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WIDER Development Conference: Migration and Mobility

Impacts of climate change on the migratory and non-migratory fishers of the Padma River in Bangladesh and their response strategies

Presented by

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Presentation outline

1. Introduction
2. Methodology
3. Results and Discussion
4. Conclusions

Introduction

- **Scientific evidences claim that due to climate change the frequency of environmental hazards and disasters has been increased**
  - **Societies are transforming and peoples are facing new challenges**
  - **Pattern, numbers and dynamics of human mobility are changed**
- **Migration has different types and forms– temporary or permanent, forced or voluntary, seasonal, regional or international.**
- **Nature induced human migrations in a specific community or in a place are not same for the people who are stationary and who are visiting.**

Non-migratory and Migratory Fishers

- **Fishers who are almost stationary and fish in their neighboring rivers and cannels referred as non-migratory fishers**
  - They are well-informed about the environmental challenges of fishing
  - They can accomplish their livelihood challenges by their local knowledge's on environment and societies.
- **Fishers who are coming from one region or community to fish in another regions or communities known as migratory fishers**
  - **They may not have same kind of opportunities as non-migratory fishers but they may have different perceptions on the climatic hazards.**

Why Fisheries Sector of Bangladesh

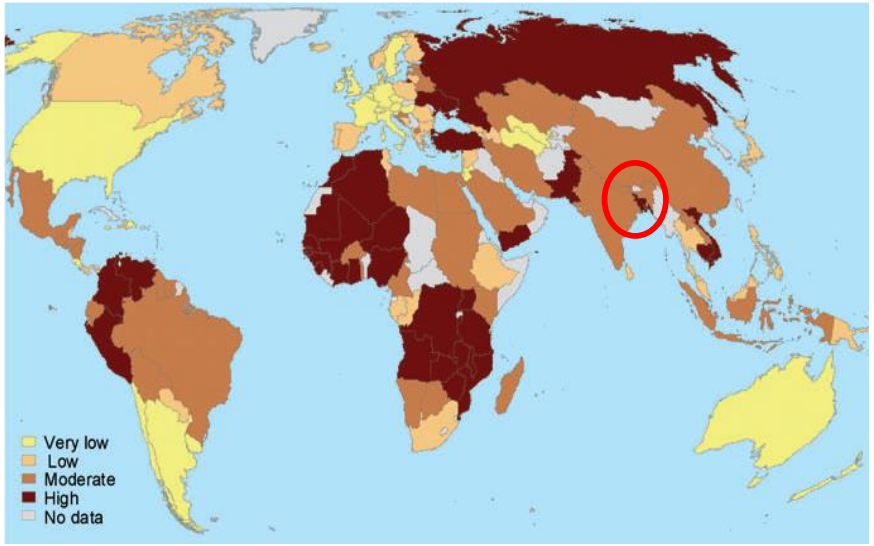
- **Bangladesh is the world's 4th largest inland waters capture fisheries producing country**

- **Fisheries sector significantly contributes in-**
  - **Economic development**
    - ✓ **3.69% of GDP**
    - ✓ **2.01% of export earning**
  - **Food security**
    - ✓ **60% of dietary animal protein**
    - ✓ **Essential minerals, vitamins & fatty acids**
  - **Livelihoods**
    - ✓ **Supporting 17.8 million people directly & indirectly**

Climate change and Bangladesh fisheries

- **Bangladesh is an extremely vulnerable country to climate change impacts**

- **Fisheries sector of Bangladesh has been identified as the most vulnerable to climate change in the world**



Vulnerability of Fisheries to climate change at Global scale (Source: Allison et al., 2009)

- **Response strategies can maintain the substantial benefits of fisheries sector by minimizing the climate change impacts**

Research gap

- **Most studies on climatic hazards or disasters, and fisheries, have focused on-**
  - **Documenting trends and fluctuations in fish abundance**
  - **Impacts on the marine ecosystem**
  - **Macro-level impacts on vulnerability and adaptive capacity**

- **In Bangladesh, studies have been conducted on -**
  - **Agricultural sector**
  - **Coastal regions and fisheries**

