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PROJECT ASSISTANCE COMPLETION REPORT

Lam Nam Oon Integrated Rural Development Project

Project Number 493-0272

Loan Number 493-T-020

Agricultural and Natural Resources Development Division  
USAID/Thailand

June, 1988

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PROJECT ASSISTANCE COMPLETION REPORT

Lam Nam Oon Integrated Rural Development Project (LNO)

Project Number 493-0272

1. Goals and Purposes:

The project purpose focused on increased agricultural production realized through improved agricultural practices, e.g., irrigation, as well as on other factors contributing to farm family well-being; provision of social services, including health care and educational opportunities; and participation in local government and community activities which provide the family a voice in decisions affecting their welfare. A further aspect of the project purpose was to strengthen Thai agencies and institutions supporting the project to better administer and coordinate LNO-related activities and thus achieve a truly integrated rural development project.

Achievement of the project purpose would contribute to the goal of improving the standard of living for the 10,000 farm families in the LNO area. Hopefully, success attained on Lam Nam Oon would provide a sound base by which, through replication, the broader goal--improving the quality-of-life for other poor farm families in Thailand whose lands are irrigated or irrigable--can be realized.

The Project included: (a) the completion of construction of the irrigation system in the Lam Nam Oon Project Area; (b) construction of a road network for maintaining the irrigation system, doubling as a feeder road system for the farmers; (c) operation of on-farm water supply systems; and (d) an integrated program of community development, including agriculture research and extension, provision of farm inputs, farm products marketing, health and family planning services, and adult education. The Project also included the introduction of modern sericulture activities to approximately 150 farm families resettled from the reservoir area to the upstream resettlement area.

In January 1982, the focus of the Project was narrowed to concentrate on the two highest priority areas of expanding water delivery and use and intensifying irrigated agricultural production. The activities of a number of RTG agencies were directed toward the provision of controlled irrigation to area farms and the generation and extension of improved agricultural production technologies.

Operations and maintenance efforts would be increased to assure that the main irrigation and drainage system could provide adequate quantities of water to the expanding area of on-farm systems. Additional equipment, personnel, budget support, and improved management systems would be provided to increase operational efficiency and prevent deterioration of the physical structures.

The agricultural research program would be expanded and accelerated for the increasing number of farmers with access to irrigation in the Project area.

As revised, the Project would also support a more intensive information extension program which was focused on irrigated agriculture and the specific needs of the farmers in the Project area.

The integrated rural development activities in community development, health and education services would not be financed during the remainder of the Project, although many such activities would continue in the Lam Nam Oon area under regular RTG national programs. The silk and fish production programs would be continued under the Project.

2. Accomplishments: Actual and Projected

The irrigation system is capable of providing water to approximately 167,000 rai of land in the wet season and 67,000 rai in the dry season. Cropping intensity during the wet season is 100% with farmers planting mostly high yielding strains of glutinous rice and a relatively small amount of non-glutinous rice. The area cultivated during the dry season is relatively small at the present time. However, this area has been as high as 26,000 rai (1980/1981) and as low as 3,000 rai (1984/1985). Causes of the fluctuation appear to be the lack of experience of Lam Nam Oon farmers with dry season cultivation and the absence or instability of markets for dry season crops. Some farmers noted that they were satisfied with increased in wet season rice production and did not wish to raise crops in the dry season.

In January 1982, the project objectives were revised to focus on water delivery and on intensifying irrigated agricultural production. These objectives, specified in Project Implementation Letter No. 14 (January 27, 1982), consisted of:

- 314 kms. of main and secondary irrigation channels, 178 kms. of drainage channels
- development of a long-range plan for land development
- completion of 90,500 rai of on-farm land development

- testing of alternative on-farm irrigation models (including the RID and Lam Nam Oon models)
- operation and maintenance of irrigation system according to plan developed by RID project staff and USAID consultant
- revised agricultural research program emphasizing cropping patterns and integrated farming systems with at least 100 2-rai test plots in operation
- trained RTG personnel providing technical assistance and information to farmers regarding on-farm water management and irrigated crop practices
- 18 families in the Lam Nam Oon Self-Help Land Settlement trained in silk production practices
- increased fish production for food and income purposes realized from fish cultivation and villager training programs

The End of Project Status (EOPS) specified in Project Implementation Letter No. 14 has been substantially achieved. Although, in the case of the 100 2-rai test plots, only the physical facilities were completed. In only a few instances were these plots cultivated.

Operation and maintenance of the farm irrigation systems have improved and become more systematic. The physical facilities are in generally satisfactory condition and are able to supply irrigation water at designed quantities. There is a persistent shortage of maintenance funds due to national budgetary constraints which may be cause for concern in the future. A computerized water management system has been developed and is being tested. Full-scale tests began June 1986. This system promises to improve the efficiency of the irrigation system, particularly as the area under dry season cultivation expands and requires the rotation of water supplies on a scheduled basis.

