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PROJECT ASSISTANCE COMPLETION REPORT
SMALL SCALE FISHERIES DEVELOPMENT PROJECT,
497-0286

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I. BACKGROUND

This report assesses the accomplishments of the Small Scale Fisheries Development Project, based on project evaluations carried out in 1983 and 1985, and observations/monitoring by the Mission's current fisheries development officer during the period January-September, 1986. The project was initiated in 1980 and was funded by a USAID grant of US\$3 million and a GOI rupiah equivalent of US\$1.3 million for disbursement over five years. The project consisted of six sub-projects: 1) Pilot Flake Ice Plant; 2) Tambak Extension Service; 3) Floating Fish Cage Culture; 4) Rice/Fish Culture; 5) Freshwater Shrimp Production; and 6) Artisanal Fishery Management.

The goal of the project was to increase annual per capita fish consumption to 30 kg. while improving the quality and variety of food fish available to Indonesians. The purpose of the project was to introduce new and improve existing technology and create a new statistical base throughout the small scale fisheries subsector that would enable national planners to increase food fish production through improved utilization of fisheries assistance and resources in the immediate sub-project areas.

II. STATUS OF COMPLETION OF PROJECT ELEMENTS

Four of the sub-projects were completed in September, 1985 as originally scheduled. The remaining two sub-projects, Fish Cage and Rice/Fish Culture, having been delayed a year for implementation due to difficulties in identifying suitable qualified technicians, were completed in September, 1986. With the exception of the constraints/problems discussed below all of the major outputs of the project were realized.

1. Pilot Flake Ice Plant

The installation of the pilot flake ice plant was delayed approximately two years due to delays in completing the building to house the plant and providing technical assistance to supervise installation. Furthermore, the accompanying generator set for the ice plant was destroyed two weeks after the ice plant was placed in production as it was allowed to run dry of engine oil. However, the GOI was able to keep the ice plant in operation with a smaller generator and although production with the small generator was approximately 50% of potential output, the ice plant has been able to supply adequate ice to the projected number of participants. The GOI hopes to replace the ruined generator in the near future to realize the full potential of the ice plant.

2. Tambak Extension Service

Although the geographic territory was extensive for one technician, and the individual was not a tambak production and extension specialist, he did hold a number of workshops and short-term training courses which improved the availability of technology to tambak farmers in the project areas. This project was also successful in contributing to the DGF Tambak Intensification Program which now provides extension services in 10 provinces.

3. Floating Fish Cage Culture

This project was very successful in introducing new and improving existing technology for the production of fish in floating cages. Several species of fish were evaluated and found acceptable, both culturally and economically, for cage production, and the outreach program attracted a large number of participants. However, overall expansion of cage culture activities in the project areas has been limited by a lack of fingerlings or stocking fish, but such shortages under an increasing demand should serve to encourage private sector participation in the production of fingerlings. The new USAID/GOI fisheries project has placed priority on developing

technology to increase fingerling production for most all of the commercially important species of fish in Indonesia and as a result activities to support the commercial production of fingerlings for cage culture will continue.

4. Rice/Fish Culture

This project activity was also very successful with the fingerling production and extension activities at Kerasaan Hatchery. Although fingerling production activities at Ambarita Hatchery were constrained by management and economic problems, the potential for natural fish production in Lake Toba and need for restocking the lake (which was the primary purpose of the hatchery) became increasingly questionable over the life of the project due to the nearly sterile conditions of the lake. However, in order to upgrade the water supply to Kerasaan Hatchery the GOI has now shifted rice/fish fingerling production from Kerasaan to Ambarita and following the renovation of the Kerasaan Hatchery it is expected that fingerling production activities at Ambarita would continue but that most of the output would go to support cage culture activities in Lake Toba rather than for restocking the lake for natural production.

5. Freshwater Shrimp Production

Although this two year project activity was successful in accomplishing it's objectives of assisting the DGF to adapt shrimp production technology and in demonstrating the technology to the target group of 100 fish farmers there were many problems in reference to funding and support which constrained the possibility of developing sustainable shrimp production program activities. Furthermore, there were market uncertainties for prawns in the project area and subsequently a lack of farmer demand for fry.

Difficulties in obtaining project funds for physical improvements to the four project hatcheries and the lack of sufficient technical assistance to oversee hatchery improvement due to the geographic distance between hatcheries resulted in only one of

the hatcheries being upgraded. In addition, the funding levels provided to the hatcheries were only sufficient to maintain operations for 3 to 4 months per year. Also, the great distances between the hatcheries and the pond production areas and the lack of dedication by the GOI for the management of fry distribution centers were constraints to the extension effort.

Overall, the lack of commitment to budget and management support on the part of GOI and the limited market and demand for prawns and fry respectively served as the basis for discontinuing support to the GOI in the development of this sector. However, the overall focus of the new USAID/GOI fisheries project on training and research can be expected to indirectly support the continuation of private sector production efforts in the sector.

6. Artisanal Fishery Management

The development of a functional artisanal fishery management system to include fishing seasons, limits, species and marketing data planned under this project activity was almost impossible to establish over the short-term without good baseline studies on the existing biological, physical and socio-economic conditions within the system. The types of data needed, the procedures required to collect the data and analyze it and the process of adapting it to a management system is a long-term process itself. In this case the achievement of such objectives was further constrained by the technician being over-extended by the wide geographic area of responsibility. A better use of available resources could have been made if efforts had been devoted to a smaller area. Furthermore it is almost impossible to evaluate the success of new management systems over the short-term. The plans to develop an artisanal fishery management system was further influenced by the initiation of the 1980 Presidential Decree banning fish trawling within 12 miles of the coast, in that a new set of utilization and management factors were introduced which could not be evaluated over the short-term. As a result of these factors there probably was not

sufficient time and/or inputs in the project activity to accumulate and analyze the data to bring about a significant improvement in artisanal fishery management systems.

