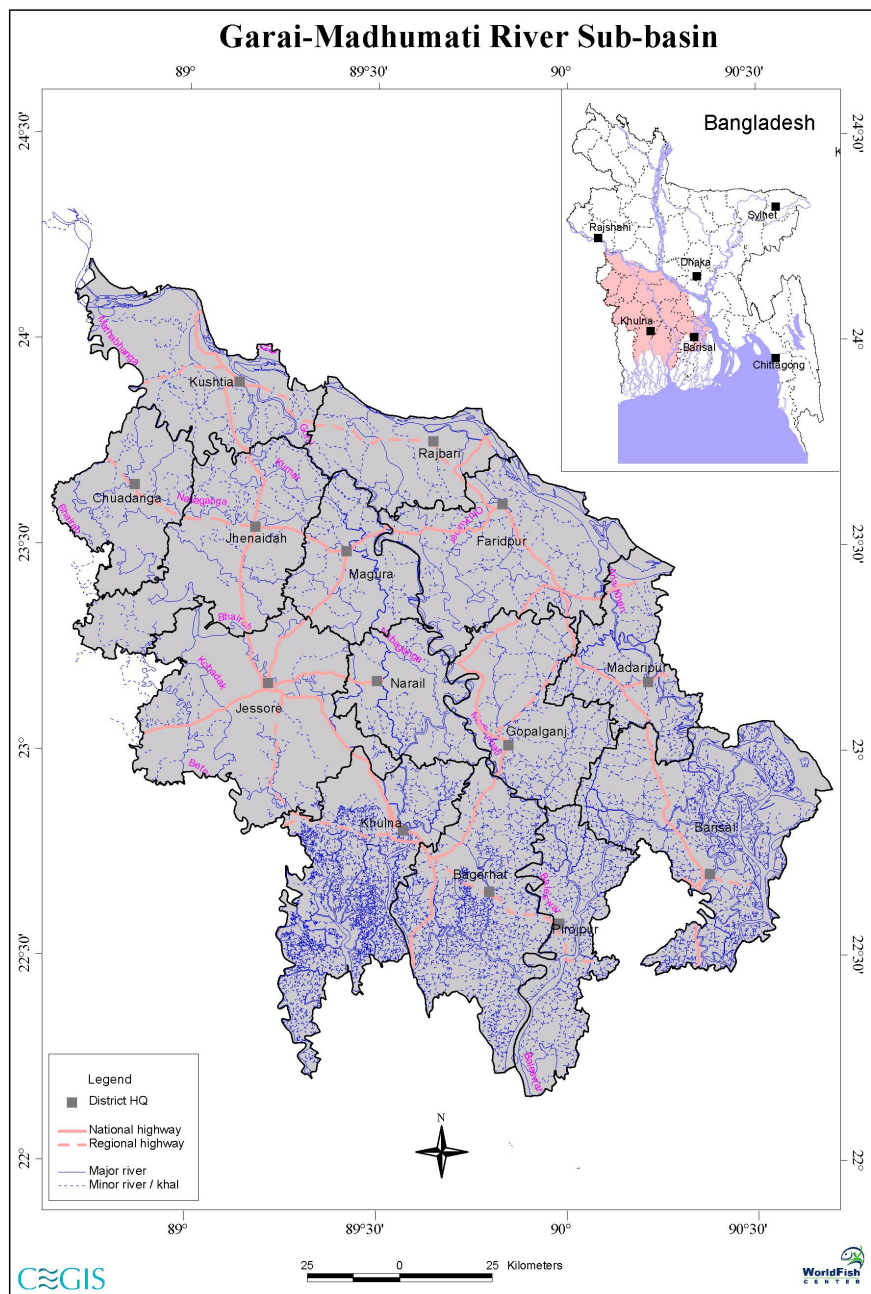


Assessing and improving poverty and fish productivity in the Eastern Ganges Basin

Susana Hervás Ávila

Objectives

- Review what we have achieved during the first phase of the project with respect to each work package.
- Introduce the direction and specifics of the study for the second phase of the project for finalizing on deliverables and outputs.



