

Aquatic Resource Use and Conservation for Sustainable Freshwater Aquaculture and Fisheries in Mali

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Introduction

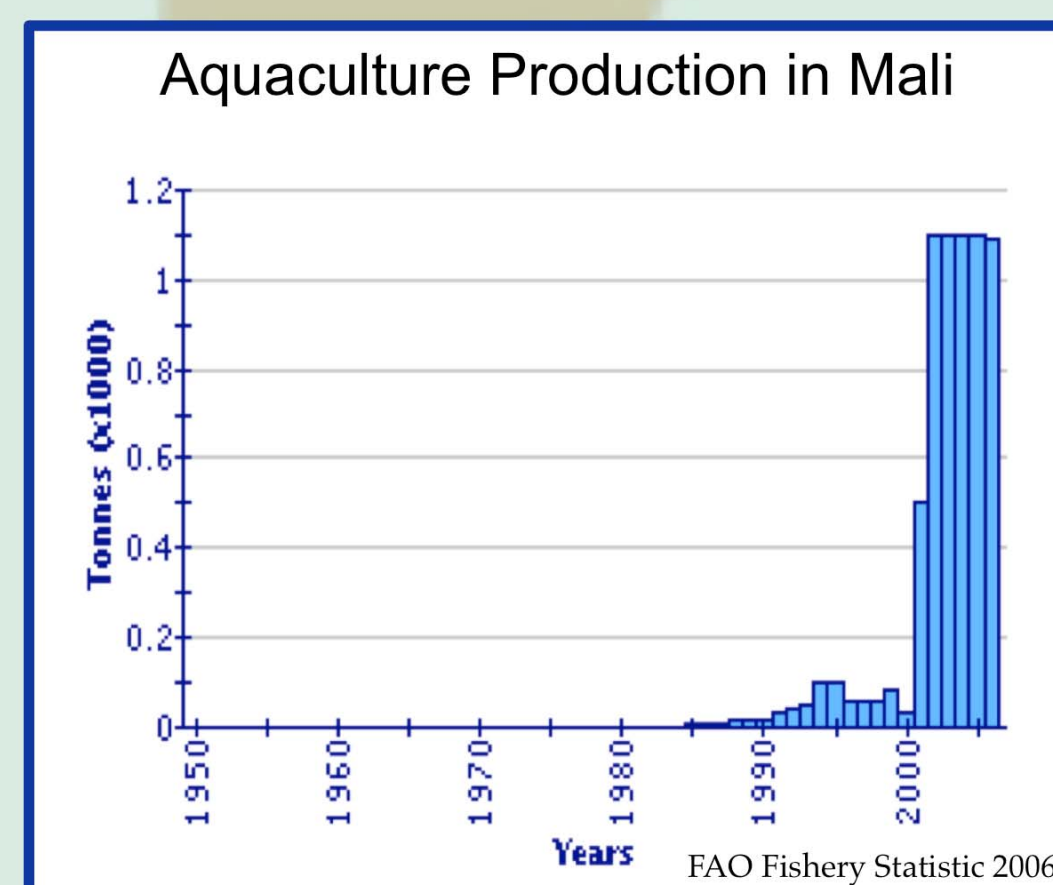
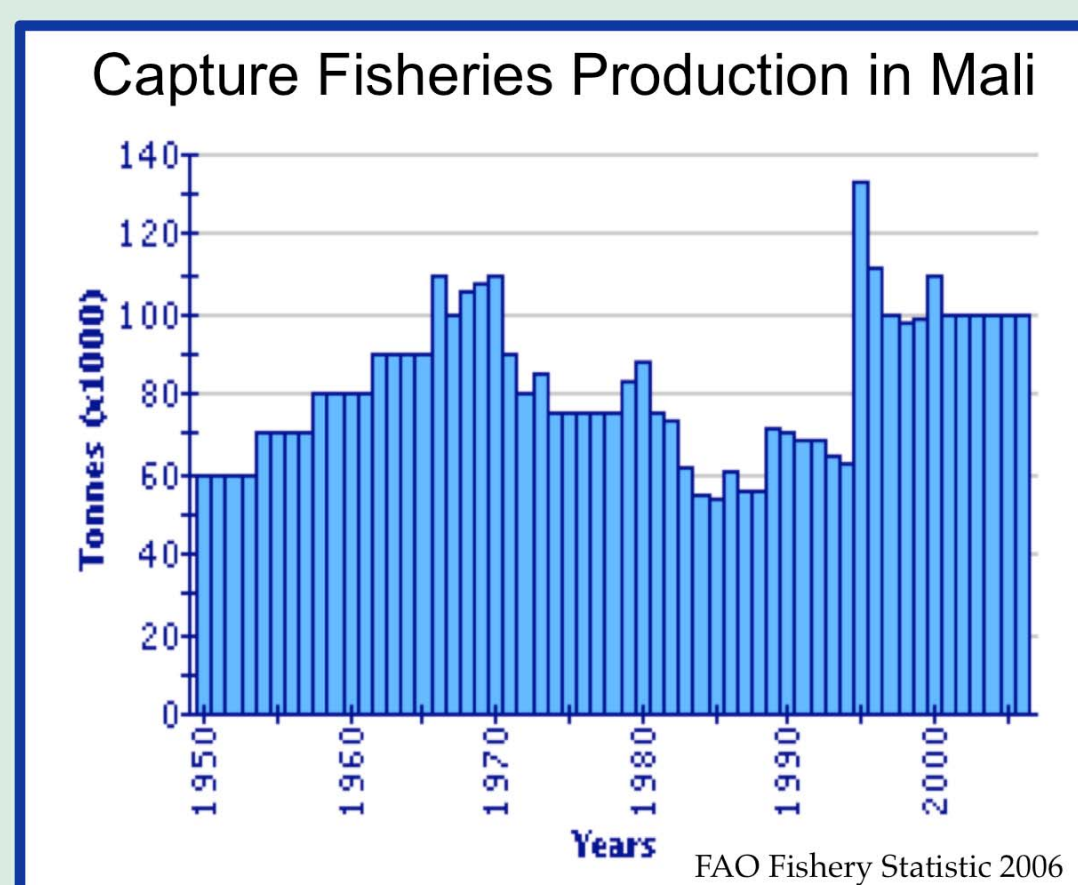
The Republic of Mali is a large, landlocked country in West Africa, characterized by a wide range of climatic and ecological conditions. With an area of approximately 1.24 million square kilometers, it is the seventh largest country in all of Africa. It is bordered on the north by the Sahara Desert and on the south by several inland and coastal countries with subtropical climatic regimes. The ecoregion known as the “Sahel” sweeps across the middle portion of the country. Of great significance to Mali, both ecologically and economically, is the presence of the Niger River, which passes through a good portion of the country, flowing in from Guinea on the southwestern border and out through Niger in the east/southeast, providing significant water resources to an otherwise dry region. The inland delta of the Niger River (20,000 sq km) provides livelihood opportunities for millions of people. Agricultural activities in this area include irrigated rice cropping, rain-fed agriculture, small-scale fisheries, and grazing and browsing for herds and flocks.



