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**RESUME OF AUBURN UNIVERSITY'S PARTICIPATION IN
THE BRAZIL FISHERIES PROJECT**

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RESUME OF AUBURN UNIVERSITY'S PARTICIPATION IN THE BRAZIL FISHERIES PROJECT

A short-term survey of fisheries development in Northeast Brazil was carried out June 27 - September 3, 1966 by a Team of three professors (Dendy, Shell, Prather) from Auburn's Fisheries Department under personal contracts with the U.S. Bureau of Commercial Fisheries. Preliminary investigations were on the potential of the irrigation and water supply reservoirs constructed by DNOCS (National Department of Works Against the Droughts) to supply under management large quantities of fish for local consumption in this food-deficient area. The Team recommended that a program involving the intensive management of ponds for fish production should be initiated in addition to reservoir investigations.

Upon return of the same Team to Northeast Brazil, August 7 - September 20, 1967, a suitable area for a pond research station was located below the dam of Pereira de Miranda Reservoir at Pentecoste. However, land for this site could not be made available. From August 19 - September 21, 1968, an Auburn Team (Shell, Prather, Jeffrey) investigated and approved an alternate site on DNOCS lands near its Training Center. Subsequently, a plan for a modern fishcultural experiment station was prepared. Construction at this site began in early 1969 under a USAID - DNOCS project with assistance by Mr. Harris Magnusson and Mr. George Reese, USAID/Brazil.

Task Order 3 to Auburn University's world-wide project, AID/csd-2270, was approved and initiated November 21, 1969. Under this contract, Dr. Norris Jeffrey began a 2-year tour in Northeast Brazil with the primary duty of advising on construction of the experimental station and training DNOCS field personnel

in developing systems of aquaculture. Task Order 4, AID/csd-2270, provided technical services of Dr. William Davies, a fisheries biologist with emphasis on reservoir fisheries management, for the period November, 1970 to September, 1972. Subsequently, the USAID Mission, after consultation with the Government of Brazil, decided to discontinue studies on fish management aspects of reservoirs of the Northeast and increase emphasis on aquaculture. Task Order 8 (AID/csd-2270), providing one technician each in fishculture extension and fishculture research fields was formalized March 25, 1972, with these advisors arriving at duty posts May 19, 1972 and June 16, 1972, respectively. Task Order 8 presently is funded through June, 1974 after which it apparently will be allowed to terminate.

Counterpart training opportunities for Brazilian staff affiliated with the Fisheries Project have been provided by USAID/Brazil, but these principally were in the form of short-term tours to the International Center for Aquaculture and other institutions. Amaury da Silva received 9 months practical training in fishculture techniques at Auburn University, while two other biologists, Helio Melo and Odilo Dourado, received specialized training in related fishery fields of limnology and fisheries biology for similar periods of time. Also, four Brazilian biologists took part in a special 2-month training tour of various fish hatchery, aquaculture, and fisheries research stations in the United States. The first two Brazilian biologist to be enrolled in an advanced degree program in aquaculture at Auburn University arrived on campus only on June 10, 1973, with another participant scheduled for arrival in September, 1973. Since a Master's degree program requires a minimum of 2 years to complete, it is unlikely that present participants will complete their degree programs and return to work

with the Brazil Aquaculture Project prior to mid-1975. Even then, it would be highly desirable that the returnees work for a couple of years under the guidance of experienced aquaculture advisors in order that the Brazilians can rapidly gain experience and confidence in carrying out an effective aquaculture program for Northeast Brazil.

Outstanding progress has been achieved during the past year. In line with the increasing importance of fisheries in the Northeast, a separate Department of Fisheries was established within DNOCS. Previously, all fisheries work was administered under the Department of Agriculture and Irrigation; consequently, top level decisions concerning fisheries projects were made by persons who had little appreciation or understanding of fisheries. Now that fisheries has been elevated to departmental status, improved communication, cooperation and enthusiasm for aquaculture program is beginning to be translated into an improved research effort resulting in more productive and meaningful outputs.

Adaptive research at the Pernambuco Fishculture Station carried out during the past year indicates good potential for fishculture:

- a) Hybrid Tilapia stocked at the rate of 8,000 fingerlings per hectare resulted in total production of 920 kg/ha and 1,586 kg/ha with fertilization and feeding respectively during a growing period of 253 days.
- b) Tambaqui (Myletes bidens) and the Pirapitinga (Mylosoma sp.), fish species obtained from the Amazon River, both were tested on a preliminary basis to assess their suitability for intensive fish-culture. These two fish species grew at a very high rate, readily accepted pelleted ration, were tolerant of poor water quality, were

easily harvested and brought a good price when marketed. Net production for Tambaqui was 2,294 kg/ha with the fish growing from 6 to 1,245 grams (2.7 lbs) in 13 months. With Pirapitinga, the net production was 2,207 kg/ha and the fish grew from an average of 9 to 992 grams (2.2 lbs) in 13 months.

