

Migratory fish species management issue in South Asia: A case from Bangladesh and India

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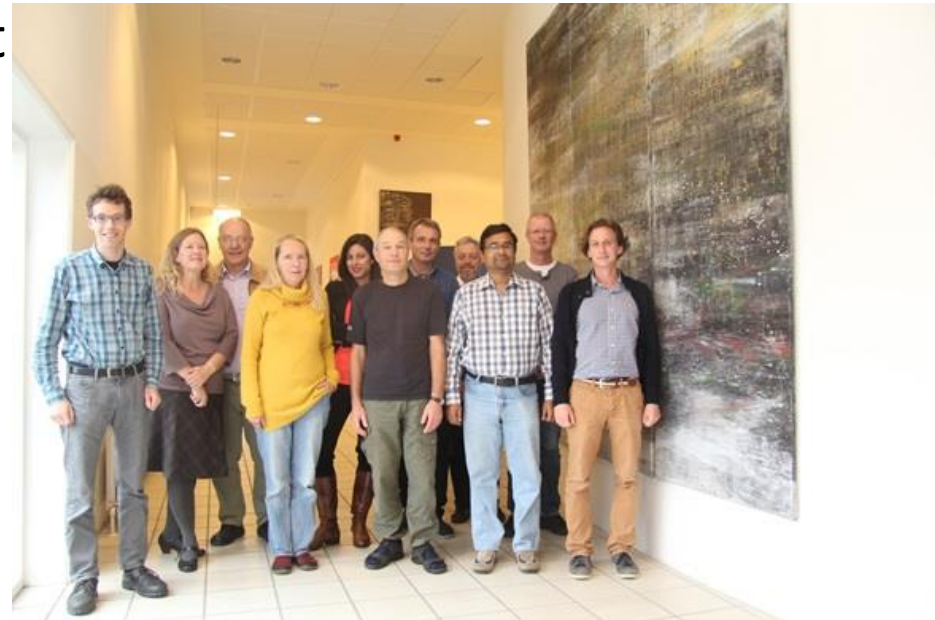
- ❑ Management and Economics of Resources and the Environment
 - ❑ MSc Environmental and Resource Management
- ❑ Marketing and Organizational Behavior
 - ❑ MSc in Economics and Business Administration
 - ❑ Marketing and Innovation
 - ❑ Energy Management
 - ❑ MSc in Sports and Event Management
- ❑ Sociology
 - ❑ MSc in Cultural Sociology
- ❑ Research Centers (multidisciplinary)
 - ❑ Energy Management Center
 - ❑ Risk Center
 - ❑ Center for Rural Research

MERE (Management and Economics of Resources and the Environment) group

The MERE group currently has specific emphasis on economic uses of the interlinked biosphere and biophysical systems.

Applications focus on

- ecosystem conservation and use;
- marine resource use and conservation;
- energy transitions;
- climate regulation;
- risk perception and management in natural resources



DANISH CENTRE FOR RISK AND SAFETY MANAGEMENT (RISK)



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Strategic collaboration and partnership

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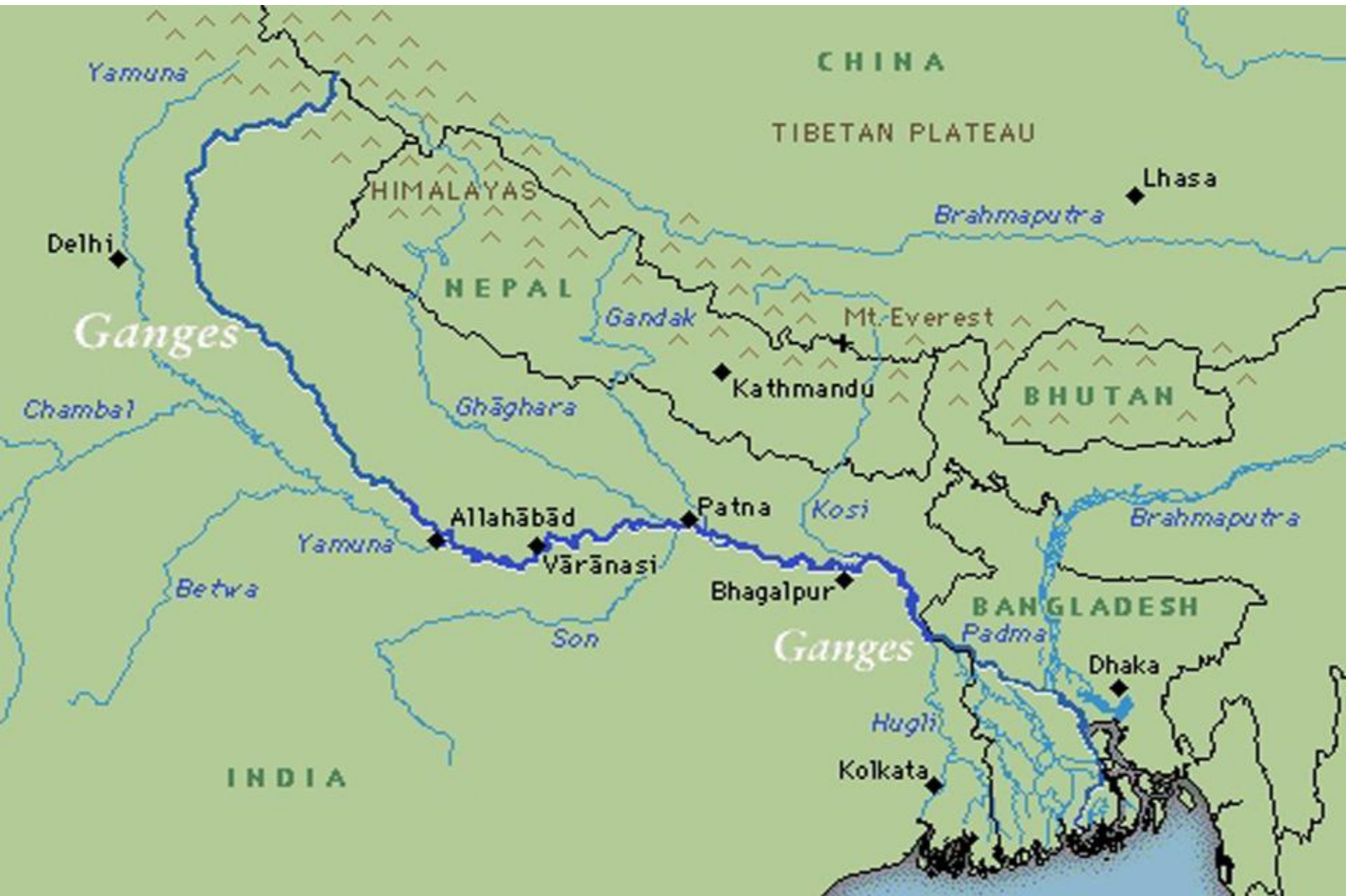
**“To be secure on land, we must be
supreme at Sea”**

- *Jawaharlal Nehru*-

- for fishing, habitat, tourism and recreation, mariculture, transportation, waste disposal, mining, energy production , port,
- Conflicts (intra and internationals)

from the time immemorial, Bangladesh is called –

“country of hundred rivers”





Hilsa (*Tenualosa Ilisha*)



