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UNITED STATES GOVERNMENT

memorandum

DATE: March 29, 1983

REPLY TO ATTN OF: Robert Resseguie, O/PES

SUBJECT: Project Completion Report - Village Fish Pond I, Grant No. 493-0303

TO: Mr. Robert Halligan, DIR

THRU: Mr. Thomas E. Johnson, O/PES

REF: USAID Order No. 3.12, dated October 18, 1982, Project Completion Report

I. Goal and Purpose.

1. Goal. To contribute to improved nutrition and quality of life in disadvantaged rural communities of Northeast Thailand. Progress is to be indicated by increases in per capita income and decreases in malnutrition.

2. Purpose. To provide selected disadvantaged rural communities in the Northeast with year round access to supplemental water supplies and fish protein through techniques capable of replication in the Northeast.

II. Accomplishments, Actual and Projected.

Of 7 end of project conditions listed in the project paper log frame 3 were achieved and 4 were partially achieved. Some were not achieved in all villages. In general, the stated project purpose has been achieved, though not to the detailed degree envisioned by the project designers. (See Attachment I - Summary of Accomplishments)

III. Summarized Project History.

1. Start-up. The project agreement was signed on September 26, 1979. After some delays, pond construction began in April, 1980.

2. Pond Construction. This was the major activity, utilizing 78% of the project's financial resources. During the first year of construction 10 ponds were completed. The remaining four were finished by July 1981. Delays in initial contracting and the subsequent onset of the rainy season led to the delay of one year in completion of the final four ponds.

3. Water Retention. Initial fears that the ponds might not hold water were foundless. All ponds have held water during the dry seasons, some retaining more than others due to varying construction practices, depth, soil, rainfall, etc. With natural sealing and sediment build-up, water holding capability should improve over time.

4. Management.

a) Project direction from the Department of Fisheries was not as intensive as originally anticipated. Nevertheless, generalized direction was provided and for many activities, initiatives did come from the Department.

b) The Provincial Fisheries Stations and Offices provided close guidance and assistance and were very instrumental in providing adequate technical assistance necessary to encourage villager participation. Assistance was provided mainly through site teams. Though formally formed and trained rather late in the project, site team members played a major role in ultimate project success.

c) Village committees on the other hand were formed early in the project and proved to be very effective in managing the ponds and regulating water usage. They each drew up sets of regulations with some similarities and some differences. This depended on the local situation - e.g., in some they allowed animals in the pond and in others this was prohibited. The overall policing proved to be very effective and was done completely internally by the villages.

5. Fingerlings. Fingerlings were provided in sufficient quantities to all ponds by Provincial Fishery Stations. Different species were provided depending on availability and villager preference. The number of fingerlings varied, ranging from 30,000 to 1 million depending on the size of each pond. On the average, about 265,000 fingerlings were released in each pond (See Attachment V). In some cases, where fingerlings were lost due to flooding or other problems, they were replaced.

6. Nurseries. Thirteen villages constructed nursery ponds adjacent to the larger pond. In at least two villages, fingerlings were being produced by villagers at the end of the project. In the others, training has taken place, but the villagers were not yet ready to undertake breeding.

7. Harvests. Most ponds have been harvested at least once. Some have had 2 harvests (5 ponds). There are 3 ponds which, due to construction delays, have not been harvested yet. Yields from the ponds have been somewhat lower than anticipated, ranging from 25 to 103 kilos per rai. The project paper estimated that each villager would increase his protein intake through fish by about 10 kilos per person per year. On the average this would have required yields of approximately 80 kilos per rai. In fact, the actual yields were approximately 40 kilos per rai. But it must be kept in mind that the actual figures on yields are low due to the method of harvesting and the fact that the ponds were not completely drained and cleared of fish. There were other factors which contributed to low yields, varying from nutrient availability to the methods of measuring yield. Benefits from the fish harvests accrued to the villages in the form of cash from tickets sold to participants on harvest day (tickets were priced according to the size of nets utilized by participants in the harvest). Income from ticket sales generated approximately 112,000 Baht in 10 of the 14 villages (See Attachment V). Cash receipts have been used by the villages for a variety of activities, including repairs to temples, pond maintenance, fence mending, road repair, school repair, building a village reading room, and others. Villagers were allowed to retain all fish caught with their nets. Benefits accrued directly to villagers from fish caught and either sold, eaten, or preserved. Figures are not available to quantify these benefits.