Fish Production in Mali

More than half of the people in West Africa consume fish products on a daily basis. Regionally, the fisheries and aquaculture sector employs about 5 million fishers, fish processors, and fish traders; along with other associated jobs. In Mali, the fisheries and aquaculture sector is an important element of the national economy. Annual fish production is estimated to be 100,000 tons, and under normal hydrological conditions, Mali is ranked among the highest freshwater fish producing countries in Africa. Of its total estimated population of 12.6 million, Mali has over 700,000 fishers, and its annual fish consumption is estimated at 10.5 kg per person. In recent years, the demand for fish for local consumption has increased tremendously, growing at a rate of over 7% annually due to population increases and exports, especially to other African countries. Therefore, fish production is and will continue to be an important source of income for a large portion of the population.

The current supply of fish is far from meeting the demand of local markets, however, and in the future regional and local demands for fish are expected to continue to increase in Mali. According to recent assessments, a number of production constraints have contributed to the current shortfall. Among them, declining fish stocks is the most critical. Improving fisheries management and increasing aquaculture production are among the most promising alternatives for increasing the overall supply of aquatic products.



The AquaFish CRSP Mali Project

The AquaFish Collaborative Research Support Program (AquaFish CRSP) is partnering with the Direction Nationale de la Pêche (Government of Mali) and collaborators from Moi University (Eldoret, Kenya), Shanghai Ocean University (Shanghai, China), and FishAfrica (Nairobi, Kenya) to implement an innovative project for the sustainable development of the aquaculture and fisheries sectors in Mali. Support for this project is provided through a cooperative agreement between the Mali Mission of the United States Agency for International Development (USAID) and Oregon State University. The goal of the project is to improve the productivity and income of producers in targeted areas of Mali through facilitation of access to technologies and building the capacity of stakeholders involved in freshwater fish farming and capture fisheries management in target areas.

The project takes a South-South approach, working in three theme areas with corresponding objectives as follows:

- **Theme I (“Pond Culture”):** Advancing Sustainable Freshwater Aquaculture Practices and Technologies; **Objective:** To identify appropriate strategies for pond aquaculture and make them available to farmers in target areas
- **Theme II (“Rice-Fish”):** Promoting Sustainable Rice-Fish Aquaculture in Irrigated Systems; **Objective:** To identify appropriate strategies for integrated rice-fish farming and make them available to farmers in target areas
- **Theme III (“Fisheries Planning”):** Building Community and Consensus towards a Fisheries Management Plan; **Objective:** To assist local organizations in developing appropriate fisheries management plans to ensure long-term viability and sustainability of capture fisheries in target areas

Across these three themes, the project emphasizes creating capacity building opportunities, finding and promoting sustainable solutions to aquaculture and fisheries development, and fostering collaboration between the public and private sectors.

The project therefore focuses its efforts on training, conducting field trials and demonstrations, and holding stakeholder workshops. Theme I is providing hands-on training in pond construction, fish propagation, and pond management, and conducting field trials to identify pond culture systems suitable for implementation in Mali. Theme II provides training and field testing and evaluates potential adaptations of rice-fish systems for introduction into irrigated systems in Mali’s Niger River delta, and Theme III is assisting the Mali Government in conducting frame surveys and involving local fishing groups in the development of sound fisheries management agreements, working initially in the Lake Sélingué area.

Most of these activities are being carried out in Mali, but some training is also being conducted in China and Kenya. For example, the first short course conducted under this project, focusing on rice-fish culture techniques that have been practiced in China (Theme II), was held at Shanghai Ocean University, China, in September of 2008. Two Malians who participated in this training will work with the Theme leaders to develop field trials and hold training sessions back in Mali. Similarly, selected Malians will go to Kenya in 2009 for hands-on training in pond culture techniques and return to Mali to set up field trials and participate in training sessions. Initial workshops for Themes I (Pond Culture) and III (Fisheries Planning) were held in Mali from 2-5 and 9-13 February, respectively, and the Lake Sélingué frame survey is to be conducted immediately following the Theme III workshop, beginning on 16 February, 2009.

Summary

Farmers, fishers and fishing communities, extension and technical personnel, and members of NGOs are the beneficiaries of the workshops, training courses, and field trials being conducted under this project. Through training and participatory field trials, recent and prospective fish farmers will learn current, practicable techniques for the culture of tilapia and catfish in Mali, rice producers will discover and apply techniques for producing crops of fish along with their rice crops, and members of Lake Sélingué fishing groups will participate in the development of lake management plans that will ensure optimum yet sustainable production.



Marketing fish at the landing beach near Lake Sélingué.

Participants learn basic surveying techniques at a workshop on pond construction and management held at the Practical Training Center of the Ministry of Livestock and Fisheries in Bamako, February 2009.



Fish are sampled by cast net in a private fish pond near Bamako during a field trip taken as part of a February 2009 Theme I workshop.



Mali government technicians learned about Chinese rice-fish culture techniques during a six-day course held at Shanghai Ocean University, Shanghai, China, in September 2008.