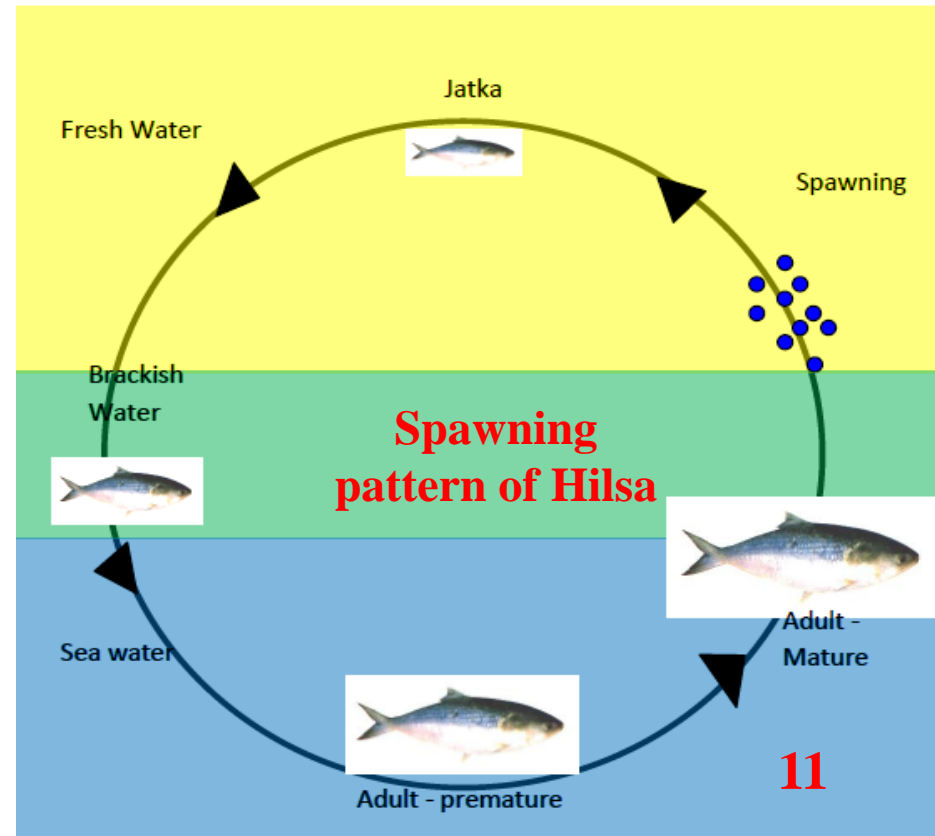
Tenualosa ilisha

❖ Two pick spawning :

i) October-November

ii) January-February

❖ Padma (Ganges) Ilish is famous for its taste, flavour, odour as well as commercial and cultural values



Distribution of hilsa



Hilsa fishery is the integral part of culture (both in Bangladesh and India)

About 1 million fishermen (0.6 million in Bangladesh and 0.4 million in India)

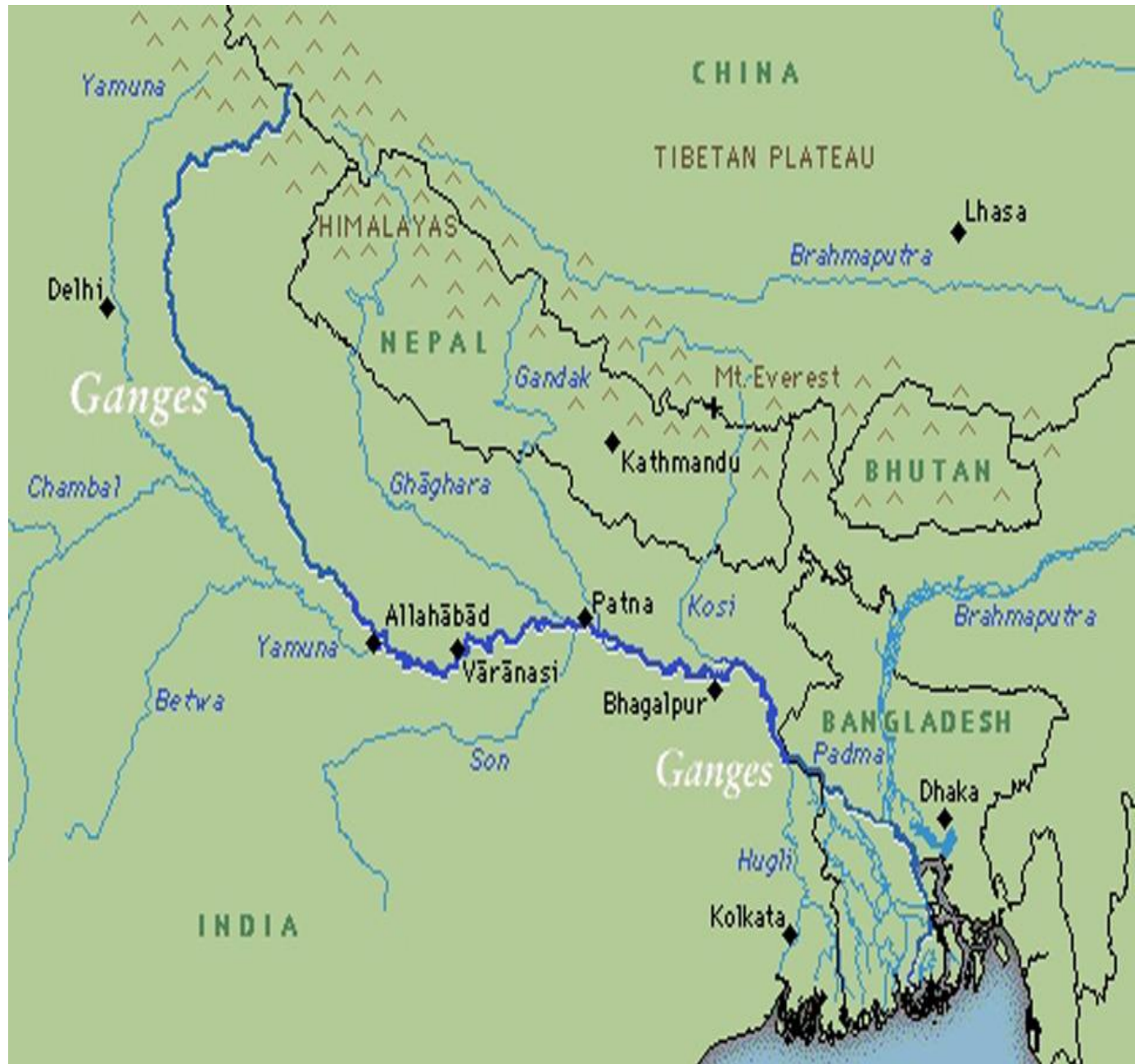
In Bangladesh 10.82% of the total fish production (2.89 million tons/yr)

Declining due to anthropogenic threats and ecological changes



Hilsa management in Bangladesh

- ❖ Till 1974
- ❖ 1975 : Farrakh Dam on River Ganges
- ❖ 1975-1990: Military regime
- ❖ 2006: Initiation of management



Hilsa governance in Bangladesh

- Jatka protection: 1st November to 31st May (7 months)
- Hilsa brood protection: 5th November to 16th November (11 days) : **No fishing at river**
- VGF Program for Hilsa Fishers
- Very top down approach



Joint Management Issue

UNCLOS on “management of straddling and highly migratory fish stocks”

No dialogue between the govt. officials

Even no idea of joint and integrated management

As a researcher , we have started to **thinking outside of the box**

Ecosystems for Life (E4L) : Initiation of Joint Researches between Bangladesh and India

The E4L project, facilitated by IUCN (2011-2014)

It is a civil society led multi-stakeholder initiative that promotes a better understanding of the management of water resources shared by Bangladesh and India.

Create a platform for collaborative research and developing research-based policy options; creating a regional knowledge hub; and enhancing the management of natural resources through dialogue.