8. Evaluations. There were four separate evaluations that reviewed and commented on project activities at various times and in various forms. These included a major mid-project evaluation, an early review of activities by an Auburn University team, a 3-month monitoring effort and report, and a final evaluation and wrap-up report.

a) The Auburn review, which was conducted in October 1980, concluded that the yield objectives were unrealistc and voiced some concern about the water holding capability of the ponds. They cited other problems and positiive aspects. In general, they concluded that, over the long term, the concept was viable and met the felt needs of rural people.

b) A major evaluation was undertaken by a joint US-Thai team in June 1981. It concluded that while the project wasn't meeting all its objectives (particularly on yields), there was sufficient evidence of progress and benefit to warrant funding a follow-on project.

c) The Chulalongkorn University Social Research Institute (CUSRI) conducted a three-month monitoring program during Oct-Dec 1981, covering 10 of the 14 villages. Their observations indicated that, though socio-economic benefits were at the time minimal, there were indications that the potential for such benefits were high. In their report were a list of possible criteria for village selection in future projects. These criteria were of great benefit to the Department of Fisheries in developing its village pond program within the Fifth National Five Year Plan.

d) A final evaluation/assessment was prepared by CUSRI in September, 1982. One of the major intents of the CUSRI report is to provide criteria based on lessons learned to assist the DOF in carrying out its on-going village fish pond program under the National Fifth Five Years Plan.

9. Operations Research. This activity was not fully carried out in accordance with the original project design due to management and organizational delays and villager unreadiness to initiate the proposed activities. One major trial activity that was undertaken involved ducks over fish ponds. The final results on yields and farmer interest were very positive. Other demonstration/research activities initiated in fish pond villages, using PDS funds, included 6 additional duck over fish ponds in 2 villages, fish raising using composted water hyacinth as feed, and a village health and sanitation program. Further follow up is recommended to determine villagers' willingness and ability to continue and expand these types of activities.

10. Workshops. One village was very successful in initiating other development activities, not necessarily utilizing the pond resources per se, but which were generated by community interest arising from the development of the pond. Two workshops were held at this village, attended by representatives from each of the other villages and members of the site teams. The purpose of the workshops was to show and demonstrate what could be done given certain initiatives on the part of villagers. Activities discussed and demonstrated included vegetable production, silkworm raising and mulberry tree production, village health and sanitation programs, mushroom production, bio-gas systems, duck over fish ponds, paddy fish canals, non-formal education, fish sauce production, and others. There are indications that some new activities were undertaken in a few villages following these two workshops. It is recommended that a follow-up survey be made to determine the extent to which such activities were initiated.

IV. Beneficiaries Direct and Indirect.

The direct beneficiaries of the project were the villagers in each of the fish pond villages. They numbered approximately 14,000 persons in the 14 villages. The benefits which accrued included fish, water, and

satisfaction. It is impossible to measure how much of each was used or received by each person given the nature of the harvests, varying proximity of individuals land to the pond, common use of funds collected at harvest time, and such other factors as time saved with availability of a new water source, and other activities which may have been undertaken as a result of the ponds presence and water availability. A number of villagers did utilize pond water for dry season vegetable crops. One village attempted to grow tomatoes for sale to a cannery. They found, however, that the price and thus profit was not high enough to warrant continuation. They went into other vegetables the next year. Indirect beneficiaries were those from other villages who also participated in the harvests and caught fish. In this group there should be included those who obtained new ideas about fish production and actually constructed their own family ponds.

V. Lessons Learned.

The evaluation/assessment recently completed by CUSRI will deal extensively with this subject. Although the report has not yet been fully reviewed by DOF and USAID, discussions with CUSRI and DOF personnel indicate, as might be expected, that improvements can be made in any follow-on effort. These include but are not limited to the following:

1) Site selection. An earlier CUSRI Monitoring report listed several factors to be considered in selecting future sites. These included:

   (a) proximity to market towns;
   (b) previous development experience of the villagers;
   (c) occurrance of seasonal off-farm labor migration;
   (d) involvement of one or more villages and relationships among headmen and villagers;
   (e) level of poverty (or richness).

   In addition, more care needs to be taken with regard to water flows, soil texture, weed and tree growth, etc.

2) Management. Consideration should be given to more decentralization of management and operations to the provincial stations and officers. This would have facilitated some operations research and other activities that were delayed due to the inability of an over-burdened Bangkok staff to act expeditiously.

3) Yields. Expectations were much too high given the initial management capability of the villagers. Nutrient availability was overestimated as well as villager willingness to supplement the ponds. More rigorous social and technical research might have precluded such over-expectations in the project paper. More and continuing technical assistance through fisheries extension agents will be necessary to increase yields.

4) Operation Research. More attention should have been given to this aspect of the project. From activities that were organized and conducted, it would appear that villager interest could have been further increased. These included fish-duck ponds, silkworm raising, non-formal education, breeding and rearing of fish, village water and sanitation, mushrooms, and others. If continued in these villages and included in the RTG village pond program, they should lead to increased individual farm family income and improvement in nutrition.

5) Project Name. The project might better have been called "Village Water Resources Management". This would have lent itself to a wider range of informally organized activities without the sole measure of project success related to proving fish yields and kilos of protein.

