



## FACT SHEET

### Artemia4Bangladesh

#### Background

In Bangladesh, 95 percent of crude salt is produced in Cox's Bazar by 50,000 artisanal salt farmers across about 27,000 ha of land. With roughly half a million people directly or indirectly involved in salt production, it is an important industry to the region. Yet the industry faces several major challenges, such as increased operating land and labor costs, unemployment during the rainy season and low productivity in aquaculture. These are the biggest obstacles to improving the livelihoods of salt farmers in Bangladesh.

However, a promising new type of aquaculture technology could turn things around for the country's salt industry. Brine shrimp *Artemia* nauplii, a small branchiopod crustacean, constitutes the most widely used live-food item for the larviculture of crustaceans and marine fish. Yet recent observations and workshop findings from the Artemia4Bangladesh project suggest that the country's salt/aquaculture farmers are unaware of *Artemia* farming and the potential technological improvements it offers for shrimp and fish production in their salt farms. The unique property of *Artemia* to form dormant embryos, called "cysts," accounts to a great extent for its designation as a convenient, suitable and excellent larval food source. Currently, Bangladesh imports 40-50 tonnes (t) of dry *Artemia* cysts annually, worth approximately USD 5 million. In addition to its use in aquaculture, *Artemia* is also used for human consumption because of its high protein and fatty acid content.

Across Asia, several other countries, particularly Vietnam and Thailand, have adopted new technologies to improve the profitability of their salt farms through the production of *Artemia* cysts and biomass. Integrated salt-*Artemia* production is a lucrative business, and it has improved the socioeconomic conditions of thousands of families in places like Vinh Chau-Bac Lieu in Vietnam.



#### Donor

European Commission

#### CGIAR Research Program

Climate Change, Food Security

#### Collaborating Partners

- Department of Fisheries (DoF)
- Bangladesh Fisheries Research Institute (BFRI)
- Bangladesh Small and Cottage Industries Corporation (BSCIC)
- Bangladeshi universities
- Bangladesh Aquaculture Technology Innovation Platform (BATiP)
- Salt Farmers Association
- Shrimp, prawn, fish hatcheries
- Ghent University, Belgium
- Can Tho University, Vietnam

#### Project Duration

March 2020–February 2024

#### Project Area

8 Upazilas of Cox's Bazar District

## Objectives

The overall objective of the Artemia4Bangladesh project is to enhance food and nutrition security in Bangladesh through climate-smart innovative technologies. Two further specific objectives are to (1) introduce an integrated salt and *Artemia* production system and (2) increase marine aquaculture production and productivity in the salt farms.

## Approach

The project aims to build capacity through demonstration, training, and research and innovation.

- Demonstration: Integrate *Artemia* cysts and biomass into aquaculture production in salt farms and recirculation systems in shrimp hatcheries.
- Training: Provide training for relevant government and nongovernment officials, representatives from private companies, salt/fish farmers, hatchery technicians, extension agents, local service providers and young professionals.
- Research and innovation: Develop climate-smart technologies, process and use locally produced *Artemia* cysts and biomass, improve seed quality and availability, and use hatchery/nursery rearing techniques of marine fish.

## Key outputs/activities

- Prove that a production system that integrates *Artemia* cysts and biomass with salt is feasible in Bangladesh.
- Ensure that this type of production system becomes effectively established and widespread among salt farmers in the country.
- Increase marine aquaculture production and productivity by ensuring the availability of low-cost locally produced *Artemia* cysts and biomass.
- Improve the revenue of salt farmers through the adoption of a profitable aquaculture activity, such as shrimp, fish or crab culture.
- Enhance the sectoral value of marine aquaculture.

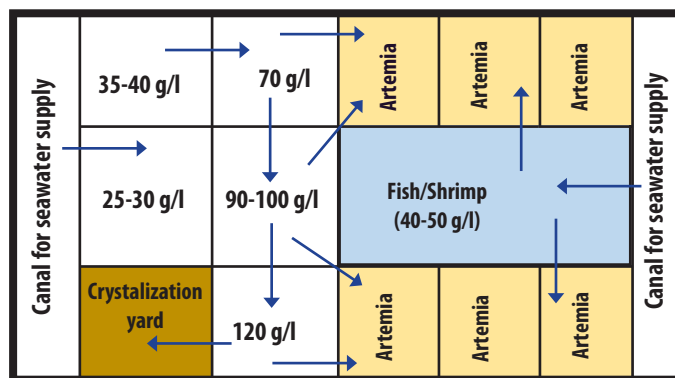


Figure 1. Model of an integrated *Artemia*-salt-aquaculture farm.

## Target indicators

- Set up 50 demonstration farms using integrated salt-*Artemia*-aquaculture technology. Train 500 farmers and ensure 2500 farmers adopt the technology covering more than 1000 ha of salt farms.
- Produce 10 t of *Artemia* cysts and 20 t of *Artemia* biomass.
- Increase aquaculture production per unit area of integrated farms.
- Raise the household income of salt farmers.
- Produce 1 billion shrimp/prawn postlarvae using locally produced *Artemia* cysts or biomass.

## Contact

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