<https://www.iucn.org/regions/asia/our-work/regional-projects/ecosystems-life-e4l>



Key Objectives:

- Stakeholder identification
- Assessment of migratory and spawning patterns
- Identification of the spawning grounds characteristics
- Documentation of anthropogenic impacts on migration and spawning pattern
- Assessing the loop holes of current regulations and policies
- Providing policy guidelines for the joint management (Bangladesh-India)

Research methodology

Focus group discussion and Semi-structured personnel interview

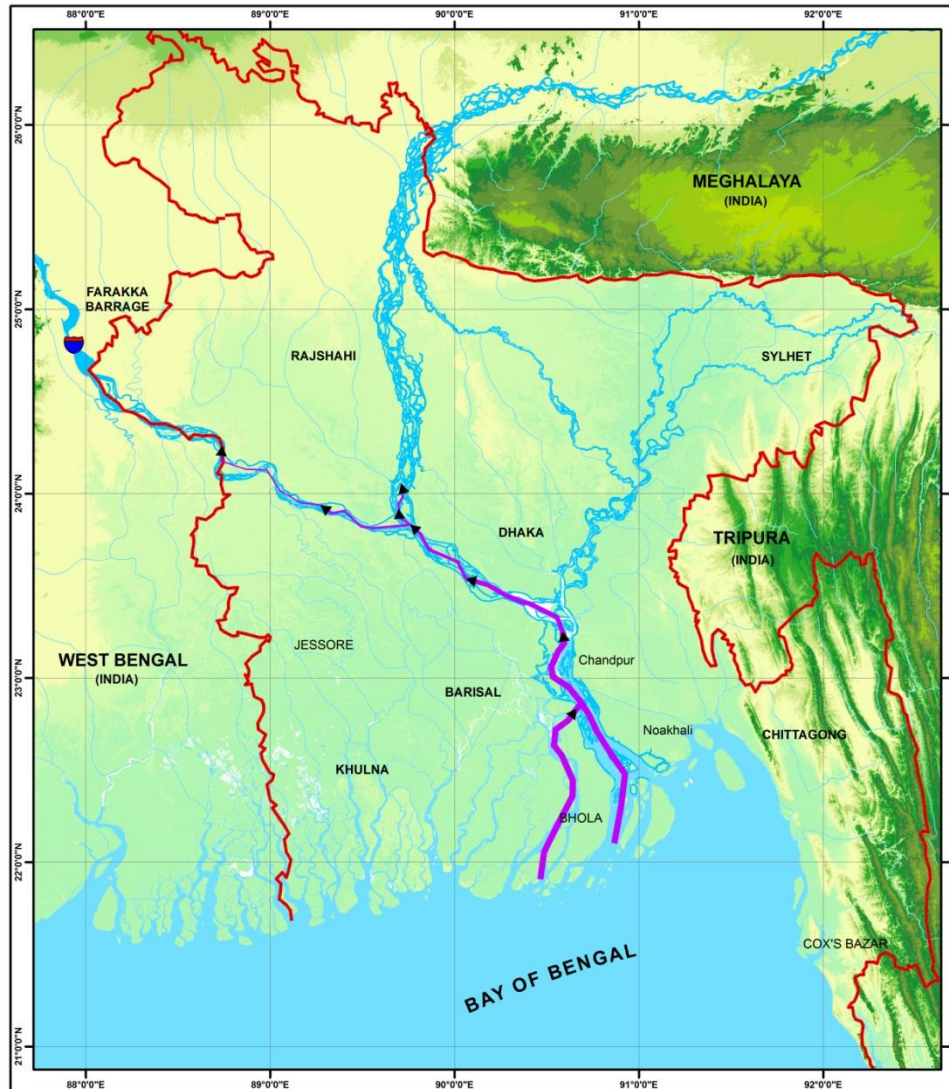
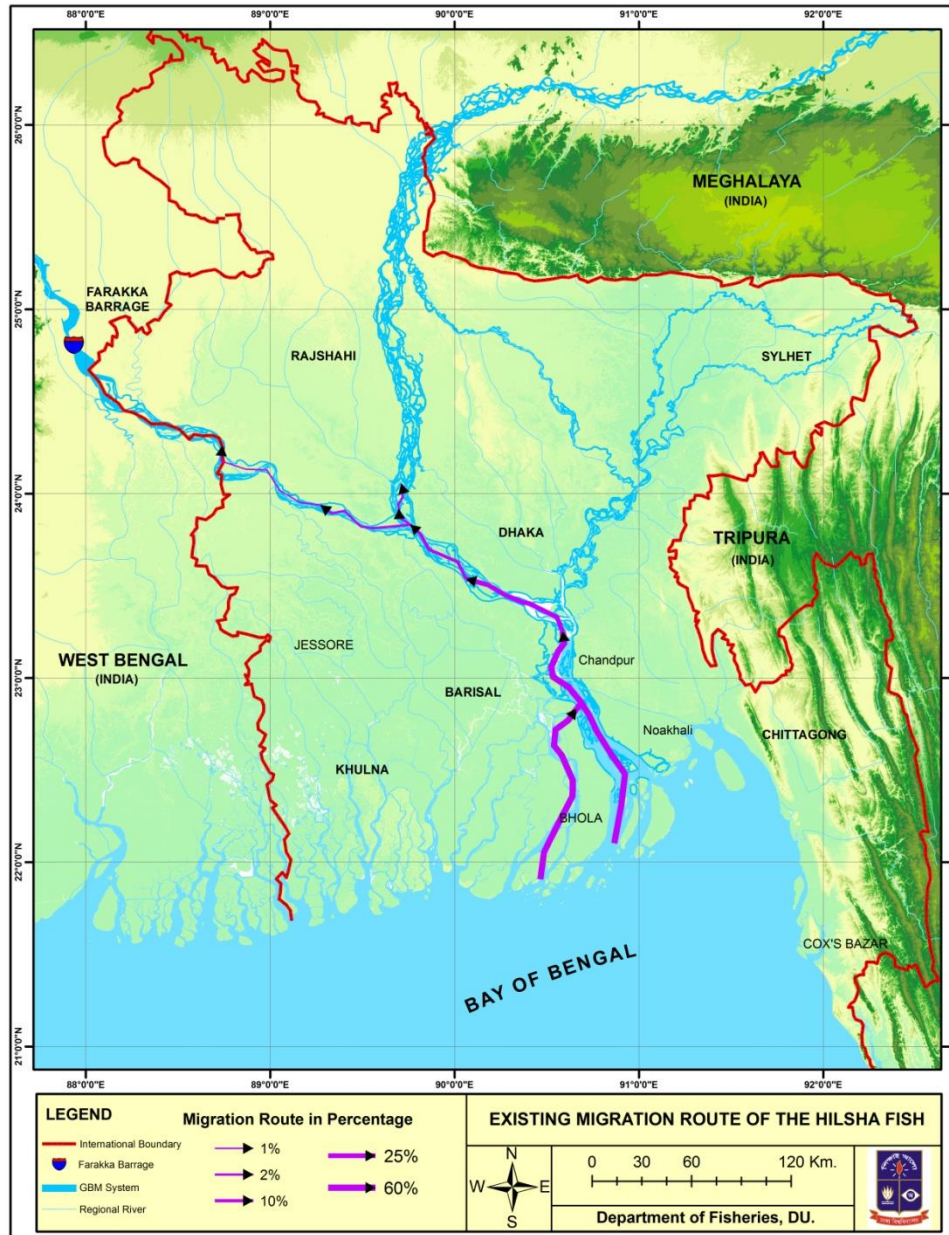
- Survey (Likert-type scale (1-5))
- Descriptive statistics , factor analysis, regression analysis