- **But the impacts of climatic hazards/disasters on the inland migratory and non-migratory fishers and their response strategies to overcome the impacts have not been investigated.**

Study objective

To assess the climatic impacts and response strategies of the Padma River migratory and non-migratory fishers of Bangladesh

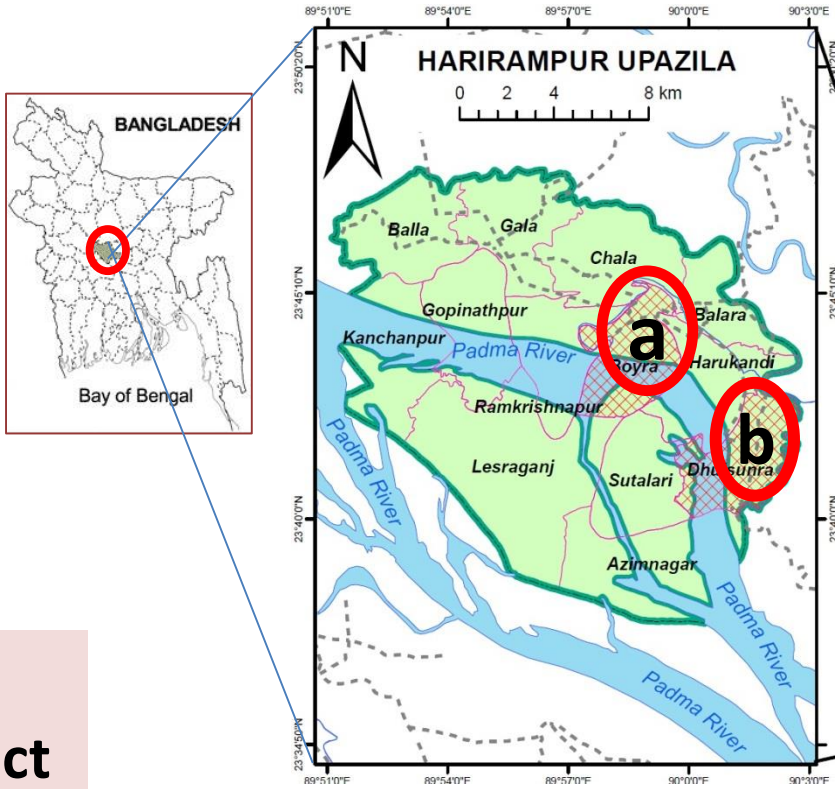
Methodology
Study sites

Padma river

