

1. Title, objectives and abstract

1.1 Title

Sustainable development in flood basins: Understanding the impacts of pro-poor development strategies on the environment.

1.2 General Objective

- To understand the impact of pro-poor poverty alleviation activities as envisaged in the I-PRSP on the life and livelihood of traditional fishing communities in the Jamuna river basin, Bangladesh.

1.3 Specific (sub) objectives

- To examine the impact of flood mitigation activities on fisheries and fishing activities
- To identify coping strategies undertaken by poor fishing communities in response to flood mitigation activities that negatively affect their livelihood
- In particular, to understand the impact of flood mitigation on migration as a coping mechanism and the consequent effect on poverty
- To value the losses from fisheries and gains from agriculture accruing as a result of flood mitigation projects.
- To estimate the net impact of flood mitigation activities on poverty by assessing changes in different welfare indicators.
- To recommend pro-poor and environment friendly strategies for people living in the river basins.

1.4 Abstract

Riverbank erosion is a major environmental and social problem in Bangladesh, where 30-40% of the population lives close to riverbanks. The Bangladesh poverty reduction strategy seeks to empower communities living on riverbanks by investing in various flood mitigation related activities, including infrastructure development. However, these efforts are likely to have an indirect but substantially negative effect on the livelihood of many poor fishing households since they are likely to disturb and destroy fish habitat and the fishery cycle. Thus, this proposal seeks to examine the net impact of flood mitigation activities on the poor. We will do so by first identifying the various pathways by which erosion control can hamper fish stock and the fishery economy. We will then assess strategies that poor use when confronted with development that helps them with flood control while simultaneously degrading the environment on which their livelihood depends. We will also value the actual changes in welfare by using non-market valuation techniques. Finally, by using quantitative impact evaluation techniques and surveying control and treatment communities, we will assess the net welfare impact of erosion control activities. By using different income and expenditure measures of welfare, we will provide robust analyses of the impact of flood mitigation strategies on the poor, when there are negative environmental effects associated with these strategies.

2. Research methods

2.1 Hypothesis

The hypotheses of the study are:

- a. Erosion mitigation infrastructure policies hamper the breeding grounds of fisheries and increase the costs of subsistence fishing.
- b. Erosion mitigation policies result in a net negative impact on fishing household welfare
- c. Erosion mitigation policies have differing and stronger effects on the core-poor relative to the less poor or rich, who have a greater ability to cope with environmental degradation.
- d. Erosion control policies change the coping strategies of the poor and decrease urban migration
- e Urban migration as a coping strategy reduces consumption poverty but has a negative impact on other social indicators

2.2 Parameters

The parameters to be measured in the study include demographic and socio-economic characteristics, income and expenditure indicators, migration and other labor related actions, daily fish catch (standardized by harvest techniques), other indicators of dependence on nature, access rights to commons, etc. Data will also be collected on indicators of land productivity (within FCDI and outside FCDI areas), infrastructure, and other socio-economic characteristics affected and unaffected by government interventions, benefits/costs accrued to households due to implementation of pro-poor development policies.

2.3 Analysis

The analysis to be undertaken in this study follows three separate strands. First, the study will use quantitative impact evaluation techniques to assess net poverty impacts (see, for example, the World Bank's website on Poverty and Understanding Impact Evaluation). In particular, we will use propensity score and instrumental variable techniques to assess the impact of erosion mitigation on various welfare measures. For understanding coping strategies, we will need to estimate labor supply decisions – this may require developing a farm household model (Singh, Squire and Strauss, 1986). Cost Benefit analysis provides a third analytical framework for this study. We will use non-market valuation techniques to assess changes in agricultural benefits and fisheries.

We will develop social-indicators of environmental degradation and poverty in fishing communities, identify policy impacts, and recommend a monitoring plan to provide feedback on policies related to this sector. The following table summarizes the analytical techniques proposed.

3. Researchers

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