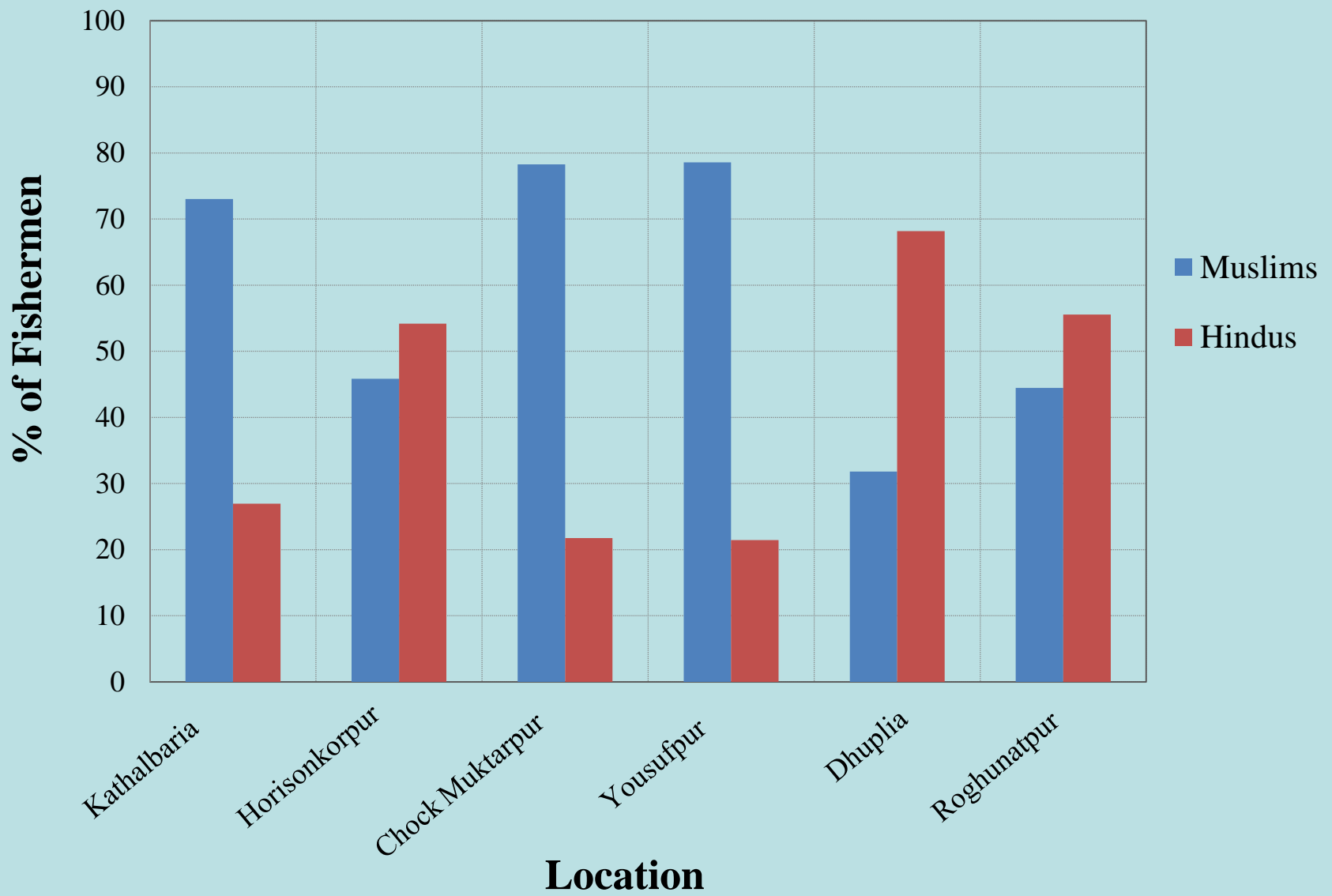


Key stakeholder groups

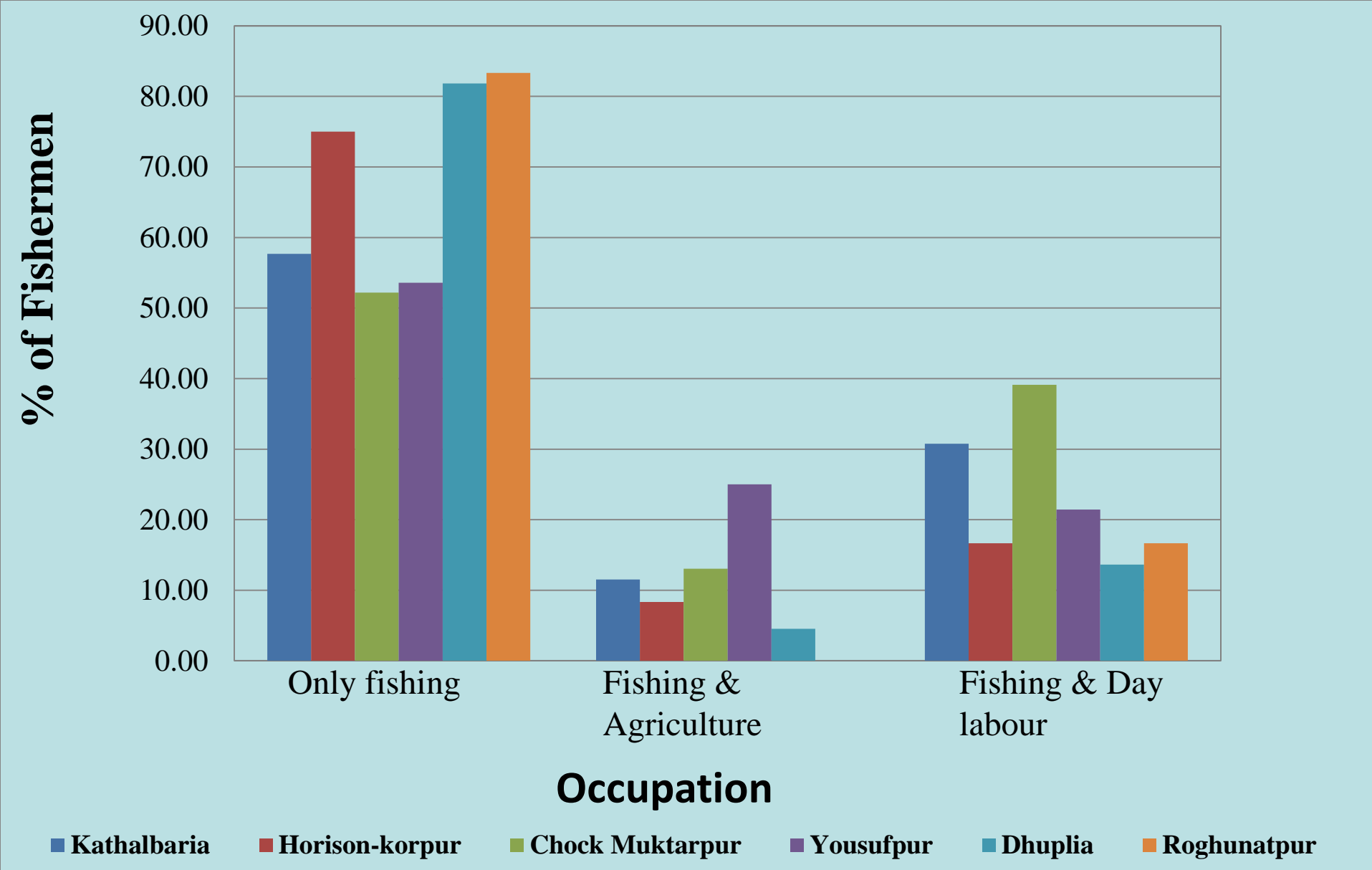
- Fishermen
- Part-time fishermen
- Agriculture
- Local political leaders
- Local influential group
- Wholesalers, retailers, and exporters
- Suppliers
- Private money lenders
- NGOs
- Ministry of Fisheries
- Ministry of fisheries
- Ministry of land
- Ministry of water resources
- Ministry of home affair





