

PROJECT ASSISTANCE COMPLETION REPORT

043813

FISH PRODUCTION SYSTEM DEVELOPMENT PROJECT (FPSDP)

1. The Project Agreement was signed for the Fish Production System Development Project on June 29, 1979, with a Project Assistance Completion Date of August 31, 1983. This PACD was extended to August 31, 1985, by Project Implementation Letter No. 32, dated March 18, 1985.

This four-year project was built upon the accomplishments of the AID funded Inland Fisheries Development Project (532-0038) which established a knowledge base for conducting freshwater fish production activities in Jamaica and developed institutional capabilities for the production of fingerlings and the extension of fish farming techniques to farmers.

The intent of the Inland Fisheries Project was that inland fishing in Jamaica be organized around the small farmer as the principal beneficiary. However, most of the island's Tilapia production is now produced by larger operators, including both public and private enterprises. A number of producers are relatively wealthy individuals whose primary income does not come from farming. The evidence supporting this finding is derived from an analysis of existing acreage and production data, the comments of Inland Fisheries Unit staff, and interviews with farmers. According to the data available, there are currently about 550 Tilapia farmers in Jamaica. Of this total, however, only 138 are commercial units in the sense that they have been established primarily as income-generating enterprises.

The overall objective of the Fisheries Project was to develop a commercially viable inland fishing industry in Jamaica, focussing on extension and production of freshwater Tilapia. The project goals were to increase food production, income, employment, improve nutrition in rural areas, and to assist the Government of Jamaica to mitigate its foreign exchange problems. The project purpose was to develop the capacity of the GOJ institutions to increase fresh water fish production throughout the country, primarily through assistance to small farmers.

The sub-goal of the project which was to establish a foundation for a regional training program in fish production was not achieved. The Jose Marti Secondary School has provided some training but it is not adequate for a regional program. Courses promised and started by the University of the West Indies are not now available, with the exception of a six-week overview of aquaculture for senior students. The Jamaica School of Agriculture was closed in mid-project.

2. A team of three foreign technicians from Auburn University provided the project with the required technical assistance (TA). Their most important achievement was the transfer of scientific-based aquaculture technology to the Inland Fisheries Unit (IFU) and farmers. Culture techniques involving brood ponds, nursery ponds, and grow-out ponds were taught to IFU personnel both in Jamaica and at Auburn.

The project's training program for extension staff and farmers worked well. The quality of training, the facilities developed at Twickenham Park, and the follow-through support program were appropriate and functional. Five project staff members completed their training at degree levels (1 Ph.D., 3 MS., 1 B.Sc.). Another started a B.Sc., but was unable to complete it within the planned schedule.

3. The FPSDP was financed by a planned expenditure of US\$8.965M: \$4.858M from the Government of Jamaica (GOJ) and \$4.107M from USAID (\$2.740M Loan, and \$1.367M Grant). Of the planned expenditures, approximately \$3,619,893 of USAID's funds were spent. USAID received from the Ministry of Agriculture an audited financial statement for Financial Year 1984/85. Of the approved amount for the project, J\$6,786,233.37 was spent as of March 31, 1985.
4. The salient accomplishment of the project was the successful transfer of aquaculture technology and skills, resulting in the establishment of an inland freshwater fish farming industry in Jamaica, based on Tilapia. The transfer of technology was accomplished through a combination of training, technical assistance and capital support. (see table on Page 3).

	TARGETS 1979	REVISED TARGETS 1979	ACCOMPLISHMENTS AS OF 12/84
A. Fingerlings (Numbers)	13,000,000	2,300,000	5,533,961
B. Project Staff (nos. trained)	160	160	127
C. Training			
(a) Long term (PM)	5	-	5
(b) Short term	932	-	296
Project Staff	12	-	5
Farmers	920	600	291
D. Students Trained	50	45	75
E. Participating Farmers	1,280	600	360
F. Acreage Ponds	1,186	580	525
G. Foodfish (lbs.)	6,000,000	1,323,000	1,138,780

The three largest farms in Jamaica are mixed public-private corporate entities whose combined pond acreage is 212 acres or 29 percent of total commercial pond acreage. The remaining 135 farms are owned by private individuals, many of which are considered large. One of the three large fish farms (Aqualapia Ja. Ltd.) is owned primarily by the Jamaican Government and is secretive about its production technology and production data. Their use of hybrid seed stock, electric powered aerators that cost \$1,200 each, and other advanced technology is designed to increase productivity to more than 10,000 pounds per acre. Most of Aqualapia's production is planned for export, but it could easily be diverted to the domestic market if the firm's high capital costs permit it to be competitive. They reportedly have plans to expand, although the shortage of water in the area might limit their plans.

The Project also had several unintended consequences. Contrary to the intentions of the original designers, FPSDP was not a small farmer development project. Although most production units created by the project are relatively small (less than 5 acres), many owners are medium-sized farmers or businessmen for whom fish farming is one of several business ventures.

5. Recommendations for final adjustments in project design, the appropriateness of remaining conditions and covenants and Borrower/Grantee (B/G) reporting requirements - None applies.
6. Definition of continuing and/or post-project AID monitoring responsibilities, including the timing and resources involved - None applies. The Mission has encouraged GOJ to divest the reproduction centers. One of two has been divested and the other is up for divestment.
7. A review of data collection results and evaluations remaining to be undertaken - None applies.
8. Lessons Learned:
 - a. Tilapia farming has the potential to become a viable industry in Jamaica and potentially in similar developing countries in the Caribbean and elsewhere;
 - b. In trying to develop an industry around smallholder production, specific plans (that is a strategy) must be developed early-on to keep large farmers from seizing control of the industry, if that is a valid objective. The Mission assumes the quantity of food fish produced should be the principal objective;
 - c. Production is easier to set in motion than marketing, which must overcome social, cultural and economic barriers. Assumptions of ready markets for fish products is the single most common mistake made in fish expansion programs in developing countries;
 - d. Aquaculture is such a relatively new and inexact science that new technology may replace existing technology very quickly;
 - e. Most universities have a tendency to use in-house expertise to the extent that certain objectives, often business-oriented, and ideas are often neglected. It is not likely, for example, that a successful fish farm operator would accept assumptions of unlimited market and no distribution problems without careful pre-study;
 - f. Changes in project direction must include environmental reassessment, especially when new technologies are involved; and,
 - g. Activities such as research and training, which are not directly remunerative, are difficult to sustain beyond the time when donor funding for a project is withdrawn. Government commitment to sustain these facilities should be obtained early in a project and donors cannot ensure the continuation of support.