A core group of agencies -- RID, the Community Development Department, the Office of Land Consolidation, the Department of Fisheries and the Department of Agriculture -- continue to cooperate closely in operations and planning at Lam Nam Oon. Other agencies such as the Department of Non-formal Education and the Department of Agricultural Extension appear prepared to continue their cooperation but are constrained by limited budgets for activities outside of their nationally mandated programs. A number of agro-business firms have undertaken commercial or pre-commercial activities in the Lam Nam Oon area to produce crops for industrial processing and the production of seed for domestic use and export. This is partly the result of marketing activities carried on by the Lam Nam Oon Project staff and partly the result of the natural

suitability of Lam Nam Oon for agro-industrial activities. Other firms have expressed interest in crop production or processing activities at Lam Nam Oon, but this will depend on the degree of support they can expect from the government in initiating these activities, many of which may be uneconomic in their initial stages.

As a result of this project, RID has come to realize that it can no longer focus solely on the infrastructure aspects of its irrigation projects, but must also take the initiative in inducing the cooperation of other agencies needed to assure that the infrastructure is used productively. To this end, RID is in the process of establishing an internal unit to promote such cooperation and to manage four model irrigation projects to demonstrate the necessity of integrated or policy coordinated approaches to agricultural development.

### 3. Summarized Project History:

The Lam Nam Oon area, like most of Northeastern Thailand, suffered from severe poverty due to a low level of agricultural productivity, poor soils, frequently inadequate rainfall, and periodic floods limiting cropping to subsistence levels, with virtually no possibility of cultivation during the dry season. The extreme poverty in the area led to the emergence of a serious insurgent movement in the area. In 1968, the Royal Thai Government (RTG), with financial and technical assistance from USAID, undertook construction of a large irrigation system covering approximately 30,000 hectares. The 3.5 kilometer earth dam for this system was completed in 1973.

The RTG requested additional assistance in 1974 to complete the downstream portion of the irrigation system. As initially designed, the Lam Nam Oon Integrated Rural Development Project (AID Project No. 493-0272) was intended to make possible substantial dry season cultivation by completing the main and lateral canal systems, constructing the on-farm distribution and drainage network and improving the operations and maintenance of irrigation system at both above-farm and on-farm levels to promote overall rural development through an integrated approach, involving community development, agricultural research and extension, adult education, and public health services. USAID financial support (Loan No. 493-T-020) for technical assistance amounted to US\$3.5 million at the termination of the project. Technical assistance was provided to the Royal Irrigation Department (RID) by a team of expatriate consultants consisting of a rural development specialist, an irrigation engineer, and an agricultural economist/marketing specialist. From time to time, these personnel were supplemented by short-term consultants in various fields.

The Lam Nam Oon Integrated Rural Development Project began in 1967 and ended in September 1985, but continued through April 1988 on "Integrated Agro-Production and Marketing Program under Agricultural Technology Transfer" (ATT) loan funds in the amount of US\$100,700.

4. Beneficiaries: Direct and Indirect:

At the end of the project, 10,000 farm families have directly benefited from the irrigation system which is capable of providing water to approximately 167,000 rai of their farm land in the wet season and 67,000 rai in the dry season. Cropping intensity during the wet season is 100 %, with farmers planting mostly high yielding strains of glutinous rice. Wet season rice yields are two to three times higher than yields before irrigation was available.

Operation and maintenance of above-farm irrigation systems improved and became more systematic over the period of the project.

Over 600 water-user groups have been formed and trained in on-farm water management.

As a result of this project, the Royal Irrigation Department has decided to establish an internal unit to replicate the approach developed at Lam Nam Oon in three other large irrigation projects.

Four agro-business firms have already begun operation in the project area and a number of other have expressed interest in developing contract farming.

The indirect benefits will be in the form of employment generation, reduction of migration rates, and improved security in the Lam Nam Oon area.

V. Summary of Lessons Learned:

Large systems, such as Lam Nam Oon, should constitute a distinct category of area, similar to the "poverty" areas under the Fifth Five Year Plan or to the "backward and progressive" areas being used under the Sixth Plan. Doing so will require government agencies to take the special needs of the irrigated areas into account when preparing their annual budget proposals. Guidelines issued by the National Economic and Social Development Board, in consultation with RID and other agencies, would help provincial development committees to review the budget requests of provincial offices prior to forwarding them to their parent agencies. Such a system would encourage coordination by requiring agencies to adopt a common frame of reference in defining their goals.

Experience at Lam Nam Oon has shown that the water-user groups function effectively at the present time. As farmers increase their use of the system and intensify their cultivation, their water management burden and their need for more sophisticated cropping

techniques will grow. Therefore, there is a need for a long-term program of technical support and training for water-user groups. There is also a need to develop a system to support second generation irrigators (the children of the present farmers) both in terms of the technical aspects of irrigation and irrigated agriculture, and in terms of developing a more commercial orientation toward agriculture.