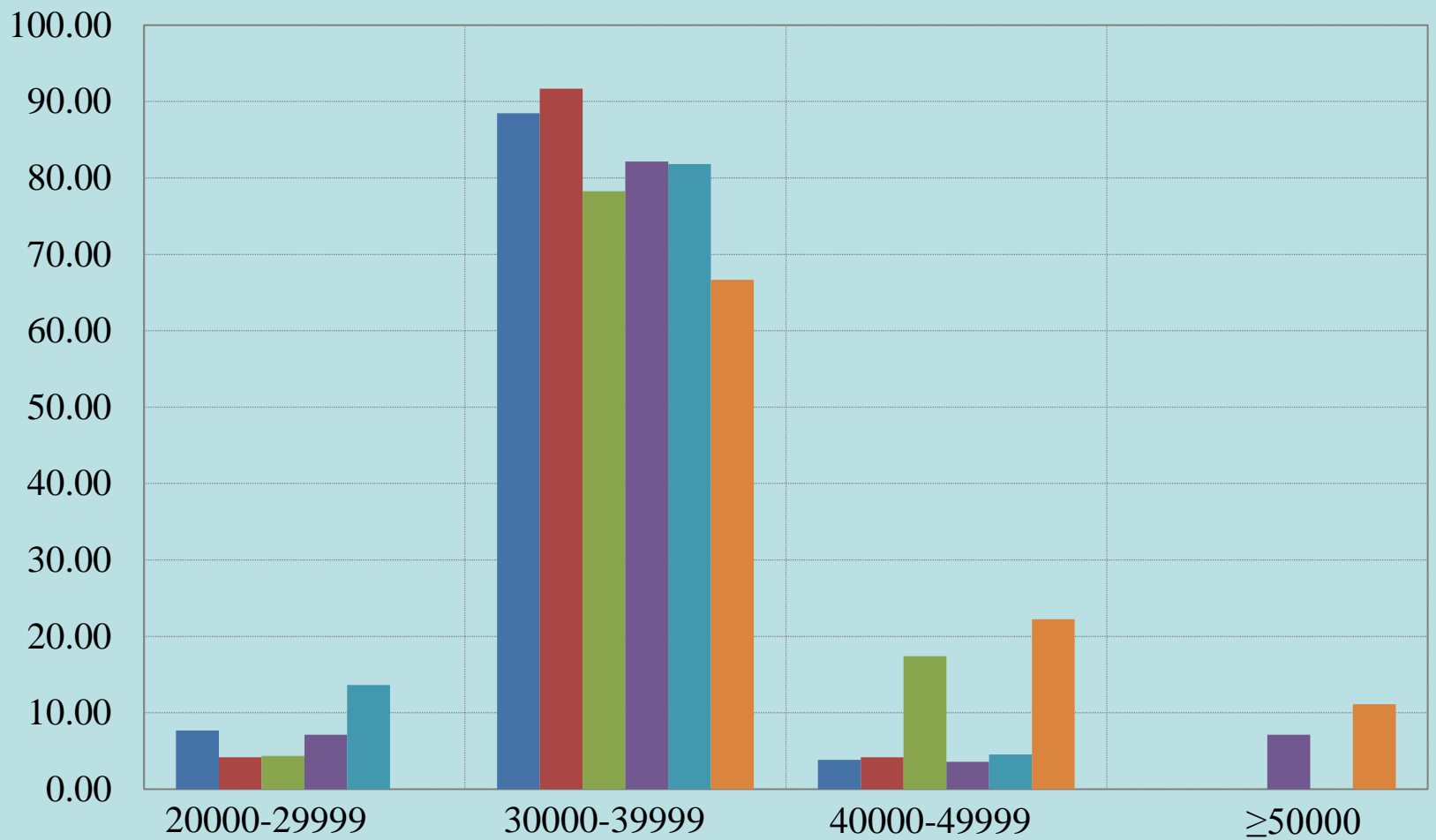


Religious status of Hilsa fishermen



Occupation of the fishermen

% of Fishermen

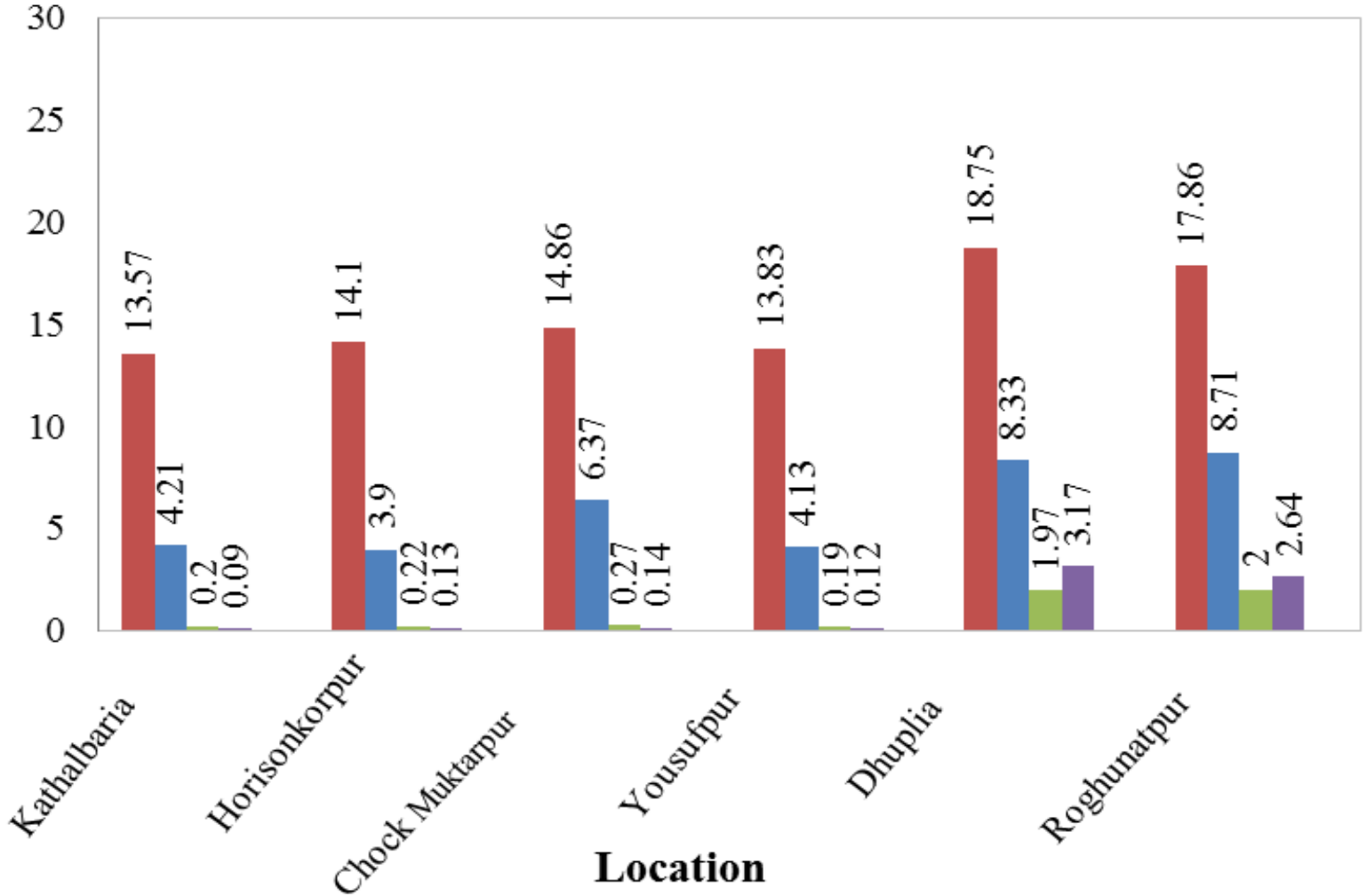


Yearly income limit (Taka)

