# Pathways towards organic shrimp aquaculture: Challenges, potentials and risks under a livelihood perspective

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#### Introduction

Shrimp is one of the most delicious seafood items in the world. By volume, almost half of shrimp caught from capture fishery and half produced from aquaculture. Worldwide, shrimp aquaculture is growing in different paces. The expansion of shrimp aquaculture is the result of industrial transformation and declination of capture fishery. In Bangladesh, shrimp aquaculture has become an important economic sector. The involvement of national and multinational investors and international donor agencies plays a significant role in the development of the shrimp sector in Bangladesh. Shrimp aquaculture provides immediate economic benefit and generates employment across seed collectors to exporters, which can effectively contribute to poverty reduction and food security. However, fast growing shrimp aquaculture has been facing socioeconomic and environmental challenges in Bangladesh that hinder the sustainable development of this thriving sector. As a consequence, organic shrimp aquaculture has been introduced in Southwest region of Bangladesh as an alternative technique.



## Why organic?

Organic aquaculture emerged with the aim of solving environmental damages, safety and health hazard, and social problems faced by conventional farming. It encourages the dramatic reduction of external inputs by prohibiting use of synthetic chemicals, fertilizers, pesticides, pharmaceuticals and feed additives. It also encouages reliance on internal farm resources, using natural ecological processes to sustain agricultural yields and disease resistance. Organic farming is better for wild life, soil, animal reproduction, fight against diseases, contain more nutrients, protect climates and safer.

### **Objectives**

The study aims

• to explore the environmental and socio-economic impacts of

#### **Methods**

- Literature review
- Focus group discussions
- Semi-structured interviews
- Transect walks
- Seasonal calendar





- shrimp aquaculture through reviewing scientific articles
  to investigate the factors hindering the sustainablity of
- shrimp aquaculture in Bangladesh
- to understand the potential causes for expansion of organic shrimp aquaculture in Bangladesh
- to characterize farmers capital assets to cope with climatic shocks
- to identify livelihood strategy of shrimp farmers
- to understand the sustainability of shrimp farming comparing organic and conventional practices.

## **Research questions**

- what is the impact of shrimp farming on the livelihoods of farmers?
- why farmers are vulnerable to low socioeconomic situation?
  what does the adoption of organic shrimp farming mean to a farm household?
- why organic shrimp farming are expanding? Is organic shrimp farming sustainable?
- what capital assets do organic farmers use to shrimp farming? Is organic farming a livelihood strategy for shrimp farmer?





#### Conceptual Framework (DFID, 1999)

#### **Expected outcome**

The economic benefit of shrimp aquaculture is well recognized, but the cost of destruction is much higher. When the environmental and social challenges are considered, shrimp farming has neither improved living standards nor villager's welfare. The increased incidence of negative impact on environmental and social issues have generates huge research effort aimed at improving the long-term sustainability. Therefore, the adoption of organic aquaculture technology is an alternative that can minimize environmental and social problems. The project will further explore the impact of conventional shrimp aquaculture practices on rural livelihoods in Bangladesh. The project will contribute to inspire organic shrimp aquaculture by identifying new evidences that promote sustainable household livelihoods. As organic farming is sustainable so the project will assist policy makers to make strategy and plan for development of organic shrimp aquaculture with conditions for food safety and traceability of shrimp. Finally the project will help to achieve MDG 1 & 7.



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Photographs taken by Brojo Paul

**References** (A complete list of references can be obtained by the Author)

Deb, AK (1998) Fake blue revolution: environmental and socio-economic impacts of shrimp culture in the coastal areas of Bangladesh. Ocean & Coastal Management 41: 63-88 Primavera, JH (1997) Socio-economic impacts of shrimp culture. Aquaculture Research 28: 815-827

Stonich SC, Bailey, C (2000) Resisting the blue revolution: Contending coalitions surrounding industrial shrimp farming. Human Organization 59: 23-36