

Vulnerability and poverty dynamics:

**Understanding livelihood strategies across socio-economic groups
in south-western coastal Bangladesh**

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Research overview

Objectives

- To understand how vulnerability to multiple stressors vary according to households' socio-economic category
- To analyse how livelihood strategies adopted by one socio-economic group impinges on the adaptive capacity of another

Research methods

Qualitative

Focus group discussion (2 in each village)

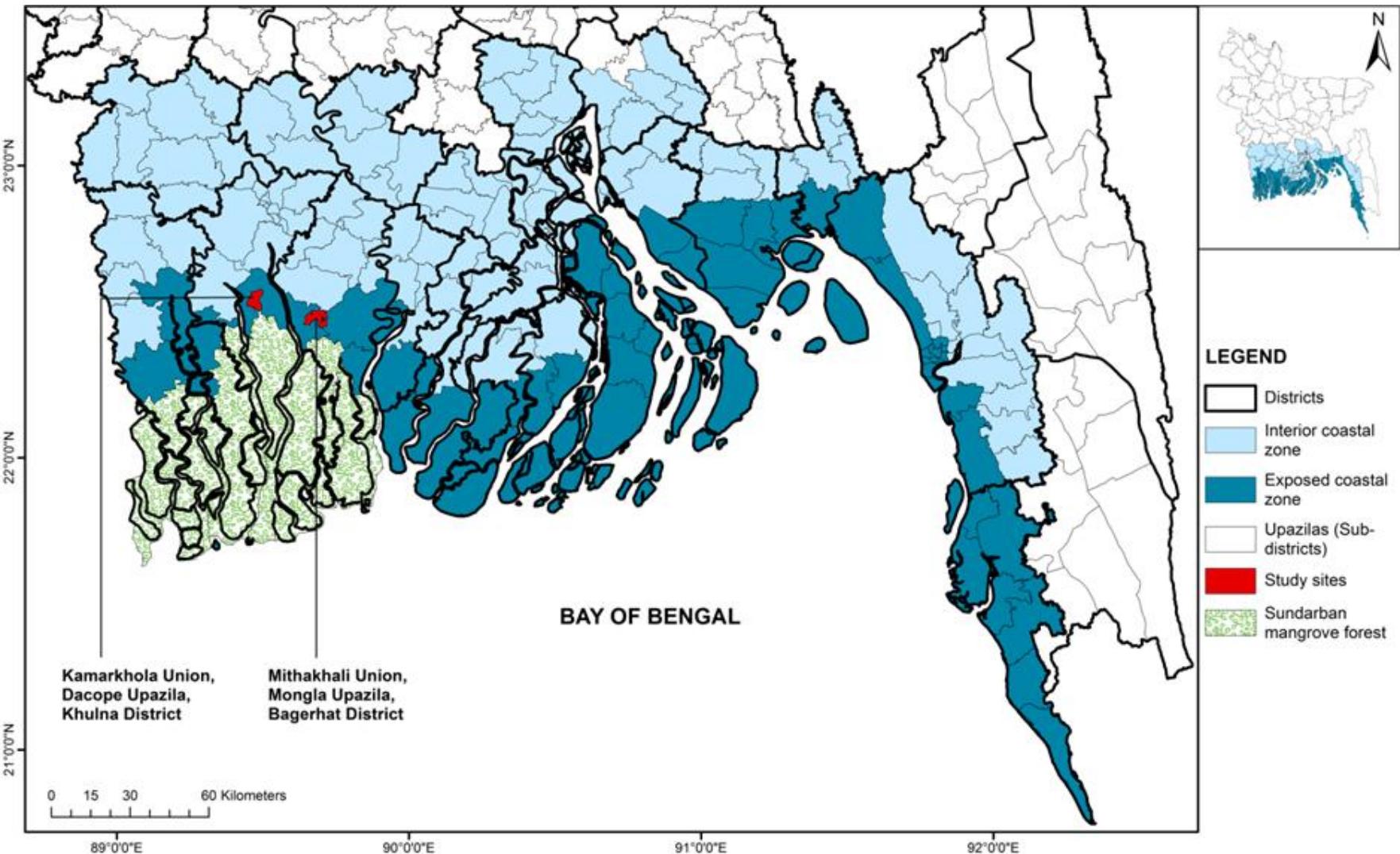
Participatory wealth ranking

Livelihood trajectory interviews (25 in each village)

Quantitative

Household questionnaire survey (150 out of 600 households in each village)

Study Sites



Vulnerability to multiple stressors

NATURAL SHOCKS AND STRESSES

NATURAL HYDROLOGY

- Dry season – Reduced upstream river flows and increased salinity in coastal region
- Wet Season – Greater upstream river flows and decreased salinity in coastal region