■ Kathalbaria ■ Horison-korpur ■ Chock Muktarpur ■ Yousufpur ■ Dhuplia ■ Roghunatpur

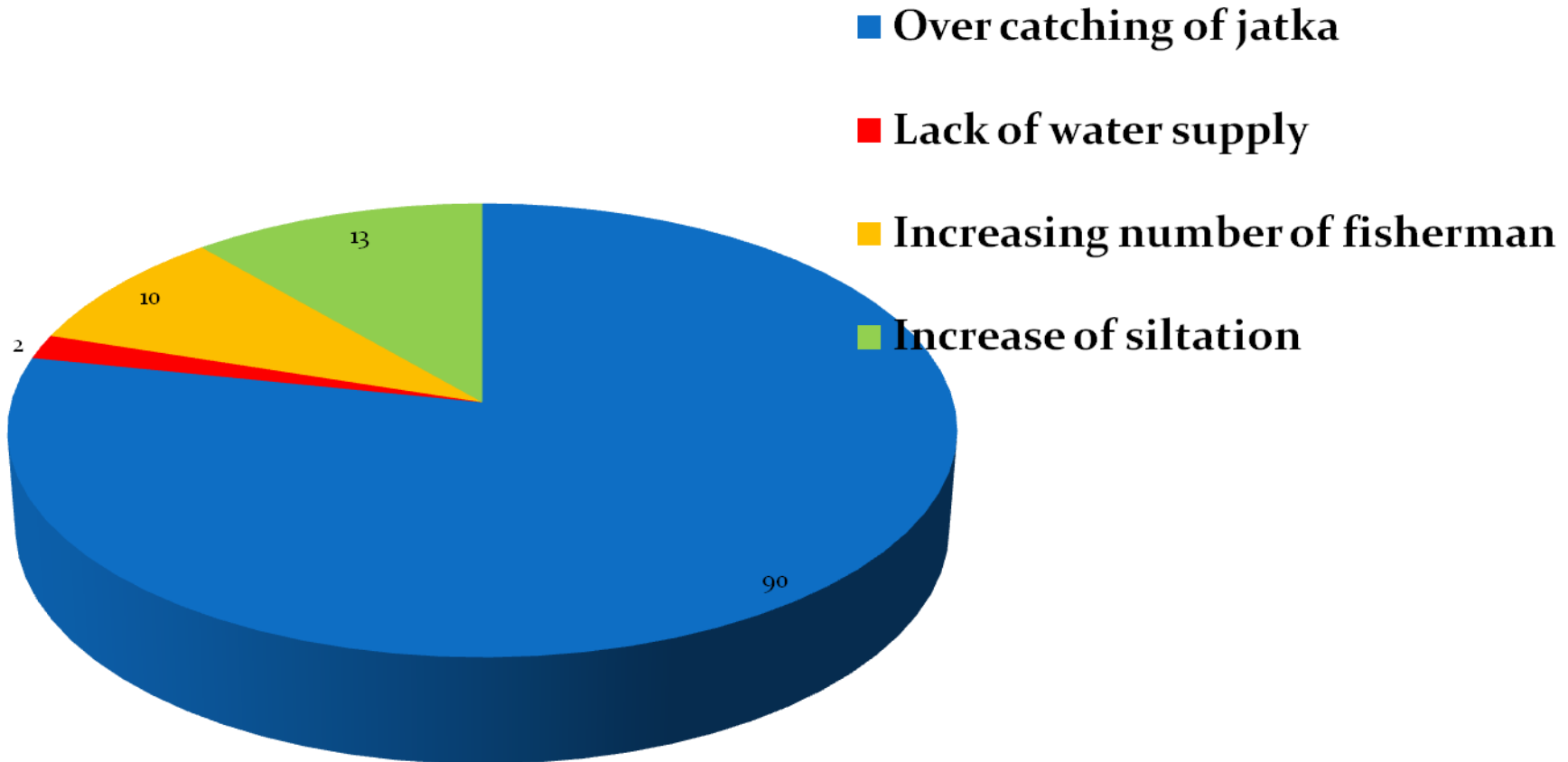
Yearly income

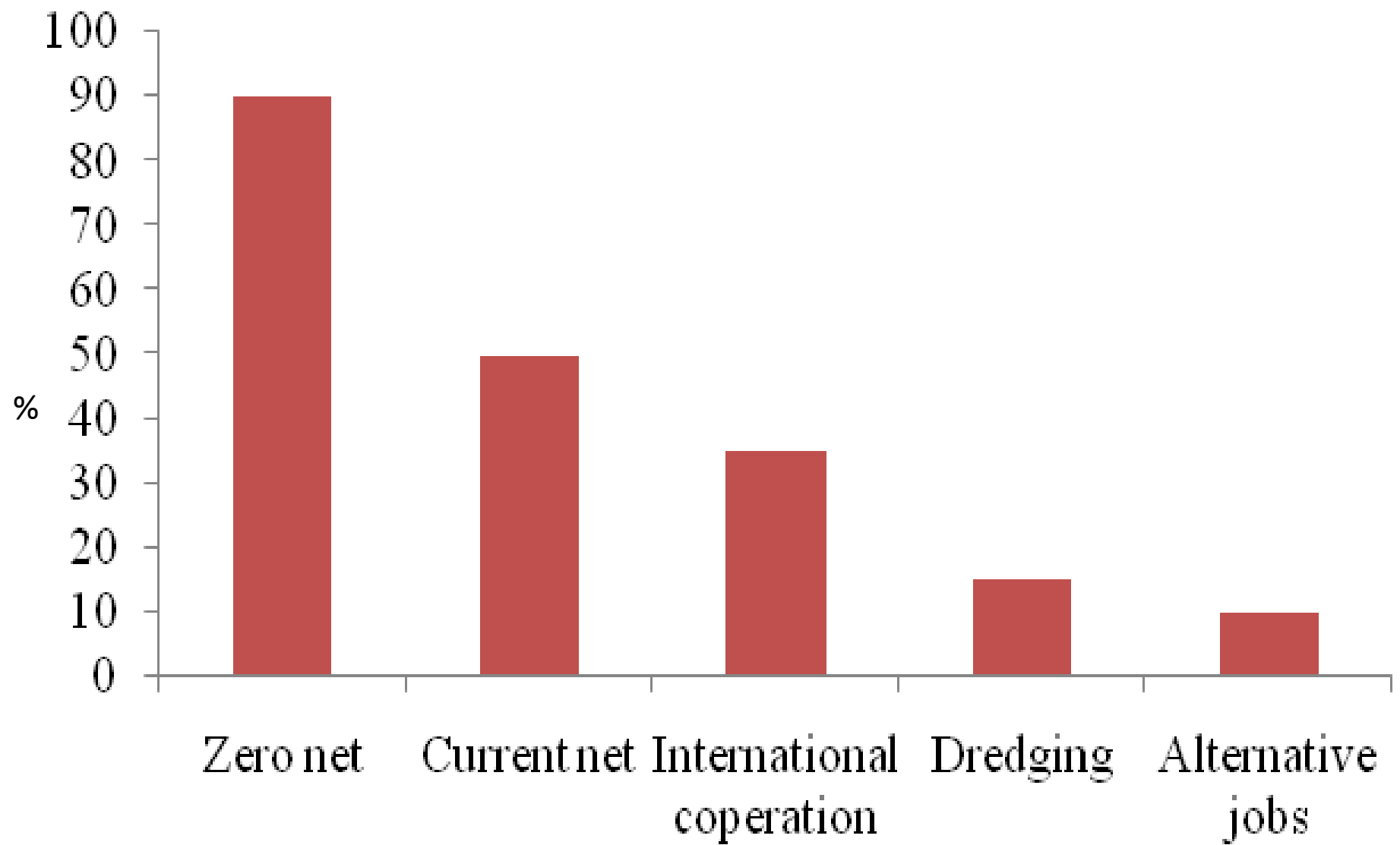
CPUE (Kg/Boat/Day)



