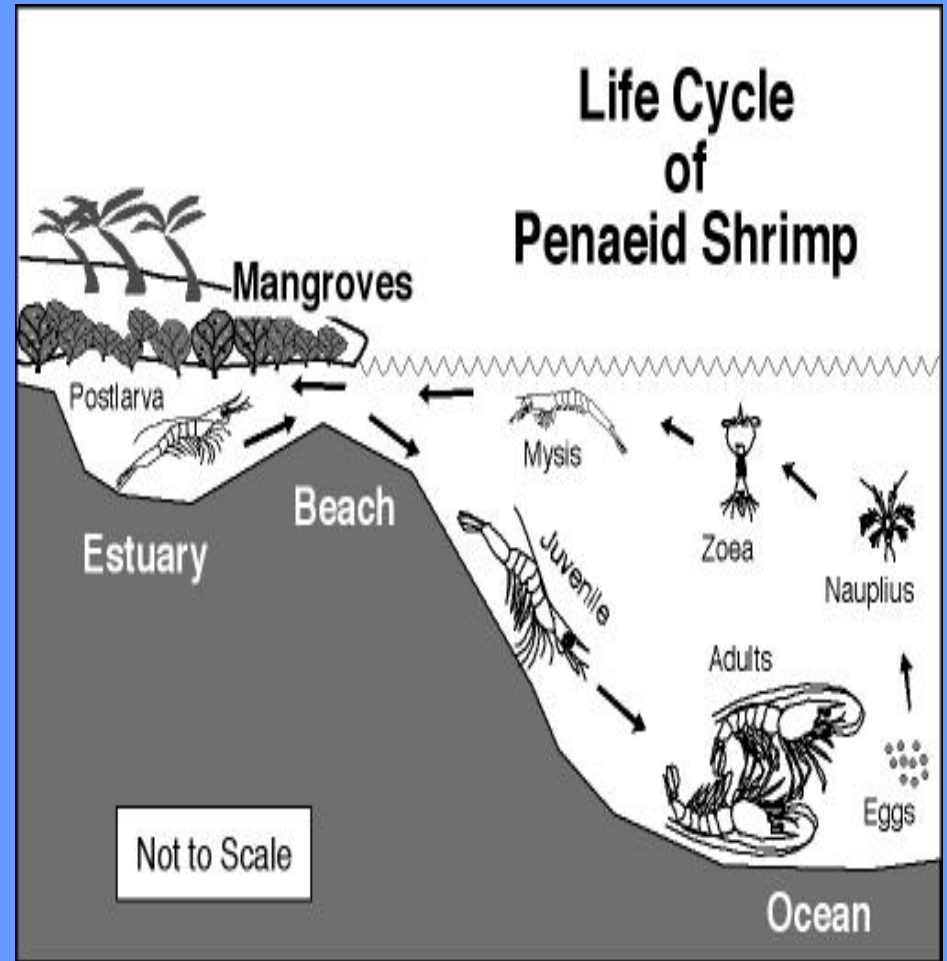
Qualitative method: Primary & Secondary data