The only opportunity for a significant expansion of dry season agriculture at Lam Nam Oon is by developing commercial outlets for crops. The marketing review indicated important local area marketing opportunities for a variety of crops, as well as numerous opportunities for production for export. The RTG should adopt means to encourage investment by such business at Lam Nam Oon and the introduction by such investors of new agricultural technologies needed for the production of significant volumes of high quality commodities.

The introduction of a computer-based water management system at Lam Nam Oon is a major innovation. Support should be given to the development and improvement of this system, particularly since successful dry season agriculture at Lam Nam Oon will require the management of multiple crops, with complex water distribution schedules. If adequate water management is not assured, private sector investors will be deterred from investing at Lam Nam Oon.

The lesson learned is that a detailed implementation strategy should be incorporated in the project from the outset, even though it will probably be modified. Such a strategy gradually evolved at Lam Nam Oon, but project benefits (particularly commercially oriented dry season cropping) would have been greater had it been adopted earlier.

6. Review of Warranties and Project Covenants:

A. Article 5 - Conditions Precedent (CP)

<u>5.1 CP to Disbursement</u>	<u>Remarks</u>
a. Legal Opinion from RTG regarding the validity of obligation incurred under the loan agreement	Met
b. Designation of Authorized Representatives	Met
c. Designation of Team Leaders	Met
d. Establishment of a National Coordinating Committee	Met
e. Contract for Technical Service	Met

5.2 CP to Additional Disbursement:

Detailed Implementation Plan Met

B. Article 6. Special Covenants

Detailed Project Evaluation Plan Met

7. Post-disbursement Reporting and Residual Monitoring Requirements:

The disbursement termination date expired 6 months after the Project Assistance Completion Date (PACD). No post-disbursement reports are required.

During the continued period through April 1982 on an "Integrated Agro-Production and Marketing Program under ATT" Project, a number of agro-business firms have undertaken commercial activities in the Lam Nam Oon irrigated area. The Royal Irrigation Department (RID) is in the process of requesting Technical Assistance for the ATT Project Director to assist in replication of Lam Nam Oon approaches in the management of four model irrigation projects to demonstrate the necessity of integrated or policy coordinated approaches to agricultural development.

8. Summary Financial Statement

a. Life-of-Project Funding

USAID (L)	US\$ 3.2	(G)	US\$ 0.04
RTG	US\$60.0		
TOTAL	US\$63.24		

b. USAID Contribution (1/ Amended in PIL No. 40)

<u>Project Title/ Element Description</u>	<u>Total Obligations</u>	<u>total Expenditures</u>	<u>De-obligation</u>
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LOAN

1. Infrastructure	US\$ 157,717	115,717	42,000
2. Technical and General Support	US\$ 1,574,193	1,463,850	210,343
3. Consultant Services	US\$ 1,668,090	1,012,659	55,431
TOTAL	US\$ 3,500,000	3,192,226	307,774

GRANT

1. Training	US\$	40,000	13,400	26,600
2. Evaluation	US\$	<u>60,000</u>	<u>30,424</u>	<u>29,576</u>
Total	US\$	100,000 =====	43,824 =====	56,176 =====

c. Host Country Contribution

The resources provided by the RTG for the Lam Nam Oon Integrated Rural Development Project included costs borne on an "in-kind" basis and are estimated to have been around \$60 million.

Clearances: A/PD/PS:Det (draft) 6/20/88  
O/TR:DJClark (draft) 6/22/88  
PDS:WBaum (draft) 6/24/88  
O/FIN:RHammersley (draft) 7/6/88

TR/ANR:Kamel:sk  
6/17/88



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ACTION MEMORANDUM FOR THE ACTING MISSION DIRECTOR

July 8, 1988

THROUGH: A/DD, Mr. Douglas J. Clark *DJC*  
FROM: TR/ANR, Mr. Kamol Chantanumate, Project Officer *KC*  
SUBJECT: Lam Nam Oon Integrated Rural Development Project (A.I.D.  
Project Number 493-0272) Completion Report

Background:

The Lam Nam Oon Integrated Rural Development Project (A.I.D. Project Number 493-0272) was completed on September 30, 1985, but continued through April 1988 on An Integrated Agro-Production and Marketing Program under Agricultural Technology Transfer Project (ATT) loan funds. AID Handbook 3 requires the preparation of a "Project Assistance Completion Report."

Discussion:

The attached Project Assistance Completion Report follows the guidance for preparing such reports as contained in Handbook 3, Chapter 12, Appendix 14A. It includes, among other things, a brief review of project accomplishments, a statement of lessons learned in implementing the project, and a summary of donor contributions.

Recommendation:

That you signify your acceptance of this completion report by signing below.

Accepted: *[Signature]*

Rejected: \_\_\_\_\_

Date: 7-8-88

Clearances:

A/PO/PS:Det (draft) 6/20/88  
O/TR:DC Clark (draft) 6/22/88  
PDS:W Baum (draft) 6/24/88  
O/FIN:RHammersley (draft) 7/6/88

TR/ANR:Kamol:sk  
6/20/88

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