VI. Review of Warranties and Project Covenants.

(See Attachment II).

VII. Post-Disbursement Reporting and Residual Monitoring Requirements.

No reports are required from the project after completing disbursement of project funds (which has been done). It is recommended, however, that one year following project completion, a visit be made to each site to determine if the villagers continue to maintain and utilize the ponds. Findings could have a significant useful bearing on similar future project activities.

VIII. Summary Financial Statement.

The attached Financial Report provides a breakdown of the various transactions undertaken by the project (Attachments III and IV).

The U.S. contribution totaled $391,161 dollars out of $442,000 approved. Approximately 78% was spent for pond construction. The host government contribution totalled $140,000 equivalent, covering salaries, fingerlings, travel, and equipment. The attached chart provides information on each of these line items and activities.

Dollars 50,839,81 were deobligated in early FY 83. No further financial activities are anticipated.

IX. Concluding Statement.

Principal measures of success in any project include sustainability, replicability, beneficiary satisfaction, and increased well-being (income, etc.). It is fair to say that Village Fish Ponds produced positive results in each of these categories.

The ponds are still functioning and managed by the villages. This is being done with minimal but timely assistance from provincial fisheries personnel. While outside assistance is still sought by the Department of Fisheries, it is for expanding and improving services already being offered to villagers rather than for support of continuing activities.

The Royal Thai Government has included a village fish ponds component as a key element in the current National Development Plan. The basic program evolved from experiences and lessons learned in the Village Fish Ponds I project. The DOF has already constructed and stocked numerous ponds in rural villages (over 50 in CY 1982). Plans call for many more to be constructed throughout the 5-year plan (approximately 75 per year). Other donors are in the process of preparing assistance programs to support fish pond development.

Improved villager well-being can be best described in subjective terms, but there are some indications that they and their villages are better off in quantifiable terms. There have been 17,300 kilos of fish harvested from nine ponds, a figure which is certainly on the low side of the actual harvest and pond population. (These are the only ones from which data are available). In addition, baht 112,000 was collected from harvests and utilized by villages for various community activities (See Attachment V). A major benefit, which was not forseen, is the satisfaction derived by the village in having a year-round source of all purpose water close to the village plus the comforting knowledge that there are always fish in the water.

Another valuable contribution of the Village Fish Pond I Project may be the demonstrated benefits of the village pond which led to individual construction of small household size ponds. It is from this type of pond that family nutrition and income will improve significantly. For those households that do not construct ponds, fish and other products will be more readily available in the village from those that do produce surpluses and at lower cost.

In conclusion, it is fair to say that fish ponds and fish production are important factors in the development process of rural Thailand, especially in the Northeast - and that the Village Fish Ponds I project played a major catalytic role in furthering this process.

Attachment I

SUMMARY OF ACCOMPLISHMENTS

Expected	Actual	Projected	Comments
1. Water for domestic and livestock uses during dry season.	1. Was available in all villages; uses varied depending on village committee rules.	1. Continued availability and use according to village committee regulation.	1. Number of village users and activities depends on size of pond, number of villagers, rainfall, proximity of other water sources.
2. Net increase in agricultural production from supplemental crops and timely initiation of rice nurseries.	2. There was a net increase in vegetable plots cultivated. Very little if any use of water for rice nurseries.	2. Continued use of water on vegetable plots but little else.	2. Only a limited number of villages had access, based on proximity of land to pond.
3. Fish production yielding minimum increase of 10 kgs. per capita per annual cycle.	3. This was not accomplished in only one of the ponds.	3. Total annual output might reach this level in some ponds but the effective harvest may not.	3. The nutrient availability may not allow for this level of output in some ponds. The current system of annual harvest fairs is not conducive to maximizing output on a per capita basis. This system may change, but more likely, people will develop their own family ponds instead.

Expected	Actual	Projected	Comments
4. Self-reliance of villagers to manage pond and provide most of seed-fish requrements.	4. Management of ponds by villagers has been very effective. Seed fish requirements have been met by Fish Stations.	4. It is anticipated that villagers will be producing their own fingerlings within a couple of years at village nursery ponds already constructed.	4. Two of 14 villages are already producing their own fingerlings. The training, follow-up, and confidence required will take a while but most of the villagers should be capable within the next couple of years.
5. Variety of successful community management techniques demonstrated.	5. Not much variety except for different rules and regulations, and different size village committees.	5. Committees will continue to function.	5. There has been interest among villagers to maintain the water supply and produce the fish. Thus, village committees will probably remain an active force.
6. Empirical evidence on most advantageous multiple use reqimes for socioeconomic benefit to village.	6. Evidence has been generated to demonstrate multi purpose uses of ponds.	6. It is anticipated that many of the activities will continue and increase in some of the better villages.	6. There is keen interest within DOF to expand many of these activities to new ponds in the Fifth Plan program. Without directed support, little expansion from villagers themselves can be expected.
7. Plans underway to replicate program in other areas of Northeast.	7. USAID plans for a follow on project were deferred by the Mission. The RTG has a village fish pond program in its fifth plan.	7. There is little expectation that USAID will follow up this project. Other donors are becoming involved in aquaculture in the Northeast.	7. From an overall village development point of view, fishponds in a viable activity. Thus, the RTG and others have seen the value and are in fact replicating this type activity.

