PD-ABA-313 64328

PROJECT ASSISTANCE COMPLETION REPORT

Project Title:	High Impact Agriculture Marketing and Production Subproject: Regional Mariculture
Project No.:	538-0140.03
Funding Period:	07/23/86 to 07/23/88
LOP Funding:	Grant $1,293,782.07
PACD:	July 31, 1988

I. Purpose: The original Project Paper stated that:

"This sub-project initiates and supports selected mariculture activities that show promise of contributing to new exports, economic growth and diversification. The sub project will test selected aspects of technical, economic and social feasibility for mariculture production in the region. If feasibility is proven, the project will contribute to the goal of economic growth with improved equity by supporting the following objectives: increase agricultural production, strengthen the private sector, promote exports, and manage and preserve natural resources."

II. Background: The HIAMP Project was authorized by the AA/LAC on July 15, 1986. One of the provisions of the Project was that major sub-projects (greater than $500,000) were to be authorized by means of separate Authorization Amendments.

During the course of developing the RDO/C Action Plan and the HIAMP Project, a decision was made to provide limited sub-project support to regional mariculture development under the HIAMP Project. Two activities were identified for inclusion in the sub-project. Both built on pilot efforts previously carried out by the Smithsonian Institution.

The dominant physical feature of the Eastern Caribbean region is the vast expanse of water surrounding each island state. Tourists and non-experts in mariculture and aquaculture often assumed, erroneously, that the lovely blue waters of the Eastern Caribbean provide limitless supplies of fish, lobsters, etc. Such is not the case. In general, the fishery resources of these nutrient-poor waters are inadequate to support the level of exploitation practiced in temperate regions. But these waters do offer some maricultural advantages. In particular, the ocean environment is easily accessible, generally non-polluted and characterized by warm water temperatures that are relatively constant. These attributes are particularly advantageous for selected intensive maricultural activities.

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The HIAMP sub-project consisted of two components:

1. The Antigua Crab Mariculture Component: This component investigated the potential for commercial production of captive Mithrax crab and spiny lobster. The implementation was conducted by the Harbor Branch Oceanographic Institution.

2. Turks and Caicos Research Component: This component was to establish a permanent research facility to provide short term support to crab mariculture operation in four Caribbean countries. Long-term objectives of this facility included development of a Caribbean regional center for mariculture research. This component was implemented by the Marine Systems Laboratory of the Smithsonian Institution.

The laboratory at Grand Turk was constructed under the Project. Ongoing research and establishment of a regional research center at Grand Turk have not advanced as expected but nonetheless the body of knowledge and the new facilities give a good foundation for future activities at Grand Turk. Such future activities will be carried out by Smithsonian Institution, not A.I.D., because of the former's long-term research orientation.

Information gathered about captive raising of Mithrax crab and spiny lobster have answered basic questions about commercial captive production and established considerable baseline information on the difficulty of conducting future applied research on these species.

III. Description of Project Imputs

AID contributions to the Project included:

1. Antigua Crab Mariculture

a. Personnel cost for local and expatriate staff were $170,000. In addition Harbor Branch Oceanographic was required to contribute $210,000 for staff costs.

b. Operations costs ($127,000) included provision of equipment, supplies, and other such materials. Harbor Branch contributed $5,000 for operations.

c. Regional Travel ($39,300) for travel outside U.S. for personnel assigned to the project. Harbor Branch Foundation funded all U.S. travel costs associated with the project ($10,000).

d. A sub-contract ($15,000) with a firm named "Old Dominion" for technical services of an expert to make periodic visits to the project site.

e. Audit costs $10,000 for this component.

2. Turks and Caicos Research

a. Personnel costs ($266,000) for local and expatriate staff researchers and specialists over the life of the project.

b. Travel costs ($28,000) for both U.S. and regional travel for project personnel having administrative and technical responsibilities.

c. Services ($203,000) covered cost of operations and improvements of facilities at Grant Turk.

d. Supplies and equipment ($142,000) utilized to purchase required equipment to upgrade facility as well as to conduct research. Supplies needed for miscellaneous research and operations were included in this line item.

IV. Development Impact

1. The Antigua Crab Mariculture Component demonstrated the difficulty of developing commercial systems of production of a species with no well defined markets, and little knowledge of the life cycle or environmental requirements of the animal. Indications are that Mithrax crab culture could not be grown in capitivity without considerable additional research. On the other hand there were positive recommendations for the potential of spiny lobster and this will assist development activities in the Region.

2. The Turks and Caicos Research Component leaves an equipped research station that should form a center for future research in the Region. While many goals of this project component were not reached, a mid-term peer review conducted in February 1988 indicated that there was potential for the research center becoming important to the Region.

Overall the assessment of this sub-project indicates that it accomplished some of the major goals established and added to the base of knowledge about mariculture systems of Mithrax crab and spiny lobster. A research center has been established on Grand Turk that has potential to become an important component of regional mariculture research in the Caribbean; however, there is no guarantee that Smithsonian will have adequate funds to keep this center going in the future.

V. Recommendations for Continued Monitoring

AID should periodically visit the Research Facility at Grand Turk to monitor its use and role as a regional research center.

VI. Lessons Learned

1. Economic and market analyses should be early integral parts of research in developing commercial production systems for maricultural or aquacultural products. In most cases economic and market analyses should be completed prior to undertaking applied research into production systems of species not already marketed widely.

2. Research grants given to other United States' Government institutions should be periodically (at least annually) reviewed by an unbaised peer panel to insure adequate design of research experiments, advancement toward accomplishing grant goals, and identification of problems limiting progress. Cost for these reviews should be included in the grants. Had such a review of the Smithsonian Project been done earlier AID could have saved several million dollars or could have diverted Congressionally earmarked funds to more profitable maricultural activities in the private sector, such as lobster grow-out. See the attached February 1989 National Research Council peer review for details.

3. To avoid costly mistakes investing in research activities, especially in mariculture, AID should always subject research proposals for <u>any</u> project to a scientific peer review prior to funding "cutting-edge" research, like that attempted by these projects.

Clearances:

ARDO:LKLaird (Draft)
C/A/PDO:JDWooten
SPS:DEClarke
A/DIR:TFFallon
DIR:ASWilliams

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