Fish production
6,999 MT fish in 2012-2013

Breeding ground for finfishes
Producing 22.75% natural hatchling

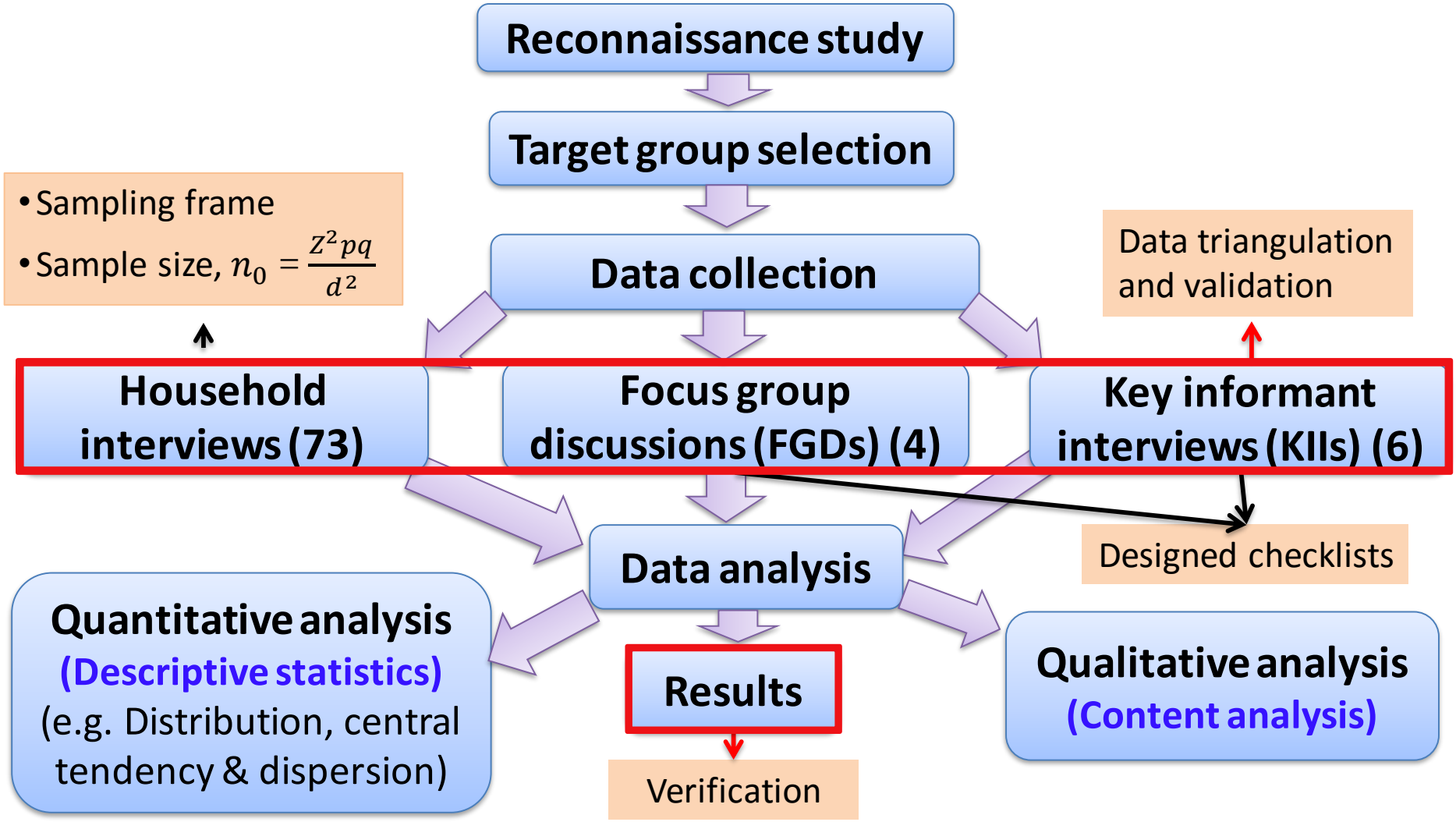
Diversity in fishers type
Migratory and non-migratory fishers



a. Andharmanik b. Dhulsura
Harirampur Upazila, Manikganj District

- **Fishers dependent on the Padma river**
- **Highly vulnerable to climatic hazards/disasters**
- **Both type of fishers present**

