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AUDIT OF  
THE NORTHEAST RAINFED AGRICULTURAL  
DEVELOPMENT PROJECT IN THAILAND  
PROJECT NO. 493-0308

AUDIT REPORT NO. 2-493-85-05  
September 20, 1985

UNITED STATES GOVERNMENT

# Memorandum

TO : Mr. Lee Twentyman, Acting Director, USAID/Thailand      DATE: September 20, 1985

FROM : Leo L. LaMotte *Leo LaMotte*      RIG/EA-85-284  
RIG/A/Manila

SUBJECT: Audit Report No. 2-497-85-05  
Audit Of The Northeast Rainfed  
Agricultural Development Project

Attached is your copy of our audit report on the Northeast Rainfed Agricultural Development Project. We reviewed the economy, efficiency and program results of the Project and focused on major issues of program planning and implementation which had a significant influence on achievement of project objectives. The audit was conducted during the period November 1984 to June 1985.

The Project has successfully initiated some project activities in the targeted areas and coordination of the Thai Government Ministry of Agriculture departments has also improved. However, important issues need to be addressed before committing additional resources because:

- The direct beneficiary cost, high to begin with, has escalated considerably. We are recommending that this cost be reduced or consideration be given to terminating the Project.
- Many of the technologies being developed by the Project are duplicative because they have already been adopted in Ministry of Agriculture and Rural Poverty Area programs. We are recommending that in any redesign of the Project duplicate technologies be dropped.
- Project managers do not know whether project technologies will increase farmer income because the ratio of costs to benefits has not been analyzed as required. We are recommending that the required cost/benefit analysis system be implemented and that only replicable technologies be retained in the project.
- There is little prospect of replicating the Project's regional system of coordination between the 8 Agricultural departments unless a strategy for doing so is developed and implemented, as we are recommending.

- The USAID is unable to determine whether project funds are being properly expended or objectives are being achieved because the required management system has not been established. We are recommending that a system be developed and implemented to establish and measure quantifiable objectives, goals and milestones.

In your comments on the draft report you expressed the belief that it is premature to scale down the project without a thorough evaluation by technical experts and you said that concerns raised in the report were being included in the scope of a June 1985 evaluation. The results of the evaluation should be considered in responding to our recommendations.

USAID/Thailand has responsibility for coordinating corrective action on the reported recommendations. Please advise this office within 30 days of the actions taken or planned to clear the 6 r commendations made in our report.

Attachment: Report on Northeast Rainfed Agricultural  
Development Project

## EXECUTIVE SUMMARY

The audit focused on economy, efficiency, and program results of the Northeast Rainfed Agricultural Development Project. The major issues reviewed were the adequacy of program planning and implementation which had a significant influence on achievement of project objectives. Our audit included review of project records maintained by the USAID/Thailand and the Project Management Center. We also interviewed officials of these offices, Thai officials and farmers at some of the project sites. The audit was accomplished during the period November 1984 to June 1985.

The Project (budgeted at \$15.7 million) was designed to increase the income levels of farmers in Northeast Thailand. This was to be done by (1) showing how 8 departments of the Thai Government Ministry of Agriculture and Cooperatives could coordinate their development activities at the regional and lower levels, (2) developing a system for introducing new agricultural technologies to the Northeast region, (3) applying agricultural technologies in villages in 9 representative tambons <sup>1/</sup>, and (4) replicating the integrated system and technologies in the entire Northeast region.

The Project has established a functioning implementation organization and has been successful in initiating some Project activities in the targeted tambons. Coordination of the Ministry's departments has also improved for the project area and progress has been made in developing and testing of agricultural technologies. However, as the Project approaches its midpoint, there are issues which should be addressed before AID commits additional time and funds to this effort. These are:

- The direct beneficiary cost, admittedly high to begin with at \$1,570 per farm family, has escalated many times because the target population was reduced to make the Project more manageable. For instance, the cost rose to about \$9,430 per family for 1,000 of the 10,000 targeted families. These families were scheduled to receive 60 percent of the project resources. This raises questions as to the economic reasonableness of the Project and whether it should be terminated or continued in its present form.
- Developing new, replicable agricultural technologies was a primary project objective. Many of the technologies being developed and funded by the Project have already been adopted by the national Rural Poverty Area Program or regular programs of the Ministry Of Agriculture and Cooperatives departments. Thus, these Project efforts are duplicative and will produce only marginal incremental benefits.

<sup>1/</sup> A tambon is a level of organization between a village and district.

- There is little prospect of replicating the Project's system of coordination between the 8 departments unless a well-planned and concerted effort is made to bring it about.

Project managers do not know whether the agricultural technologies the Project supports will increase the income of farmers. Unless it can be demonstrated that a technology will increase the farmers' income, it is doubtful whether that technology will be accepted by farmers or the Thai Government and replicated throughout Northeast Thailand. This has not been done because the Thai office responsible for analyzing costs and benefits of technologies has concentrated on a farmer record-keeping system which has been of little use to the Project.