However, considering the GOI limitations of training, budget and numbers of personnel it was felt that the existing system is doing fairly well in adapting to the changes introduced by the trawling ban. However, additional time, studies and analyses will be required to fully evaluate the effects.

Over the life of the activity, 5 workshops were held with 148 fishery staff participating and one DGF staff member received a M.S. degree in fisheries management. Training and demonstrations on the design of artisanal fishing vessels and gear took into consideration the influence of the trawling ban.

III. SUMMARY OF CONTRIBUTIONS

Although there were some difficulties in reference to the timing and amount of funding contributions and subsequent delays in project implementation, such constraints were offset by the extension of project activities. Less than optimal development in some of the project components was offset by the lack of demand for product output. For example, although GOI funding was inadequate to operate shrimp hatcheries for a full twelve months per year, the actual demand for shrimp fry in the project area was covered under the limited hatchery operation. Thus actual inputs of both the GOI and the Mission were adequate to carry out the objectives of the project.

IV. REVIEW OF PROJECT ACCOMPLISHMENTS

As further discussed in the Summary, Section IX, project accomplishments were satisfactory and most of the outputs were achieved.

V. EXTENT TO WHICH THE PROJECT HAS RESOLVED THE ORIGINAL PROBLEM

In most cases, it is difficult to predict the impact of a small project on specific problems in a production system and the short-term contribution to national levels of production. While it can be argued that this project met most of its specific purposes and outputs, the influence of such short-term and limited support to increasing annual food fish availability at the national level cannot be easily measured.

VI. RECOMMENDATIONS FOR FINAL ADJUSTMENTS IN PROJECT DESIGN, CONDITIONS AND COVENANTS

N o n e.

VII. CONTINUING AND/OR POST-PROJECT AID MONITORING RESPONSIBILITIES

N o n e.

VIII. REVIEW OF DATA COLLECTION RESULTS AND REMAINING EVALUATIONS

The project appears to have been overly optimistic in reference to implementing data collection - analysis activities to upgrade management systems; and/or remain in programming the socio-economic "before and after studies" needed to both evaluate and plan data collection and management activities initially, and to evaluate and adapt findings to upgraded management systems. In addition to an insufficient time frame, there also appears to have been insufficient emphasis placed on training GOL staff to manage or continue the data collection - analysis and management activities initiated under the project.

There is no need for additional evaluations at this time.

IX. SUMMARY OF LESSONS LEARNED

As pointed out in earlier discussions, the project experienced some delays in the startup of some components and had budget and management difficulties in other components. However, most of the project components that had significant delays were eventually extended a year, and obtained their objectives. Although budget and management constraints did reduce the overall output in some of the components most activities still managed to meet most of the projected outputs.

New technology introduced included the development of a fish feed formula for fish species under the rice/fish culture and fish cage culture components, hormone induced spawning in the fish cage culture component, shrimp-fish polyculture technology and water aeration-circulation technology in the freshwater shrimp production component, and flake ice production technology to artisanal fishermen in the ice plant component. Unforeseen factors which impacted negatively on the planned outputs for some of the activities included the implementation of the 1980 trawling ban for the artisanal fishery management component, a shortage of fish fingerlings for stocking commercial production systems in the fish cage culture component, the lack of market demand for prawns in the freshwater shrimp production component and limitations on budgets, training and personnel for most components.

There were a number of important lessons learned in this project. First, it was shown that Indonesian fishermen and fish farmers are willing, and capable of adapting/adopting new technologies to increase fish offtake-production, and that as a general rule the GOI has difficulties in providing adequate funding and management support to significantly increase production in most areas. Second, the role of the government as the prime provider of many of the principal production inputs such as fishing vessels, fish fry, ice, etc. must be questioned as the lack of such inputs - or the lack of GOI funding to sustain such government input programs - serves as a serious constraint to production.

Third, it was obvious that more basic research needs to be carried out across the sector to better understand the existing system(s) and predict the potential for development. In particular more emphasis needs to be placed on the market forces - demand and supply - and the economics of proposed new technology/production systems. Also more baseline research studies need to be carried out on the biological, physical and chemical parameters of fisheries production systems before good management/production programs can be developed. Fourth, a number of project components encountered problems as a result of the attempt to address and resolve specific problems on a wide geographic basis. In addition to staff becoming over-extended funds were not sufficient to carry out all of the planned activities or to cover the travel costs. These results point to the need to focus on resolving the priority problems of a specific system within smaller geographic areas and to have the flexibility to handle other problems that might arise as a constraint to obtaining the objectives. Finally, it is obvious that there is a serious lack of research, production and extension depth in most the GOI fisheries agencies.

The lessons learned as a result of this project have been taken into consideration for the design of the new USAID/GOI fisheries project. Although the new project will initially place major emphasis on improving the capabilities of GOI research institutes and fisheries universities through upgraded staff, programs and facilities, it will in the process, also address many of the priority constraints to production identified under the previous fisheries project. Emphasis on improving research and university staff training in key institutions under the new project will lead to the development of programs of excellence in technology development and academic training over the short-term that can be transferred to the private sector for significant production increases over the intermediate-term.