

# Ento-Feed: A Proposal for Producing Fish Feed from Black Soldier Fly Larvae



insectsforall

## Background

Fish feed is one of the main constraints on the growth of aquaculture in the Blue Gold (BG) programme target areas. Lack of access to high quality and competitively priced feed means that the fish farmers are unable to expand their production. Black Soldier Fly (BSF) is an insect that can easily be reared. The larvae can be used as a high protein component of fish feed.



Black Soldier Fly rearing facility

Aim of the project was to conduct detailed feasibility analyses of the issues related to the development of fish feed from BSF larvae, in BG target areas. The project seeks to raise BSF larvae on organic waste, and use the larvae as a partial substitute for fish feed.

BSF larvae have a dry matter crude protein content of 42%. Dry BSF larvae supplemented with commercial feed can significantly increase the growth and survival rates of fish. So, farmers will need to purchase less fish feed.

## Description of the Innovation

The proposed solution is to teach fish farmers to rear BSF larvae. Aspire and Insectsforall (A&I) will set up the facility for breeding BSF and supply the BSF larvae hatchlings to the farmers who obtain support from A&I to rear the larvae.

Once the larvae have grown, the farmers could use the larvae to supplement the fish feed for aquaculture. The project will help local fish farmers to set up and manage BSF larvae rearing sites and help them process the larvae into fish feed.

The pilot project will seek to set up a breeding facility and few rearing sites in Patuakhali. The rearing sites will be supervised by A&I, but they will be operated by the fish farmers.

The advantage of this approach is that fish farmers will have access to high quality fish feed at much lower cost. Larvae castings can be used as quality organic fertilisers, reducing their reliance on commercial fertilisers.



### Expected Results

The feasibility study indicates that the climate conditions are very suitable for the production of BSF larvae in all BG target areas. Research conducted by the Agricultural University of Bangladesh supports the conclusion that BSF larvae can be produced and used as a partial substitute for fish feed in Bangladesh.

Using BSF larvae as a partial substitute for fish feed, could substantially reduce the cost of fish production in BG target areas because fish feed is the major cost component of aquaculture. Thus, this technology has the potential to significantly improve the financial situation of the fish farmers in the BG target areas by reducing their reliance on commercial fish feed.

### Lessons Learnt

A&I believe that by making the farmers more independent this technology has the potential to revolutionise the aquaculture industry in Bangladesh.

The fish farmers are interested in the technology, but there are concerns among the stakeholders, about the acceptance of BSF as alternative fish feed, given the novel nature of the technology. Patience and diplomacy are essential to address these concerns because the technology cannot be commercialised without the support of the stakeholders.

### Sustainability / Future Business Model

The feasibility study provides a thorough analysis about the way this project can be implemented.

The business model involves a decentralised structure whereby farmers will be able to produce part of their feed by rearing BSF larvae. Since the production does not need much infrastructure, farmers in remote regions of the BG target areas will be able to benefit from the technology and be able to improve their standard of living, which will coincide perfectly with the goals of the BG program.



BSF rearing

### Upscaling potential

The pilots will provide valuable data about the best method for scaling up and commercialising the project. There are a number of ways the project can be scaled up. These include: increasing the production capacity of the fish farmers involved in the pilot and increasing the number of people rearing BSF larvae in all BG target areas. A centralised hatchling factory with local employees will be seen as a sustainable long term solution.