Data collection and analysis



Data collection photographs

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b

c

d

e

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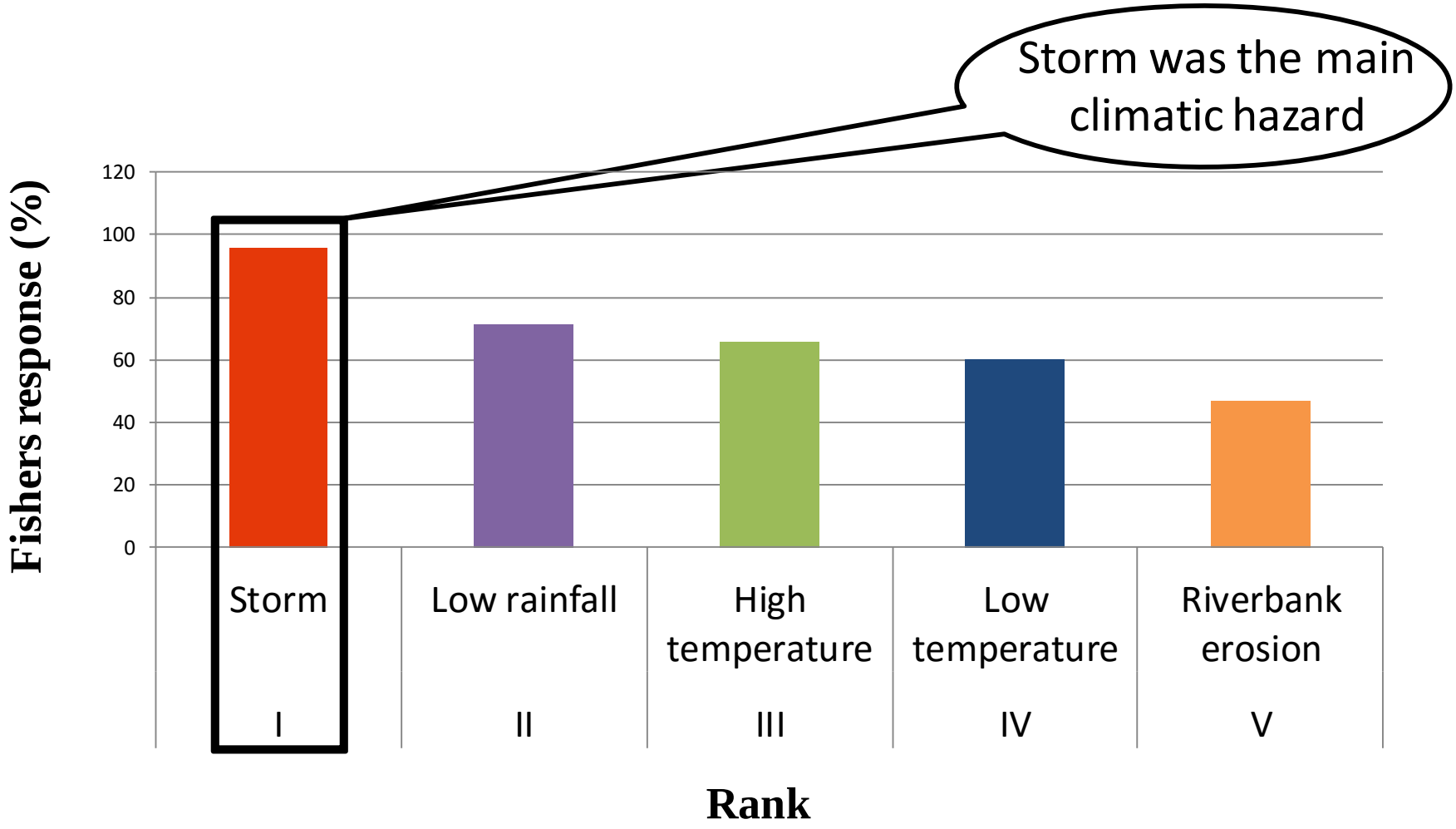
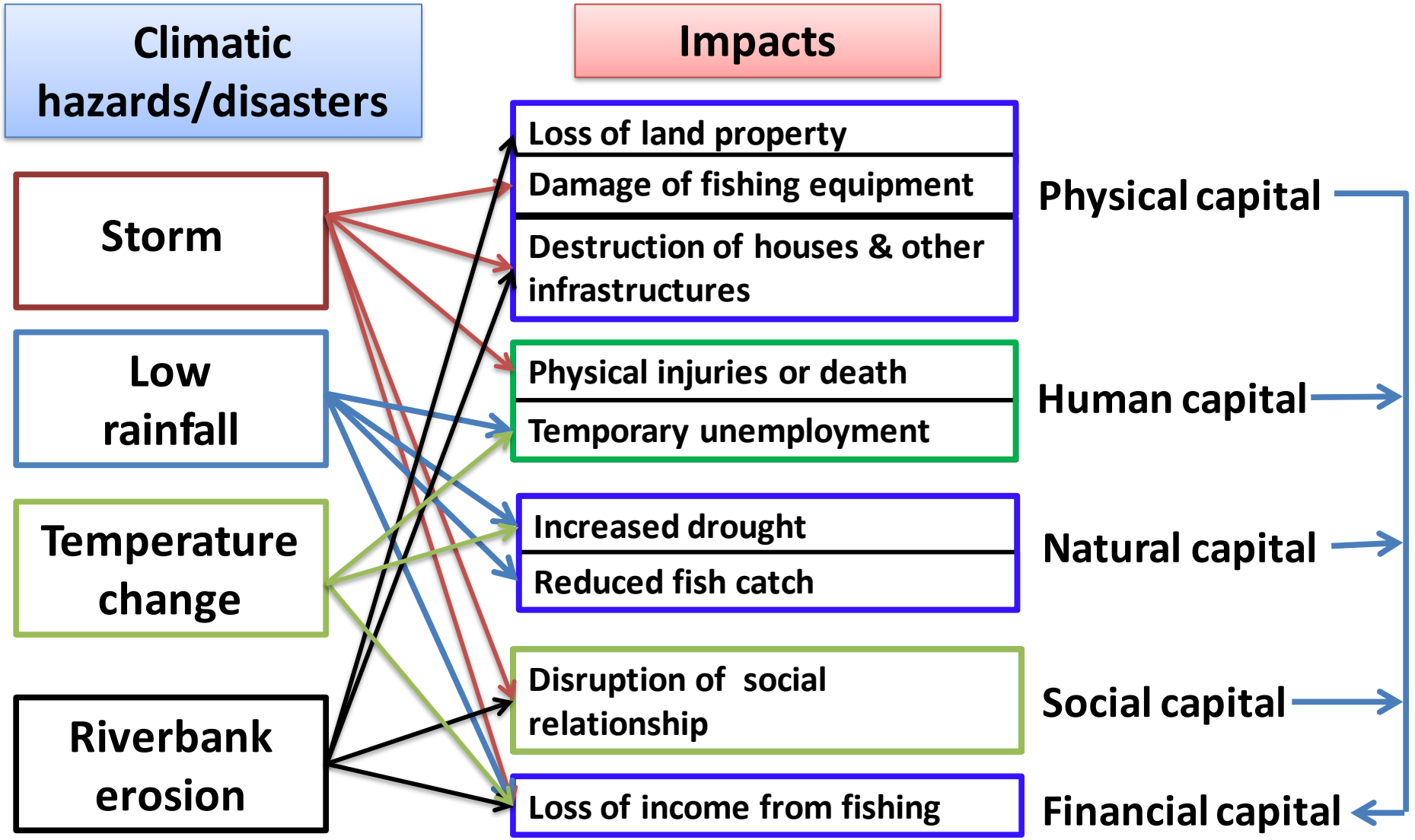
Results and Discussion

