Fish Farmer Models CRSP Best Management Practices
Improved Practices Save Money and the Environment
By James Bowman, Laura Morrison, and Hillary Egna

January 2012

"While the BMP's help in improving on farm activities, they also contribute immensely to the effective regulation of waste disposal"

— *Paul Osei Kwame,*
Oseibros Farms Company

Paul Osei Kwame (right) confers with Dr. Daniel Adjei-Boateng of KNUST, one of several Ghanaian investigators helping him manage the CRSP on-farm research project at Oseibros Farm.

For over 24 years Mr. Paul Osei Kwame has operated a successful 25-acre farm—Oseibros Farms Company Limited—in the Ashanti Region of Ghana. Originally running an integrated operation with poultry, crops, and maize grit extraction, Mr. Osei added aquaculture in 2008. Three years later, he now has 20 ponds where he raises Nile tilapia fingerlings for sale to other local fish farmers.

Mr. Osei is a farmer who believes in the application of science to agricultural production. He wants to "get it right" by learning and applying the best management practices in his fishponds. In 2009, Oseibros Farms was one of 12 farms that participated in an AquaFish CRSP water quality study that led to development of Best Management Practices (BMPs) for reducing the negative effects of pond effluent discharges into local streams. Participating CRSP institutions included Kwame Nkrumah University of Science and Technology (KNUST)and Virginia Polytechnic Institute and State University. Mr. Osei enthusiastically adopted the CRSP recommendation to lower the frequency of pond draining to both save water and lessen the environmental impact of his farm's pond effluent. According to Mr. Osei, "While the BMP's help in improving on-farm activities, they also contribute immensely to the effective regulation of waste disposal."

Under the AquaFish CRSP's new Feed the Future (FtF) project in Ghana, the focus of activities has turned from research to outreach with the initiation of on-farm BMP demonstrations in early 2011. The main objective is to demonstrate how increased profitability and environmental benefits can be simultaneously achieved in the production of all-male Nile tilapia. Mr. Osei readily agreed to participate in this activity, allowing Oseibros Farms to serve as one of six demonstration sites to test two BMPs to improve fishpond management—(1) floating fish feeds and (2) reusing "old" pond water. These new approaches combine profit-motivating practices with environmental benefits. Replacing sinking fish feed with floating feed reduces production costs by lowering feed waste from the loss of uneaten feed that sinks to the bottom of ponds. Reusing old water rather than refilling ponds with new water at the beginning of each new production cycle reduces input and labor costs. Preliminary data show positive results with savings from lower feed costs and improved production potential with better feed conversion. While the effect of old pond water on growth differences is still under investigation, reusing old water clearly reduces costs and thus makes sense from an economic standpoint.

Mr. Osei has fully embraced the CRSP model. His farm is a CRSP demonstration site for the Ghana FtF project. He has taken a leadership role in his local fish farming community with training on his farm as the focal point. Farmers can visit Oseibros Farms to learn about CRSP technologies or to attend workshops and trainings. Mr. Osei also hosts university student interns and sponsors outreach activities for elementary and secondary schools. To date, 15 PhD and MSc students from KNUST have visited or conducted research at the farm.

With higher profits from cost savings and a commitment to a lighter environmental footprint, Mr. Osei is further expanding his aquaculture operations. His farm is now producing tilapia breeding stock and table-size fish for sale to the local food markets. For the future, Mr. Osei plans to start fish farms at two other locations and process fresh fish on site, with an eye toward entry into the export market.