■ 1985 ■ 2000 ■ 2010 ■ 2012

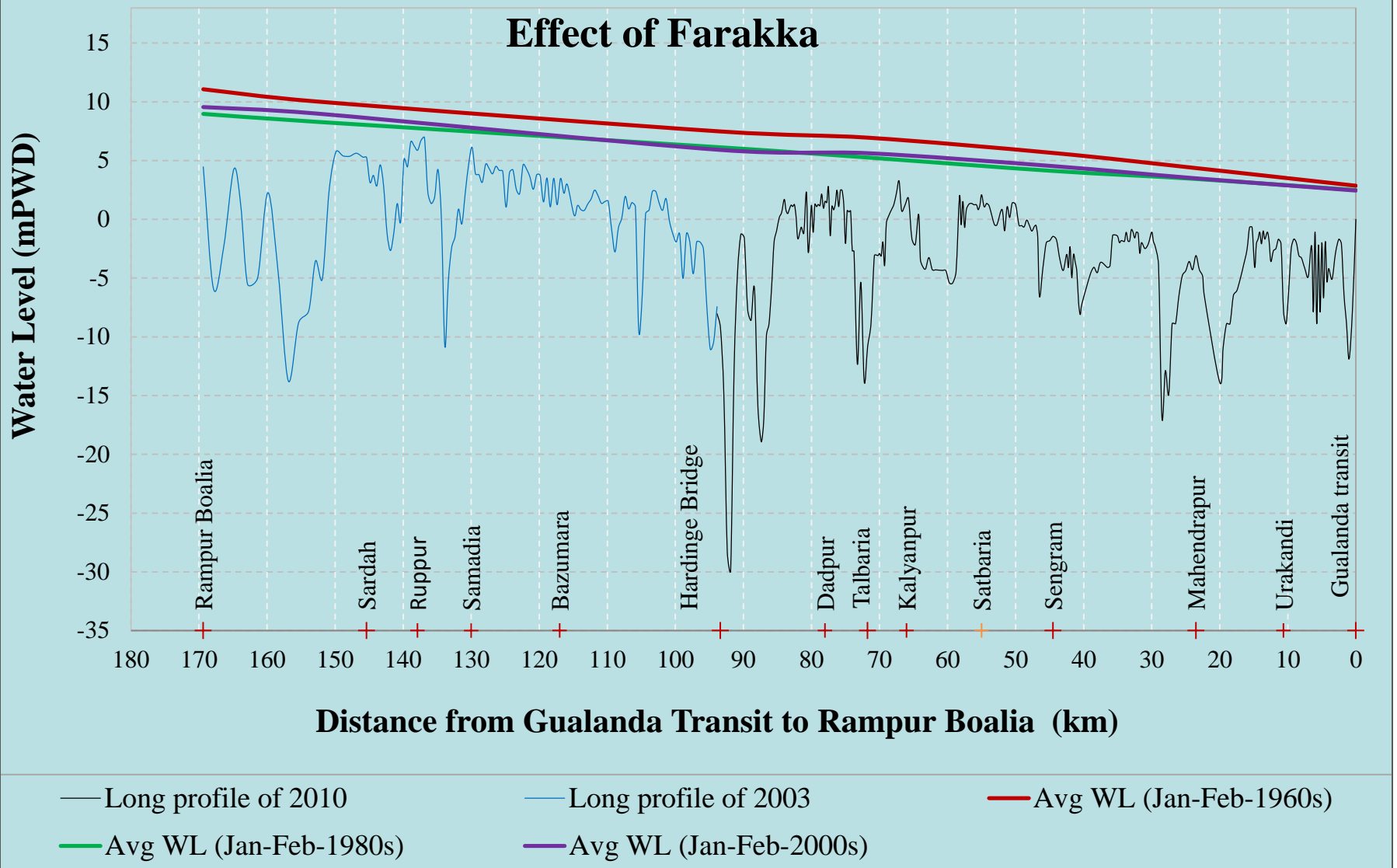
Reason for decreased fishing trends





Perceptions in sustainable management

Effect of Farakka



Combined long profile (2003 and 2010) with average water level (January-February) at different station between Pre-Farakka (1960s) and Post-Farakka (1980s and 2000s)

Conflicts in Hilsa Fisheries

❑ The number of fishermen has been increased

❑ Many part-time fishers are harvesting hilsa in peak season and they behave opportunistically

❑ Landless people (due to river erosion) became fishermen as they have limited alternate job opportunities .

❑ Exploitation of the fishing community by **money lenders**



Conflicts in Hilsha Fisheries (contd.)

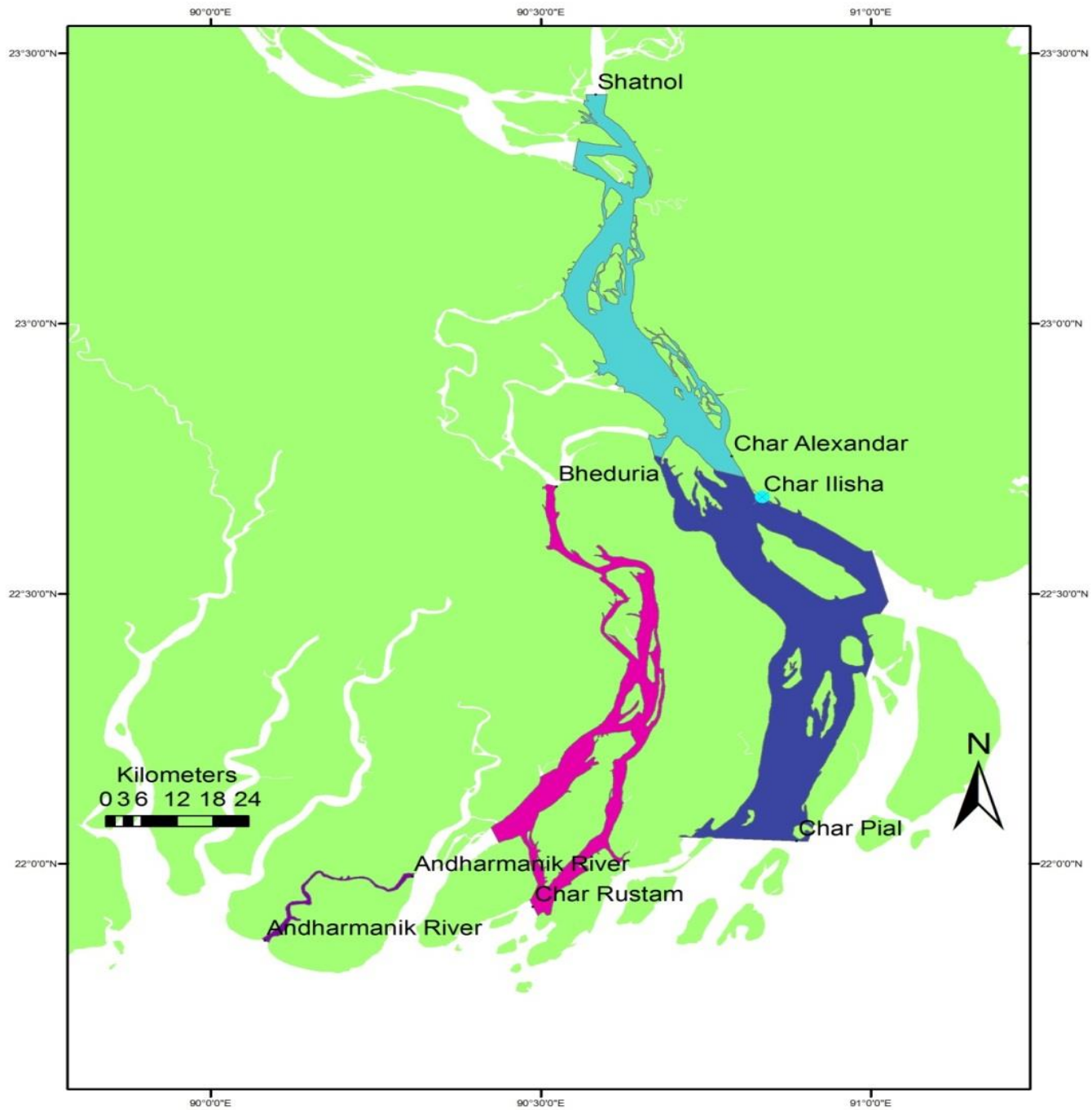
- ❑ Distribution of food support during ban period
- ❑ Violating the government declare ban period by illegal harvesting
- ❑ Intensive fishing in the estuarine mouth region created barrier
- ❑ DoF's capacity problem