CLIMATE CHANGE

- Sea-level rise
- Changes in precipitation
- Increased ice melting in the Himalayas
- Changes in river flows
- Salinity front pushed further inwards
- Increase in frequency and intensity of cyclones

ANTHROPOGENIC STRESSORS

NATIONAL POLICIES

- Green revolution to increase agricultural production
- Blue revolution to foster export-oriented economic growth

STRUCTURAL MEASURES

- Coastal embankment project
- Farakka Dam on the Ganges in India
- Internal water diversion projects

Changes in farming system from paddy cultivation to brackish water shrimp farming

IMPACTS ON SOCIO-ECOLOGICAL SYSTEMS

ECOLOGICAL IMPACTS

- Increase in soil and water salinity
- Decrease in common pool resources
- Decrease in agro-ecosystem health; increased disease outbreaks

SOCIO-ECONOMIC IMPACTS

- Lack of rice, livestock, vegetables and fisheries for subsistence
- Reliance on cash economy; increased expenses
- Decreased or unsustainable livelihood options

Changes in farming systems

Both Kamarkhola and Mithakhali (T0)

Before shrimp cultivation started (1980s and before)

Aman paddy (Local varieties)

(1.2 tonnes per acre)

Kamarkhola (T1): Shrimp and paddy cultivation (1990s – 2008)

Mithakhali (T1): Shrimp and paddy cultivation (1990s – early 2000s)

Brackish water Bagda shrimp

Aman paddy (Local varieties)

(0.6 tonnes per acre)

Kamarkhola (T2): After shrimp cultivation was banned (2009 - present)

Aman paddy (HYV BR23)

(1.8 tonnes per acre) +

White fish & Galda prawn

Mithakhali (T2): After rice cultivation was stopped (early-2000s to present)