Study area

- WorldFish Bangladesh focus is the Eastern Ganges Basin
- Sub basin focus is the Gorai – Modhumati

Structure

What we want to achieve

What we have done: 1st phase

What we will do: 2nd phase

What we want to achieve

What we have done

What we will do

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What we want to achieve

- Contribute to the water productivity analysis by developing a methodological framework for analyzing the water productivity of fish in the context of the IGB.
- Explore fisheries productivity throughout EGB in order to address potential low cost pro-poor interventions that will maximize productivity.

What we want to achieve

What we have done

What we will do

1st phase: What we have done

3. Water productivity	Report on fisheries productivity analysis for sub-basin up to district level based on most recent data.
4. Institutional Analysis	Report on review of policies and institutions in fisheries.
5. Intervention Analysis	Some review of interventions (national level projects). Still researching.

What we want to achieve

What we have done

What we will do

Water productivity

- Fisheries productivity analysis of the 14 Districts of the *Gorai-Modhumati* sub basin from secondary data:
 - **Capture** fisheries: *beels* (low lying depressions in the floodplain e.g. small lakes), *baors* (oxbow lakes) and rivers.
 - **Culture** fisheries: cultured, culturable and derelict ponds.

What we want to achieve

What we have done

What we will do

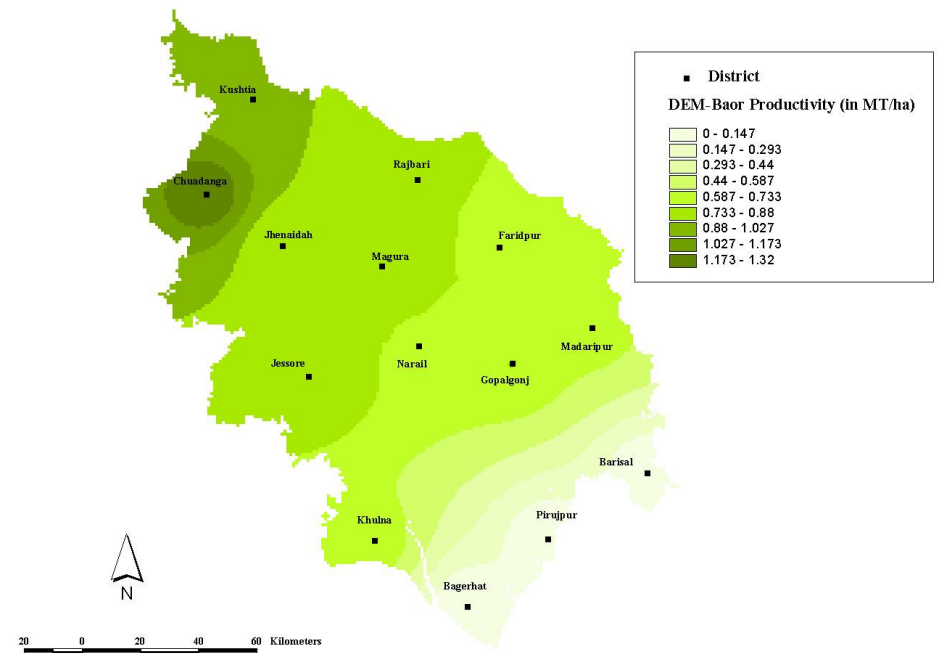
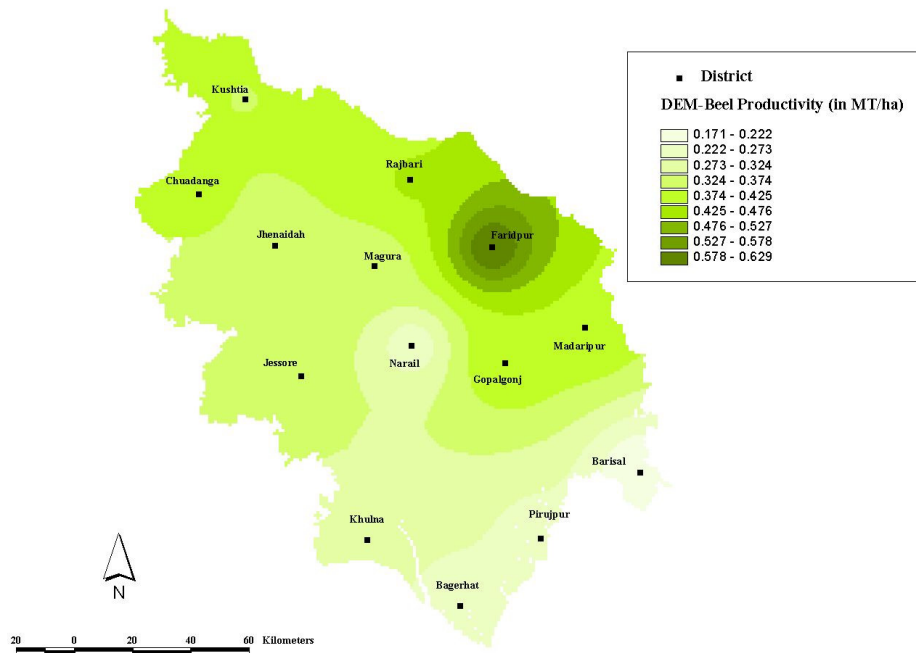
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Capture fisheries – *within habitat comparison*