Policy recommendations

- Bottom up approach
- Involving the NGOs in capacity building
- Involvement all the stakeholders in monitoring and policy implementation program
- Gear restriction (mesh size 100mm) ,licensing, ID card for fisher
- Gear regulation and seasonal bans in coastal and marine areas.
- MPA

Hilsha Sanctuaries



VGF (Vulnerable Group Feeding): a strong monitoring system is needed

Micro-insurance/soft loan

Increased communication for awareness building



Policies for India

NO management

Policy for India

- ❑ Need to strictly adhere to the mesh size (100mm) regulation
- ❑ Identification of spawning grounds for *Hilsa*
- ❑ During the peak spawning period (October-November) a ban on *Hilsa* fishing
- ❑ A similar policy like Bangladesh



Common policies for Bangladesh-India

- Seasonal catch ban in both Bangladesh and India at the same time
- Banning of bag nets, lift nets and small meshed gill nets (3cm) to the sea mouth
- Maintain proper water flow
- Farrakh barrage should be opened at least 20 days during breeding period
- Joint stock assessment, MPA
- Hopefully gradually moving to harmonised management

Trans-boundary Policy Dialogue between Bangladesh-India



Indicators of success

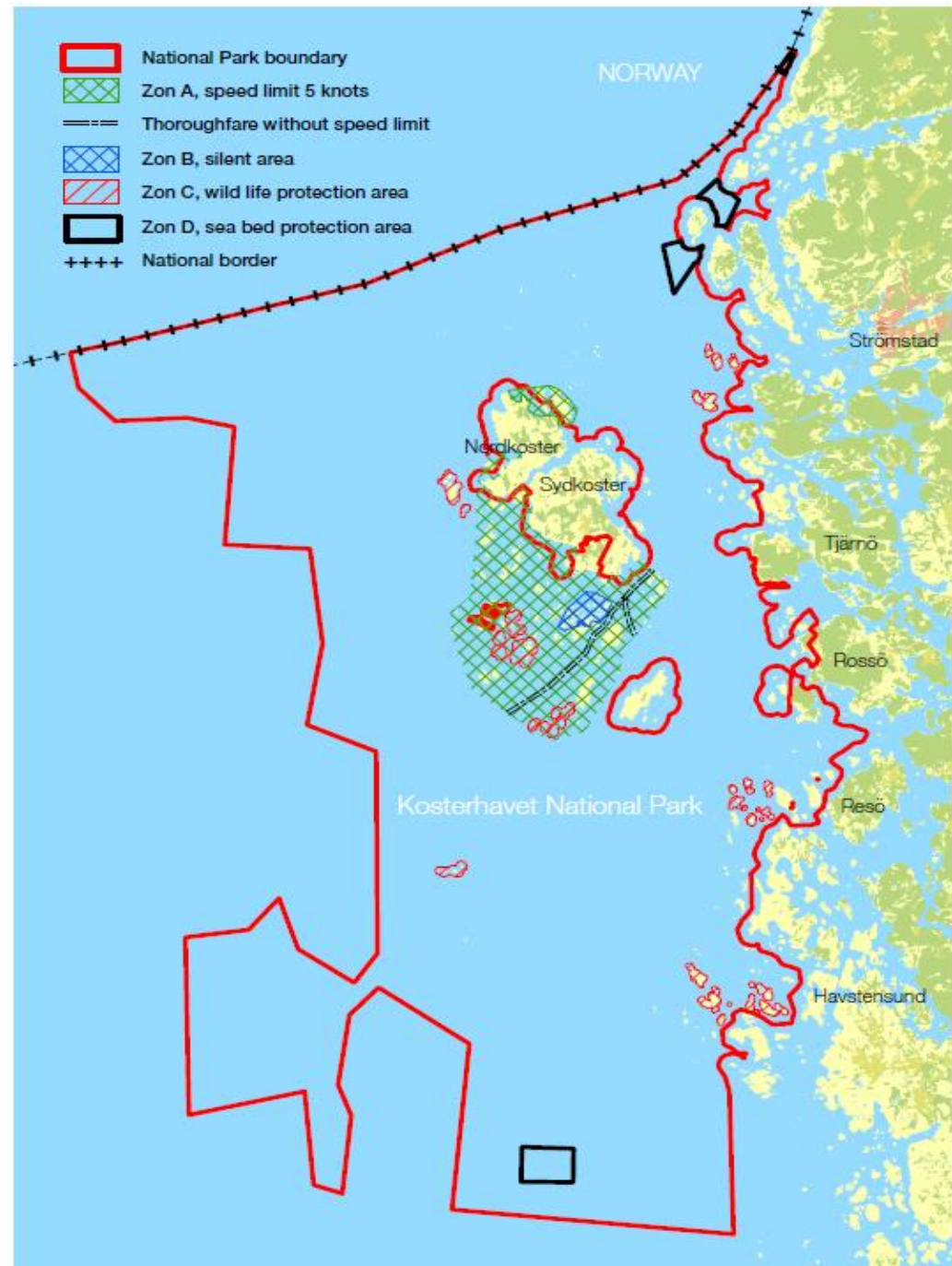
Joint research is on going

India has started working on identifying the breeding ground and MPA

India has also started imposing on seasonal banning

Kosterhavet (Ytre Hvaler) National Park

- ❑ First marine park in Sweden (inaugurated in 2009)
- ❑ Located in [Strömstad](#) and [Tanum](#)
- ❑ 388.78 km²
- ❑ Over 6,000 marine species, about 200 of them not to be found elsewhere in Sweden



Time line for the evolution of Kosterhavet's marine national park

Year	Events
1930s-80s	Volunatry regulation by local (shrimp) fisheries group. Barely accepted by national fishermen organisations and outside fishermen
1989	First proposal for a Marine Park (urged by Swdish Evn Protection Agency) rejected by local communities
1994	Swedish nature Conservation NGO raises profile of proposal. Conflicts with fishermen
1995	Dialouge with stakeholders (e.g. fishermen, NGOs, scientists)
~1995	Fishermen create Koster-Fjord group to ensure user interests taken into account
2004	Project is accepted by local municipalities (proposed by Swdish Evn Protection Agency)
2006	Presentation of initial proposals and Public Hearing
2009	National park was established

Conclusion

- ❑ We all are facing challenges (e.g. in EU and South, South-East Asia)
- ❑ Need research based management (lacking in developing part of the world)
- ❑ Stakeholder involvement
- ❑ Organizational commitment and change
- ❑ Vertical and horizontal integration, inclusion
- ❑ Problems are dynamic and need to be monitored regularly ; *adaptive management*

INTREGRATION

INCLUSION

SUSTANABILITY

DEVELOPMENT



THANK YOU