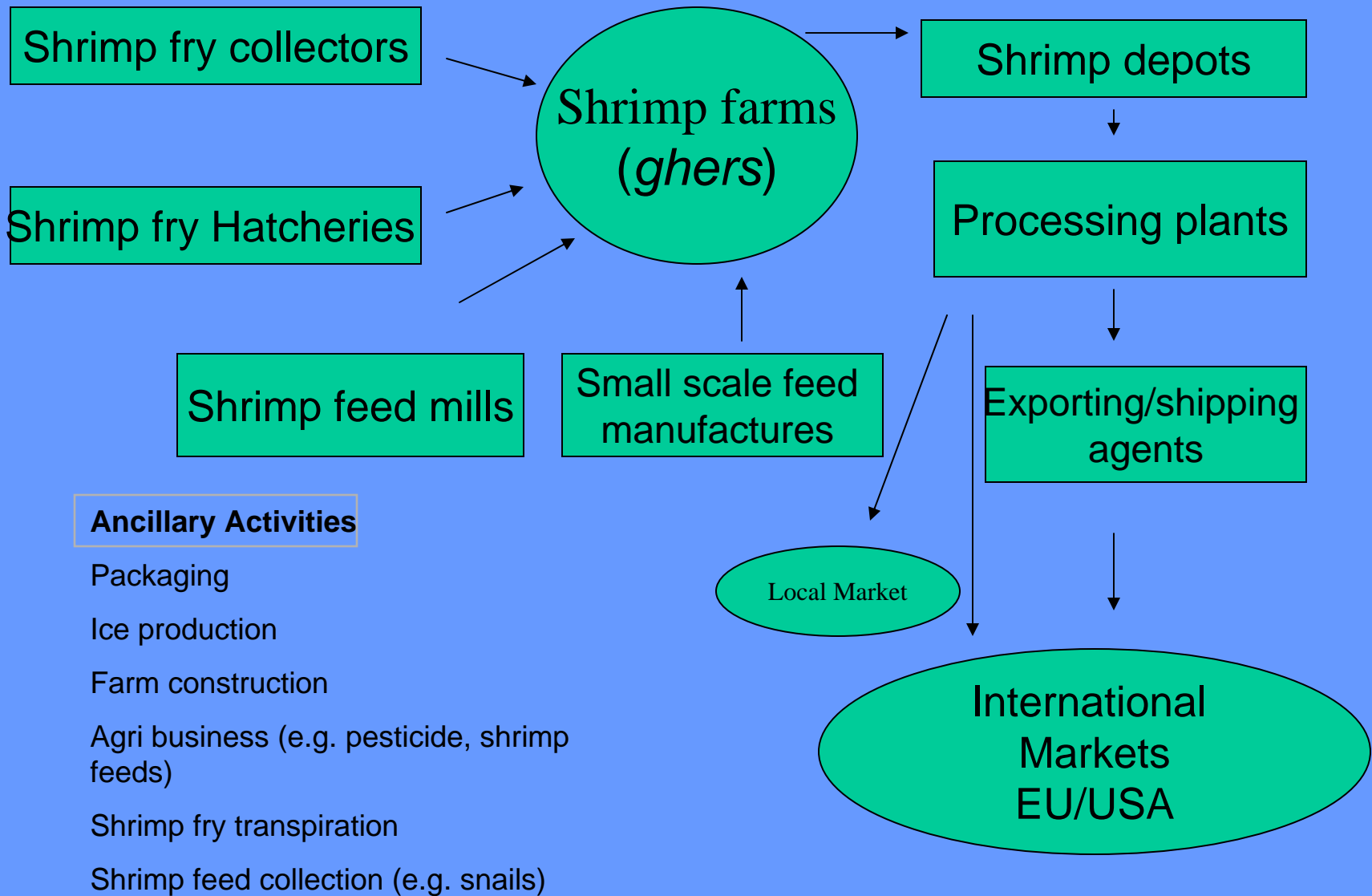
Locally prawn fry called *icha* (translation tiny prawn)

English Name	Scientific Name
Shrimp	<i>Metapenaeus monoceros</i>
Hilsa shad	<i>Tenulosa ilisha</i>
Indian river shad	<i>Gadusia chapra</i>
Sea bass	<i>Lates calcarifer</i>
Monsoon river prawn	<i>Macrobrachium malcolmsonii</i>
Freshwater prawn	<i>Macrobrachium</i>
Freshwater prawn	<i>Macrobrachium mirabilis</i>
Freshwater prawn	<i>Macrobrachium birmanicus</i>
Freshwater prawn	<i>Macrobrachium rude</i>
Freshwater prawn	<i>Macrobrachium dayanus</i>

Black tiger prawn	<i>Penaeus monodon</i>
White shrimp	<i>Penaeus indicus</i>
Shrimp	<i>Penaeus merguensis</i>



The Shrimp Industry



Economics of Shrimp

Big scenario

- 2nd largest foreign exchange earner
- some \$534.07 million in 2008-2009
- 5% of the total exports in 2007-08
- 20% growth annually
- Highest catch rate

Local reality

- livelihoods of 400,000
- around US\$30 million
- informal Sector
- wild
- seasonal



Picture: bag net



Picture: pull net

Big Business but Cost of biodiversity

Indiscriminate fishing of postlarvae with high levels of by-catch has huge impact on biodiversity in coastal ecosystems.

- 1076/1 prawn postlarva of non-target fry in bag net
- 807/1 postlarva of non-target fry in pull net.