Beel productivity (Mt/ha)

Baor productivity (Mt/ha)



What we want to achieve

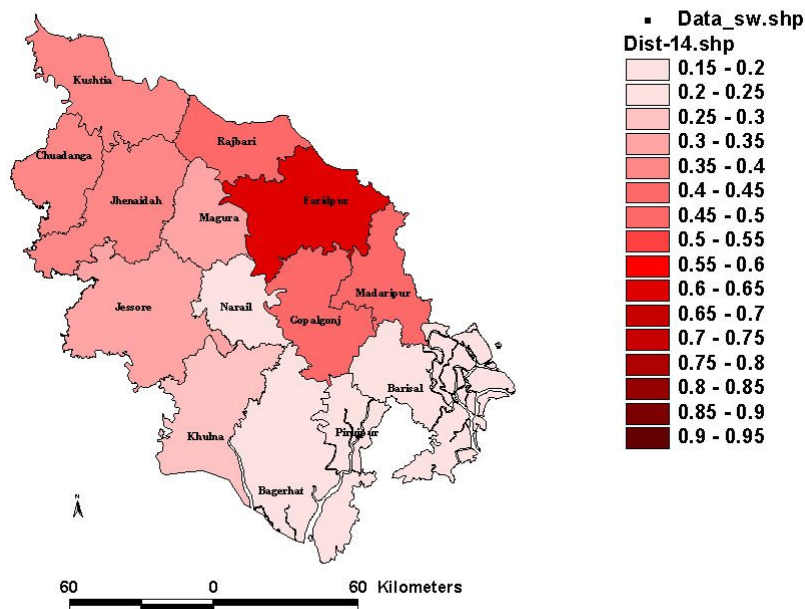
What we have done

What we will do

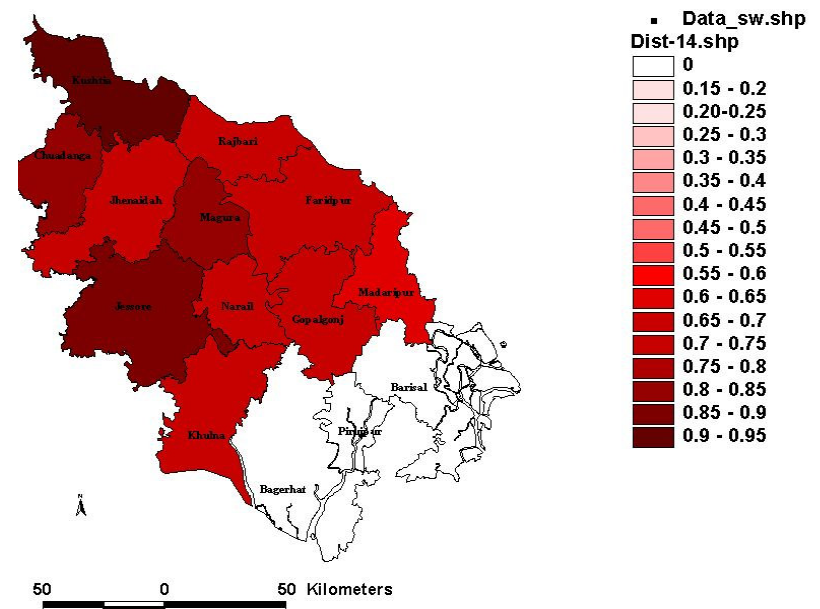
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Capture fisheries – *between habitat comparison*