**Brackish water Bagda shrimp +
Predatory fish**

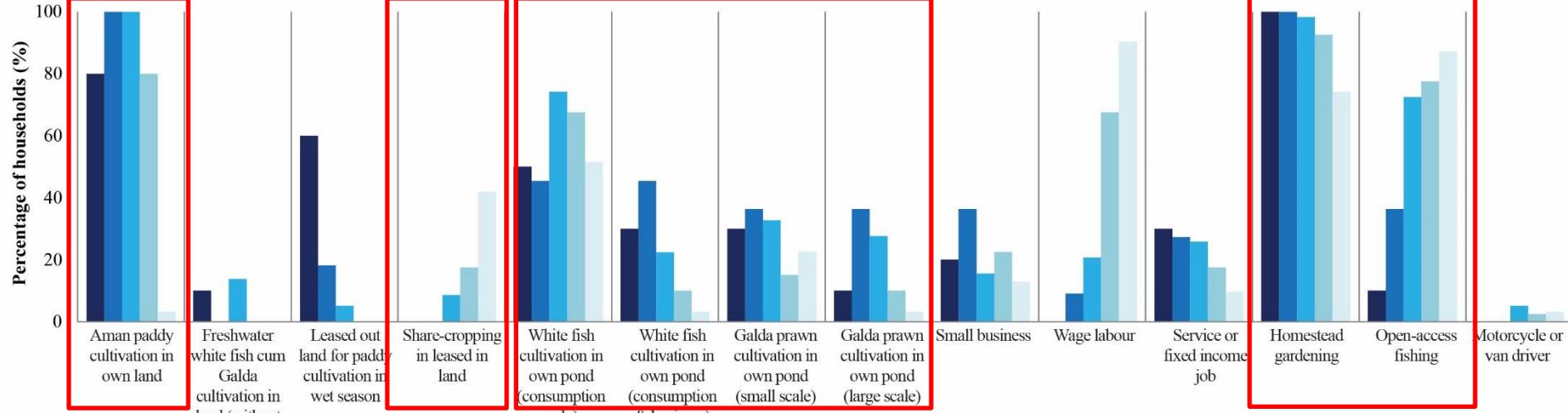
Fresh water white fish



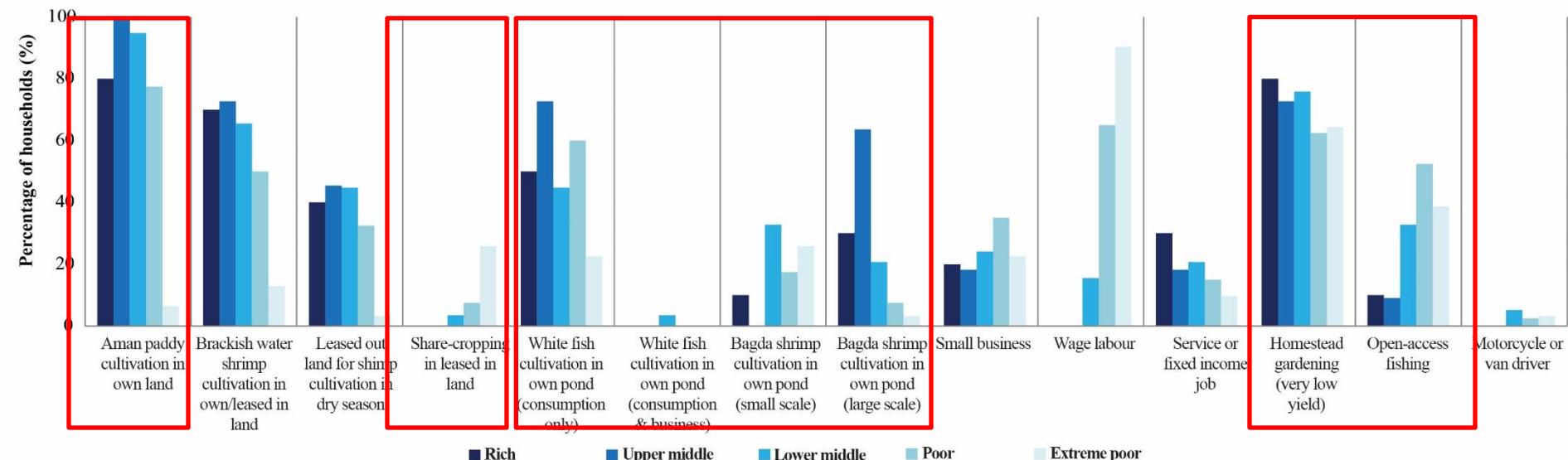
Productive assets at household level

Study site	Socio-economic category	Number (percentage) of sample households	Productive assets (Average)		
			Agricultural land (acres)	Homestead land (acres)	Pond (acres)
Kamarkhola	Rich	10 (6.7%)	15.54	0.65	0.24
	Upper middle	11 (7.3%)	5.97	0.43	0.21
	Lower middle	58 (38.7%)	2.20	0.23	0.12
	Poor	40 (26.7%)	0.58	0.11	0.05
	Extreme poor	31 (20.6%)	0.13	0.07	0.03
	Rich	7 (4.7%)	22.53	1.49	0.43
Mithakhali	Upper middle	18 (12%)	7.36	0.66	0.14
	Lower middle	52 (34.7%)	3.78	0.33	0.98
	Poor	50 (33.3%)	1.42	0.29	0.11
	Extreme poor	23 (15.3%)	0.04	0.05	0.03

Livelihood strategies at household level in Kamarkhola



A. After shrimp cultivation was banned(2009 - present)



B. During shrimp and paddy cultivation (1990s - 2008)

■ Rich ■ Upper middle ■ Lower middle ■ Poor ■ Extreme poor

Diversified livelihoods in Kamarkhola

Rich - Reluctantly engaged in agriculture or dependent on land rent; planning to move towards semi-intensive shrimp farming



Upper middle - Within farm strategic diversification – crops, Galda prawns and white fish

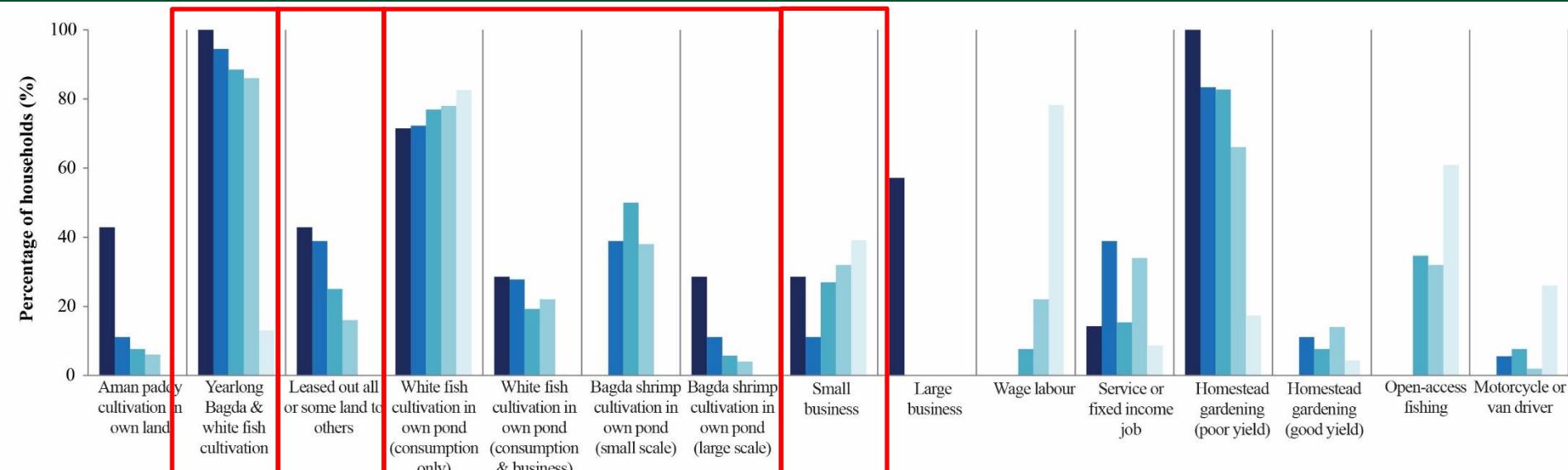
Lower middle - Strategic diversification comprising of farm and non-farm activities