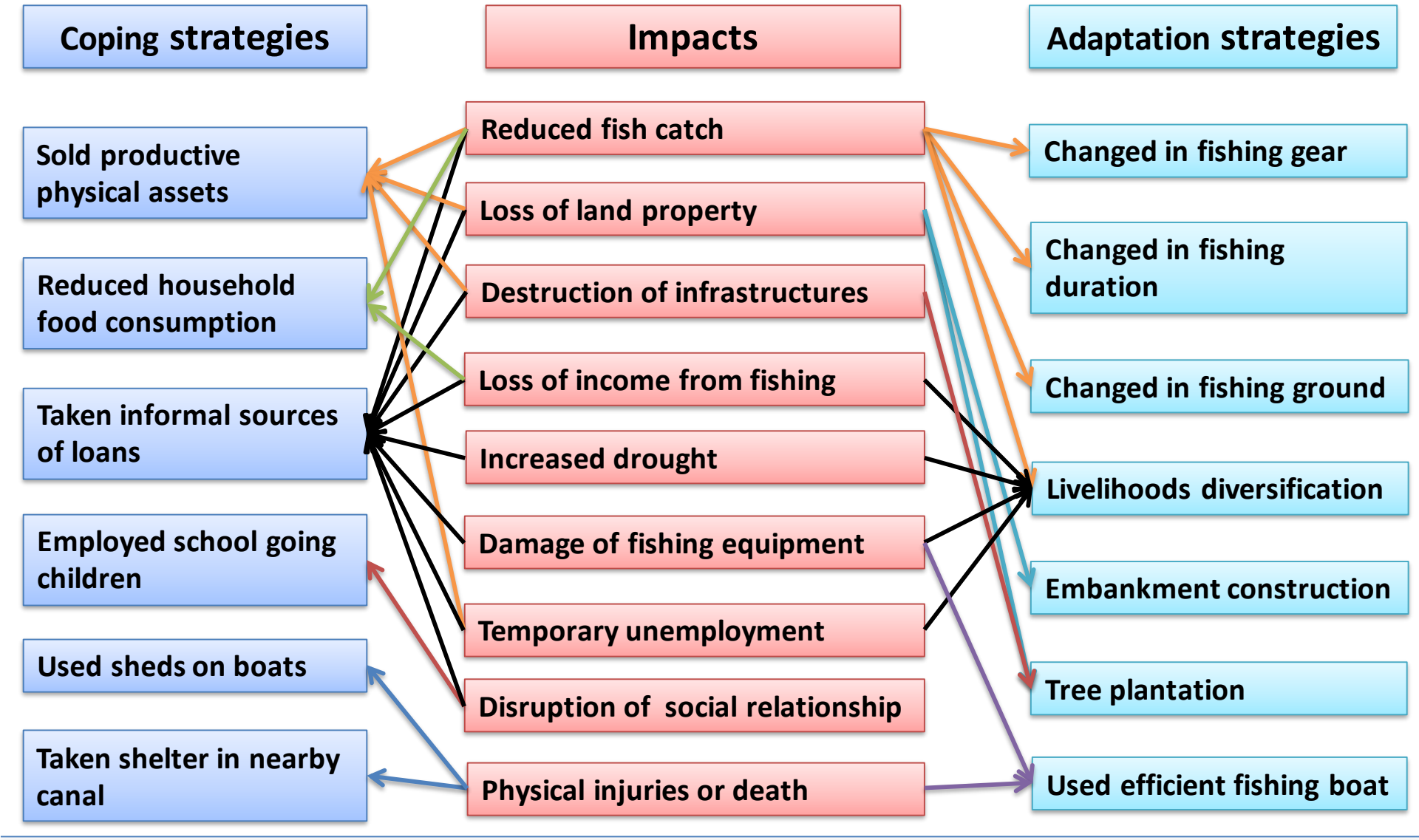
Ranking of climatic hazards/disasters



Impacts of Climatic hazards/disasters



Response strategies



Migratory vs Non-migratory fishers response strategies

Response strategies	Migratory fishers (%)	Non-migratory fishers (%)
Coping strategies		
Sold productive liquid assets	**63**	94
Reduced household food consumption	32	83
Taken informal sources of credits	**68**	100
Employed school going children	53	52
Taken shelter on boats	100	57
Taken shelter in nearby canal or river	100	93
Adaptation strategies		
Used mechanized boats	**100**	56
Changed in fishing duration	**47**	100
Changed in fishing gear	100	57
Changed in fishing ground	100	No change
Livelihood diversification	**100**	59
Embankment construction	Was done by government	Not applicable

Maladaptation

- **Maladaptation can result from lack of inter-sectoral co-ordination**
- **61% non-migratory fishers** reported embankment construction in Harirampur Upazila as a **maladaptive strategy**
  - Disconnected the Padma river from the "Diyar beel" & associated floodplains
- **20% fish production reduced** due to embankment construction

Supports Halls et al. (2008) findings that fish production can be 50% lower inside flood control schemes compared to outside

- **50% fishers of both communities stopped children education by involving them in fishery related activities**

Conclusions

- **Climatic hazards/disasters have been impacting on the livelihood activities, strategies and outcomes of the migratory and non-migratory fishers.**
- **They were affected quite similarly by storms, changes in rainfall and temperature, but riverbank erosion affected only non-migratory fishers.**

- **Unlike the impacts, lesser number of migratory fishers sold their assets, took informal credit and intensified fishing, whereas more of them used modernized boats and diversified their livelihoods.**

- **The fishers' households are responding to these impacts but these are not sufficient to fully address the impacts**

Thank You