Beel productivity (Mt/ha)



Baor Productivity (Mt/ha)



What we want to achieve

What we have done

What we will do

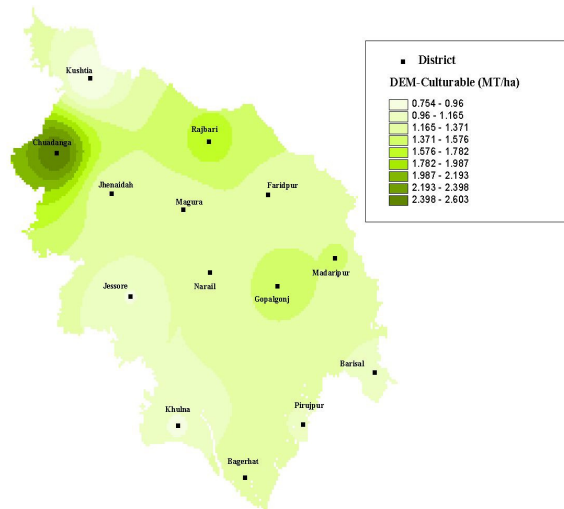
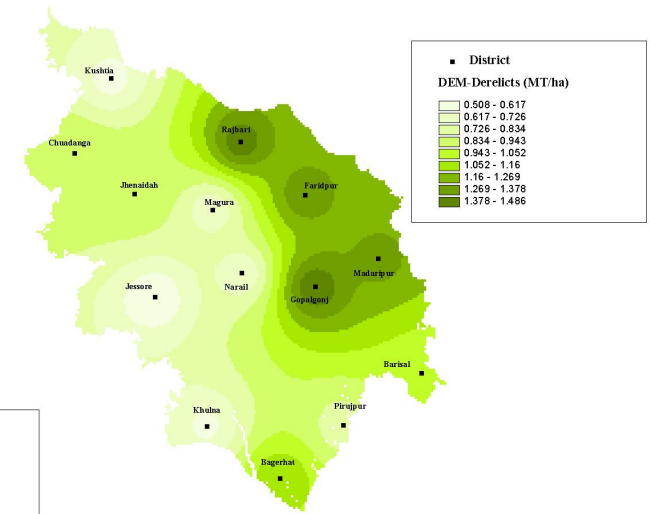
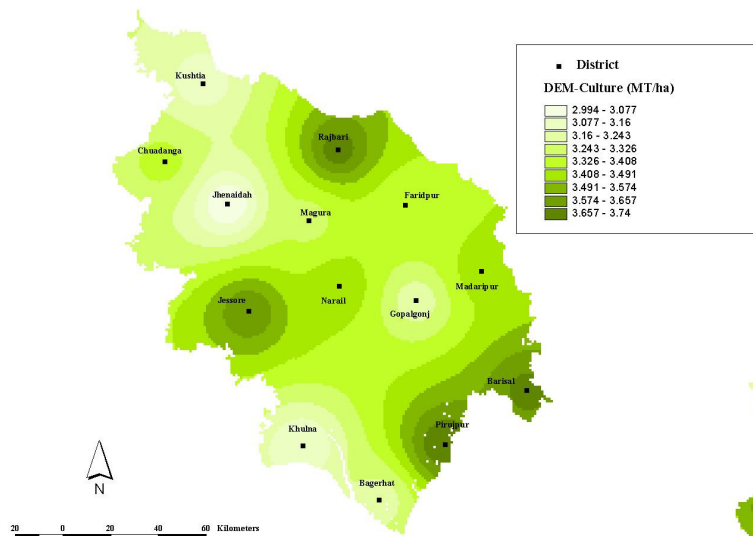
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Aquaculture – *Within habitat comparison*