Poor - Diversification across farm, off-farm and non-farm activities for survival

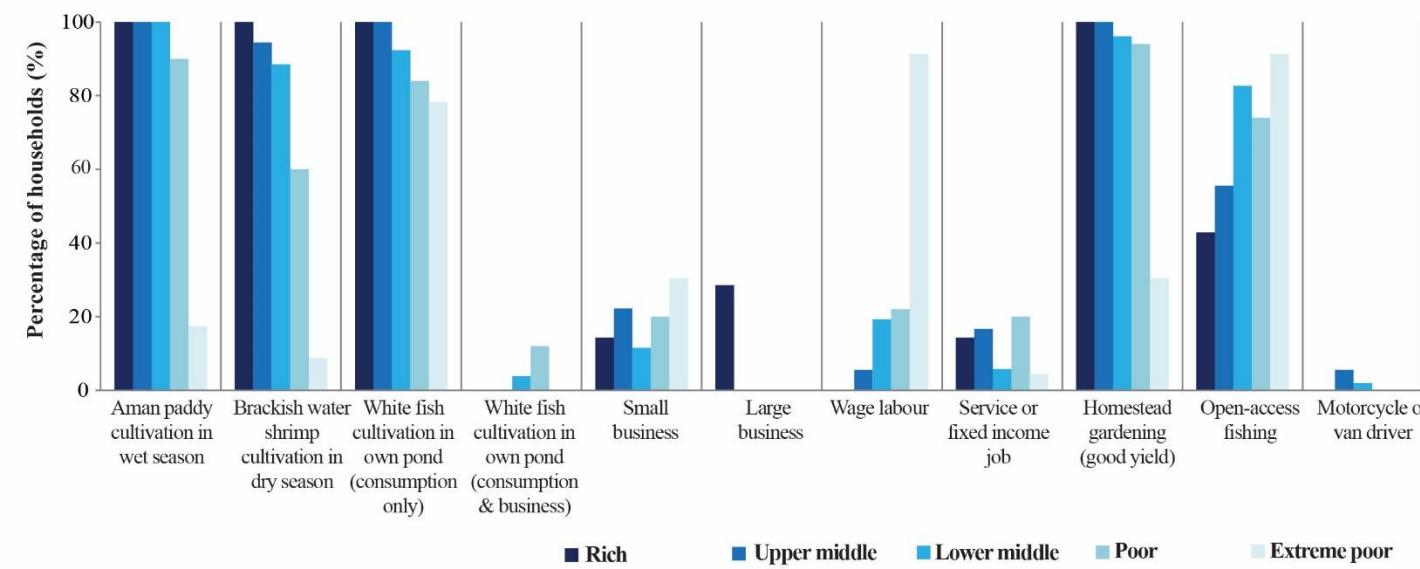
Extreme poor - Depended on physical labour



Livelihood strategies at household level in Mithakhali



A. Shrimp and white fish cultivation (early 2000s - present)



B. Shrimp and paddy cultivation (1990s - early 2000s)

Specialised livelihoods in Mithakhali

Rich - Specialization in shrimp and fish cultivation, with associated businesses

Upper middle - Specialization in shrimp and fish cultivation, with some involved in service

Lower middle - Dependent on shrimps and small businesses; lease out land, have small independent farms, or part of co-operative farms

Poor - Dependent on shrimps; lease out land, have small independent farms, or part of co-operative farms

Extreme poor - Depended on physical labour and petty trades



Research findings

- Asymmetric resource ownership and power imbalances suffocate the agency of the poor people to pursue their desired livelihood strategies
- Good leadership and institutional support is needed to prevent powerful farmers from pursuing their vested interests and support transformational adaptation that is desirable for majority of households
- Technical support and knowledge dissemination is highly necessary to enable farmers to make successful transitions to new livelihood options, such as freshwater Galda prawn farming and semi-intensive shrimp cultivation
- Local government authorities lack capacity and knowledge to answer farmer queries about shrimp disease outbreaks.
- Most farmers show reluctance to take credit from NGOs, unless they are confident of their ability to repay