Attachment II

Review of Warranties and Project Coverrants

Conditions Precedent	Status/Remarks
1. Names and specimen signatures of the Grantees representatives(2).	Completed; no residuall action necessary.
2. Establishment of the management team.	- ditto -
3. Financial Plan.	Completed; unexpended funds have been deobligated.
4. Implementation and training plan.	Completed; all programmed training completed.
5. Procurement plan.	Completed; all programmed purchases completed.
6. Disbursements for Construction a) Final site plan including: (1) Construction plans including: -location. -design specification. -construction arrangements. -firm cost estimates.	Completed; residual repairs at one site not undertaken; no further actions to be initiated by USAID; DOF may initiate repairs in the future.
(2) Water use plan and regulations approved by the villagers.	Completed and initiated in each village.
(3) Establishment and operation of a village committee.	Completed.
(4) Establishment of a training program on pond management for the village committee.	Completed.
(5) Logistical plan to assure adequate supply of fingerlings to the site.	Completed, no problems or shortfalls encountered
(6) An executed construction contract.	Completed.

Special Covenants

1. Project evaluation program to be established to include:	Review and Evaluation conducted Oct. 1980 and June 1981. Monitoring report completed in Dec. 1981.
a) evaluation of progress toward attainment of project objectives.	These covenants (1a, b, c), covered by above review and evaluation.
b) identification and evaluation of problem areas or constraints.	
c) assessment of how much information may be used to help overcome such problems.	
d) evaluation of the overall development impact of the project.	Covered by final assessment conducted by CUSRI in Sept. 1982.

Attachment III

Host Country Contribution

Item/Activity		
1. Salaries a. Site teams b. Supervisors c. Evaluation Team d. Fish Production Staff.	$ 57,000	1. The various staff required were provided by DOF. An exact breakdown of cost per person is not available and would be difficult to assemble.
2. Fingerlings	50,000	2. Fingerlings were provided to each pond as needed and in a timely fashion.
3. Operations Research a. Travel b. Per Diem c. Local Hire	20,000	3. Personnel travelled in conjunction with these activities. A full account-would be difficult to assemble.
4. Commodities a. Pumps b. Nets	13,000	4. Purchased by DOF as planned.
Total	$140,000	

Attachment IV

USAID Contribution-Summary Financial Report

Item	
Construction of Tanks (Ponds)	$ 306,063
Nursery Ponds	10,470
Pond Rehabilitation	1,955
Technical Assistance	10,191
Operations Research	32,198
Training	5,469
Evaluation	8,749
Equipment	10,093
Workshop	5,972
Total	391,160

(figures rounded)

Attachment V

Village Fish Ponds - Summary Data

Pond	Pond Area Rai	Fish Production Kg	Fish Yield Kg/Rai	Income Baht	Population Person	Investment	Fish Yield per capita (Kg)	Fingerlings Released (000)
1. Nong Bua	65	-	-	-	464	438,000	-	57
2. Nong Toom	32	984	31	21,960	1,146	562,000	0.86	285
3. Nong Kae	79	2,000	25	10,000	1,346	336,000	1.78	164
4. Nong Dern	110	-	-	4,720	700	999,000	-	240
5. Nong Kamputa	32	1,100	34	8,093	1,784	675,000	0.62	70
6. Nong Pluei	60	4,000	68	17,000	508	299,000	8.07	470
7. Nong Wang	110	2,800	25	8,000	900	406,000	3.11	30
8. Nong Bua	305	-	-	1	1,266	480,000	-	330
9. Nong Tung Tern	75	-	-	4,000	1,158	400,000	-	990
10. Nong Phing	25	2,581	103	19,000	650	120,000	3.98	160
11. Huai Hua Dong	21	784	37	-	1,211	499,000	0.65	60
12. Hong Phai Mai	50	1,000	20	7,670	502	500,000	1.99	280
13. Nong Chiang Meo	100	1,949	19	10,673	1,402	111,000	1.39	160
14. Nong Pran-Pra	750	-	-	-	1,000	965,000	-	400
TOTAL	1,814	17,298	-	111,116	14,032			
Average	130 Rai	1,922 Kg	40 Kg/Rai	11,111 Baht/ Village	1,000 Per/Village	464,000 Baht/ Site	2.50 Kg.person	264 Each/ pond

Note: Ponds showing no production have not yet been harvested.