Cultured pond

Derelict pond

Culturable pond



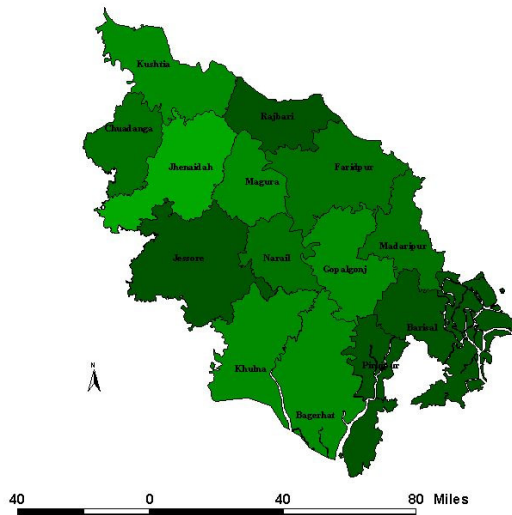
What we want to achieve

What we have done

What we will do

Aquaculture – *between habitat comparison*

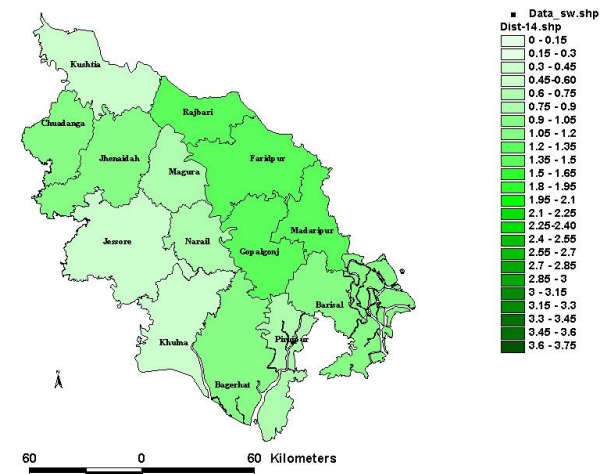
Cultured pond productivity (Mt/ha)



Cultureble Pond Productivity (Mt/ha)



Derelict pond productivity (Mt/ha)



What we want to achieve

What we have done

What we will do

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What is causing the differences?

- Hydrological / physical aspects

- Proximity to the *Padma*
- Salinity
- Soil water retention
- Pollution
- Water diversion / de-linkage / siltation due to natural reasons or previous project interventions

- Institutional factors

- Access
- Ownership
- Policies
- Extension services
- Past project intervention

What we want to achieve

What we have done

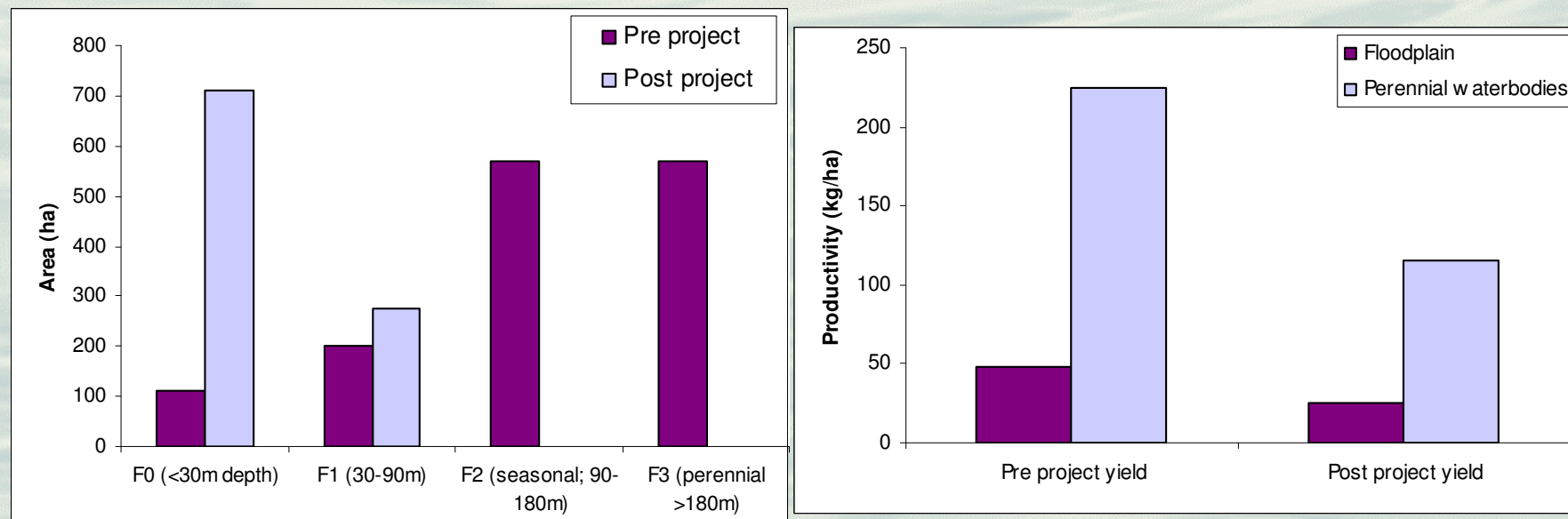
What we will do

partnership • excellence • growth



Previous project intervention example

Interventions for flood control, drainage, irrigation, agricultural intensification.