Reference: Edward H. Allison *et al.* 2010

Climate Change

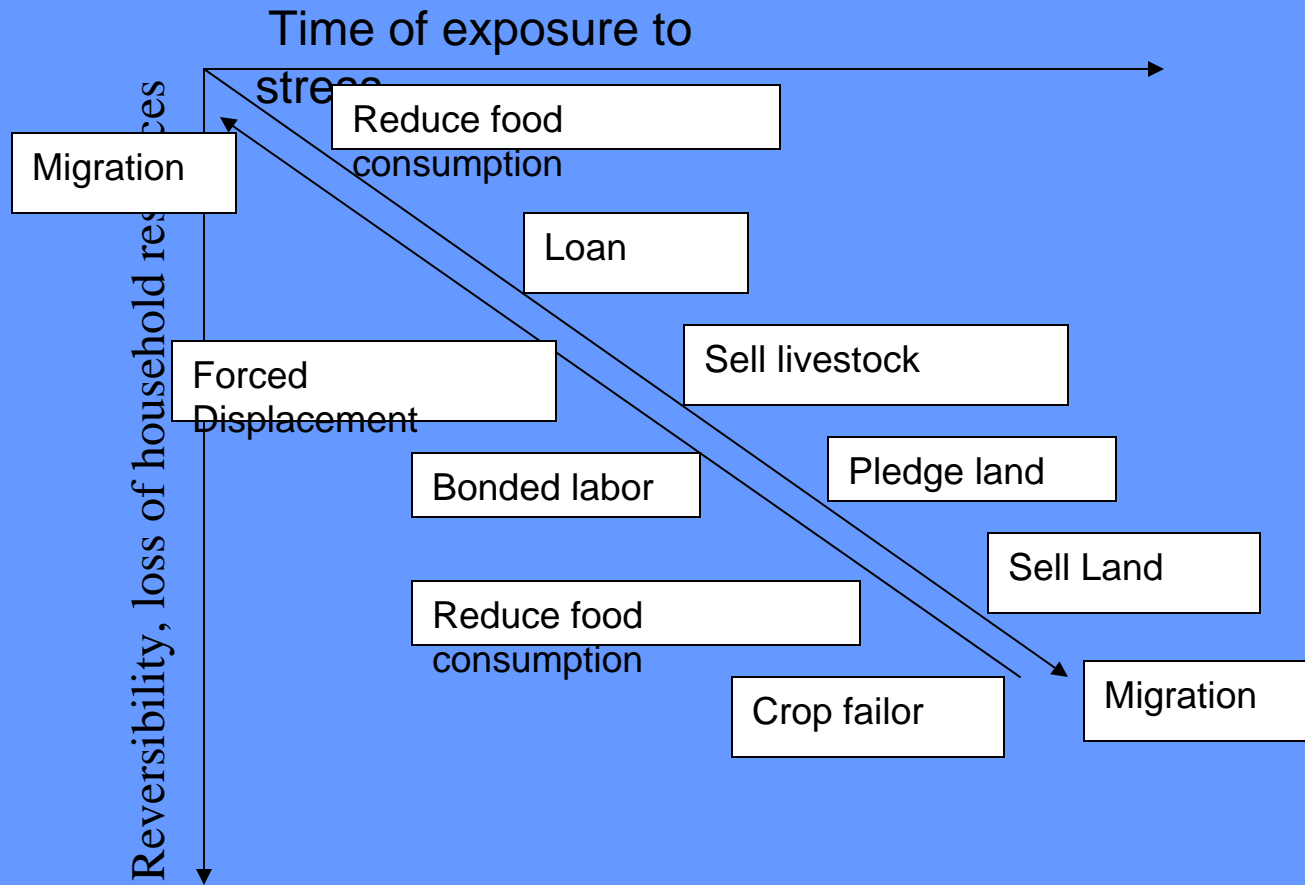
- ◆ Salinity increase
- ◆ Temperature increase +
- ◆ Habitats destruction

Climate Change (Cont.)

Storm Surges

- cyclone Sidr (November 2007)
- cyclone Nargis (May 2008)
- cyclone Aila (May 2009)

Coping Strategies



Source: Maxwell and Frankenberger (1992), Maxwell *et al.* (1999).

Management of Climate Change Adaption

Community Based Goverance and Management

- **Monitoring and supervision**

Government's initiatives:

- **Spatial and Seasonal ban**
- **VGF Card**
- **Alternative livelihoods**
- **Afforestation of Mangrove tress**



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I fish for food. I toil, I am relentless.

Acknowledgement

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Photo Credits:

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Thank you for kind Patient!

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