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## SUCCESS STORY

### **Increasing Profitability for Smallholder Fish Farmers**

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**Technologies help maintain yield while reducing feed costs for tilapia farmers**



Photo: Russell Borski

*A technician at Central Luzon State University in the Philippines weighs fish feed for a field trial testing the growth of tilapia under different feeding regimes.*

**With half a billion people depending on fisheries for their livelihood, the economic and environmental benefits of evidence-based strategies for reduced feed inputs and alternative feed formulations has potential significance worldwide.**

Feed is the most significant operational expense for fish farmers in developing countries, amounting to as much as 60 - 70% of total production costs. Thus, the rising cost of commercial feed has had a significant impact on profit margins for smallholder farmers. To address this issue, the Feed the Future Innovation Lab for Collaborative Research on Aquaculture & Fisheries is developing new technologies that increase the bottom line without sacrificing quality.

In the Philippines, AquaFish researchers tested three feeding technologies with tilapia:

- reducing the amount of feed below the recommended daily level, also known as subsatiation
- feeding fish on alternate days at 100% satiation levels
- delaying the start of supplemental feeding

Results showed that all three of these feed reduction strategies are cost-effective and do not impact the size or quality of the fish.

New research by AquaFish scientists is scaling up these technologies to other countries and other species. Researchers have turned their attention to Bangladesh where excessive and costly feed inputs result in poor economic returns for fish farmers. The research is expanding beyond tilapia to Indian carp species with high economic value.

Alternative feed formulations is another mechanism for reducing feed costs. In Tanzania, AquaFish investigators used leaves of local trees as a low-cost substitute for high cost fish feeds. The results were promising with fish showing a higher growth rate over standard fish feed. Researchers in Mexico have developed new tilapia feed formulations using locally available products. Development of plant-based feed for snakehead fish in Cambodia has led to recommendations to the government and private industry for a sustainable snakehead aquaculture industry.

The AquaFish Innovation Lab has focused its research on developing technologies that can be scaled up globally. With half a billion people depending on fisheries for their livelihood, the economic and environmental benefits of evidence-based strategies for reduced feed inputs and alternative feed formulations has potential significance worldwide.