LGED project (1998) on agricultural intensification

What we want to achieve

What we have done

What we will do

Institutional Analysis

- Productivity in aquaculture is linked principally with the institutional developments, where there is a huge presence of GO and NGO institutions in the area.
- Strong institutional arrangements also involve well established extension services, where fish seeds are easily and cheaply available. This creates a buffer area.
 - E.g. Jessore District: Good extension services – hatchery and seed dissemination system.
- The institutions at the community level, e.g. WMC, FRUG, CBOs, need empowerment for management and decision making.

What we want to achieve

What we have done

What we will do

Policy reviews

Policies reviewed in integrated water resource management perspectives:

- National Fisheries policy
- National Agriculture policy
- National Water resource policy
- National Environment policy
- National land policy
- Agricultural land-use policy
- Other policy related reviews and analysis documents

What we want to achieve

What we have done

What we will do

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Policy Issues and conflicts

- Agriculture policy stands alone and focuses on rice cultivation intensification:
 - HYV rice – excessive water demand
 - Claim agricultural lands through conversion of wetland to dry land
 - Which causes a decrease in water availability and decline in capture fisheries production
 - Impacting livelihoods of landless and marginal farmers
 - Aquatic ecology and fisheries productivity issues are ignored in Agric. activities
- Water policy & Env. policy are in full support of Fisheries policy (advocates rice-fish culture, conservation of breeding grounds and deeper parts of WB)
- Policy needs review and integration – policy scaling-up needed

Intervention Analysis

- Broad scale project set the ground for our 2009 review to evaluate possible interventions:

- Importance of stakeholder participation and reestablishment of lost ownership
- Aquaculture technologies
- Landscape based resource management (e.g. sanctuary establishment)

CBFM	(Comm based fisheries mgt)
MACH	(Mngt of Aq Ecos through Comm Husbandry)
FFP	(Bangladesh Fourth Fisheries Project)
SSWRP	(Small scale WR Dev Sector Project in BD)
DSAP	(Dev of Sust Aq Project)
BFRI	(BD Fisheries Res Institute)

What we want to achieve

What we have done

What we will do

2nd phase: What we will do

3. Water productivity	<ul style="list-style-type: none">• Time series data analysis of fisheries productivity.• Case study: Estimate water productivity of fish, identify physical and institutional productivity hindrances in single and multiple water use systems in the EGB and link fisheries productivity to poverty
4. Institutional Analysis	Institutional capacity of local NGO / GO Areas of Empowerment of local institutions
5. Intervention Analysis	Primary data collected from field visits to local governments on previous project interventions.