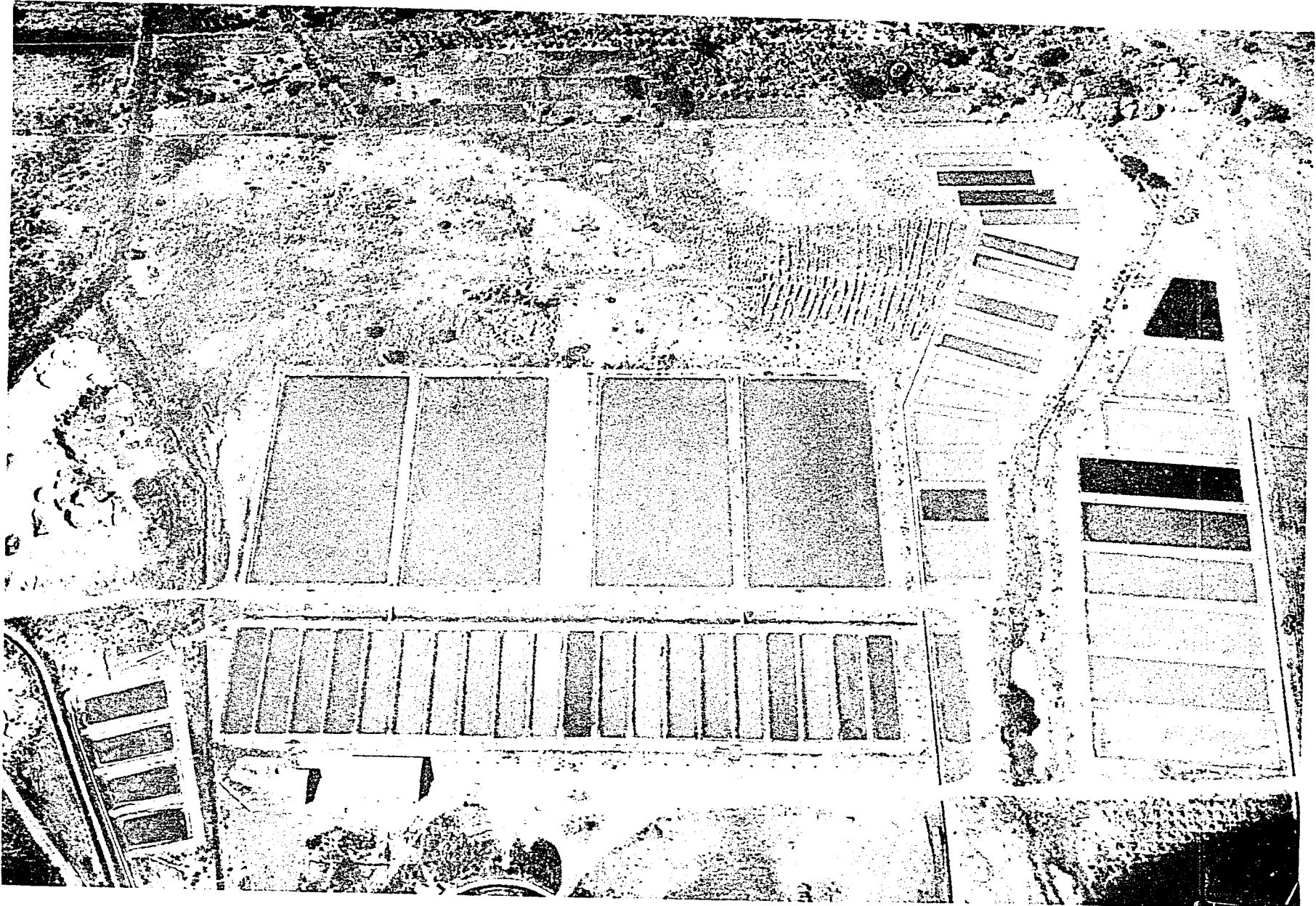
A very important project concerned with developing spawning techniques for producing fingerlings of these two fish species is being initiated.

The fishculture extension program also is producing good results. A number of farmers involved with fishculture operations in the Sao Francisco River Valley were visited. One farmer who started growing fish eight years ago in a four-hectare pond, now has 70 hectares of ponds in production. These fish farmers are making profits in their fishculture operation and they appear very eager to adopt improved management methods. Hence, a highly effective extension program could be developed upon the presently small but existing fishculture base.

It should be noted that the Pentecoste Fishculture Station (see photograph attached) is a well-designed aquacultural testing facility. With a total of 54 ponds comprising nearly 12 surface acres of water, it not only is the largest aquacultural testing facility in Latin America, but it also would serve as an excellent site for training extension fish culturists and holding short courses for farmers interested in implementing fish farming programs.

We at the International Center for Aquaculture are well aware of the increasing constraints that many USAID Missions are facing due to continued reduction of monies made available to AID's foreign assistance program. This particular project, however, has outstanding potential for developing and improving

methods of aquaculture that can provide substantial quantities of high quality protein at relatively low cost inputs to Brazil. We strongly feel that every effort should be made to secure adequate financial support from private foundations, the private sector and other funding sources in order that this facility can firmly be established as the International Center for Fishculture for the entire Latin America Region.



View of the Pentecoste Fishculture Station, Ceara State, Northeast Brazil. Largest ponds in center are 1.25 acres each while lower ponds are 0.1 acres in surface area. Ponds on extreme left and right of photograph range in size up to 0.25 acres. Total number of ponds - 54; Total water area - 11.4 acres.