What we want to achieve

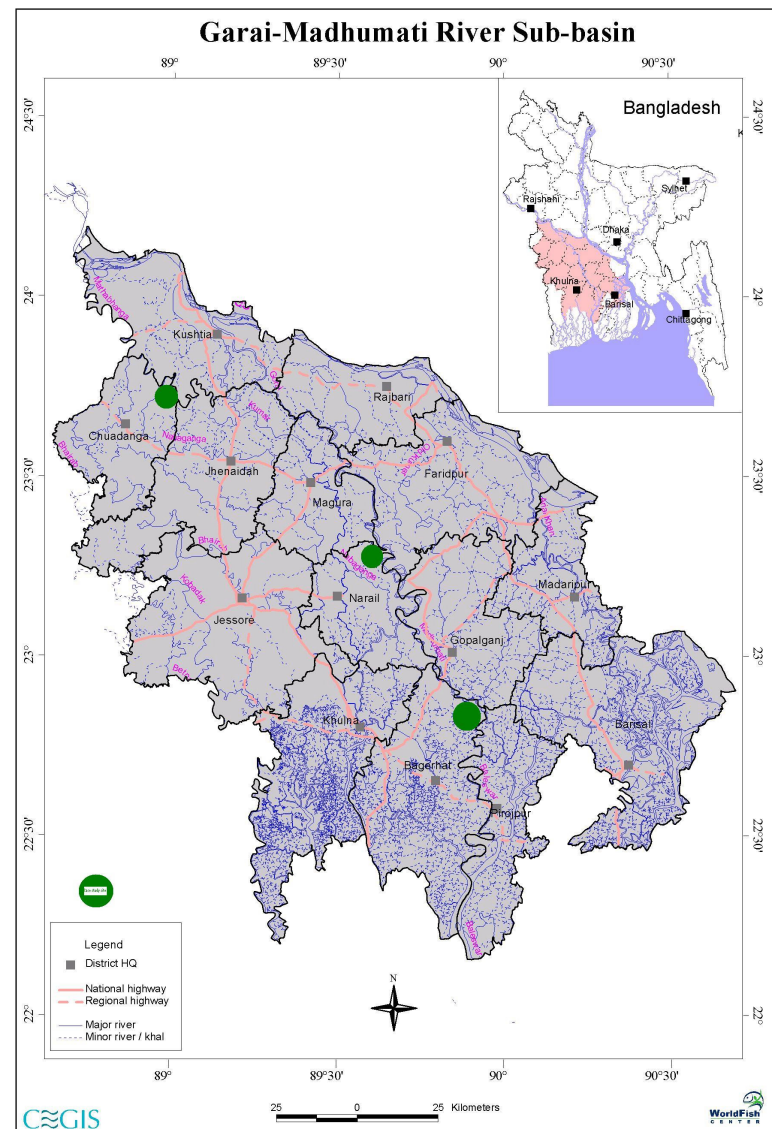
What we have done

What we will do

Corroborating the CPUA(W) data

- **Case study:**

- Purposive sampling 1,000 fisher HH
- 3 district areas: Chosen on the basis of fisheries productivity, fisher intensity, poverty and hydrodynamics.
- Different fisheries systems:
 - Capture (Beels, Rivers)
 - Culture (IAA, Rice fish, Commercial polyculture, Low input ponds)



What we want to achieve

What we have done

What we will do

Measuring water productivity of fish

ISSUES

- Focus on aquaculture ponds
- Water volume estimation
- Pond production
- Comparing fish to different crops, e.g. water hungry HYV rice, for a trade off analysis (more return per drop)

Pro-poor focus. Can't look at return in isolation

Perhaps address a possible win-win situation → integration

Non consumptive
Rainfed v. groundwater?
Perennial v. seasonal ponds

Case study questionnaire

– Develop questionnaire to determine:

- Productivity (kg and monetary)
- Social poverty
- Economic aspects (CBA)
- Marketing
- Water access and ownership
- Institutional involvement in the area
- Previous project intervention effects
- Environmental cues
- Local knowledge / Farmer perception

What we want to achieve

What we have done

What we will do

Linkage to social poverty

- Focus on pro-poor interventions
- Increasing fisheries productivity in aquaculture may lead to a uncompensated benefit for the better-off households (i.e. land owners).
- Capture fisheries is what the landless rely on.
- Poverty reduction will focus on increasing water productivity through physical and governance aspects.

What we want to achieve

What we have done

What we will do

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Institutional and Project intervention and analysis

- Local GO/NGO institutional analysis.
- Collection of project intervention documents in the field to study their effects on fisheries productivity.
- Analysis of project interventions:
 - Fisheries management and aquaculture development
 - Agricultural intensification
 - Other water resources (e.g. FCD, FCD/I, Embankment, polder)

What we want to achieve

What we have done

What we will do

Summary

	2008	2009
3. Water productivity	Report: Fisheries productivity analysis on present data	<ul style="list-style-type: none"> • Time series fisheries productivity analysis • Case study <ul style="list-style-type: none"> – water productivity estimation – ID constraints
4. Institutional Analysis	Report: National Policy and Institutions Review	Local NGO / GO
5. Intervention Analysis	Some review of national level intervention projects	Primary data collection of project interventions

What we want to achieve

What we have done

What we will do

Thank You

Inputs and comments appreciated!