AID regulations require the USAID to assure that project plans set forth quantifiable goals and objectives and milestones for their achievement and that a management information and monitoring system be established to compare progress to plans. Our review showed, however, that neither the Project's plans nor management information system provide such information. As a result, the USAID is unable to determine whether project activities are being implemented as planned, funds are being expended properly, or objectives are being achieved.

So the Project will have a reasonable chance of success and can be better managed, we recommend that USAID/Thailand:

- determine whether the cost per beneficiary family can be reduced to ensure that the Project cost is reasonable, or formally justify its continuation.
- retain only those technologies in the Project which are not duplicated in the national government programs and have a high probability for replication in Northeast Thailand.
- develop and implement a strategy and plans to ensure that the improvements in coordination between the Ministry's departments achieved during implementation continue after the Project ends.
- ensure that the requirement for economic studies of project technologies is met.
- establish a management information system which will assist in project management and meet AID's standards for project monitoring.

The USAID Director stated that a thorough review and analysis of the Project was conducted by the auditors. USAID officials also stated that they were generally aware of the Project deficiencies pointed out in this report and have taken some action to address them. However, the USAID believes it is

premature to scale down the Project without a thorough evaluation by technical experts. In this respect, concerns raised in this audit report were included in the scope of work for a June 1985 evaluation of the Project. The joint Thai/USAID evaluation team should provide Project management with additional recommendations for making midterm corrections to enhance the Project's chances of success. We incorporated other pertinent USAID comments in the text of the report. See Appendix 1 for the text of USAID comments.

*Office of the Inspector General*

AUDIT OF  
THE NORTHEAST RAINFED AGRICULTURAL  
DEVELOPMENT PROJECT IN THAILAND

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PART I - INTRODUCTION

A. Background

Northeast Thailand contains about one-third of the land area and population of the nation. Most of the more than 18 million inhabitants in the Northeast depend on erratic rainfall to provide necessary crop and livestock water. This often results in crop loss due to flooding or drought. The Northeast also has generally sandy, low fertility soils that have low water holding capacity. Because of these limitations, Northeast Thailand has the lowest per capita income of any region of Thailand. Half of the roughly 14 million Thais living in "absolute poverty" are located in this region.

The purpose of the Northeast Rainfed Agricultural Development Project (NERAD) was to establish, in 9 representative tambons <sup>1/</sup> of Northeast Thailand, a replicable <sup>2/</sup> agricultural development program for increasing farm productivity and farm income among lower income farmers in rainfed zones. The Project was to enhance farm family income both through increasing net cash income and through increasing the amounts and kinds of home-consumed products.

A total of \$15.7 million has been committed by the Royal Thai Government (RTG) and AID to carry out NERAD. This included \$5.7 million the RTG has committed and \$10 million in AID loan and grant funds. See Exhibit A for total budgeted costs of the Project. The status of AID loan and grant funds were:

	<u>Status Of AID Funds For NERAD</u>			
	<u>As of December 31, 1984</u>			
	<u>(In \$ Millions)</u>			
	<u>Obligated</u>	<u>Committed</u>	<u>Expended</u>	<u>Unearmarked</u>
Loan	\$ 6.3	\$ 2.3	\$ .8	3.2
Grant	3.7	2.5	1.2	-0-
Total	<u>\$10.0</u>	<u>\$ 4.8</u>	<u>\$ 2.0</u>	<u>3.2</u>

<sup>1/</sup> A tambon is a level of organization between village and district.

<sup>2/</sup> Replication involves both the application of the same problem solving approach and diffusion of proven agricultural technology to other areas.

The AID grant (493-0308) and loan (493-T-025) that financed NERAD were signed August 31 and September 24, 1981, respectively. A technical assistance contract with the University of Kentucky was not signed until 11 months after the project agreement. The Project did not get fully staffed and underway until early 1983. In August 1988, USAID participation in NERAD was scheduled to end.

#### B. Audit Objectives And Scope

The audit focused on whether project objectives and goals were being achieved and the economy and efficiency of the Project. The major issues reviewed related to program planning and implementation which had a significant influence on achievement of project objectives. More specific objectives were to determine whether: 1) current project objectives were being achieved; 2) regional coordination is a realizable objective; 3) replicability was and can be achieved; and 4) the management information system is adequate.

The audit was performed during the period November 1984 to June 1985 at USAID/Thailand and in the Northeast area of Thailand, primarily Khon Kaen, where the Project Management Center is located. We also visited Roi Et and Chaiyaphum provinces to review project activities. Our audit included reviews of project records maintained by the USAID/Thailand and the Project Management Center. We interviewed officials of these offices, RTG officials and farmers at some of the project sites. We also reviewed the policies and practices of the USAID, the RTG implementing agencies and other RTG entities having an impact on project implementation.

Most of the expenditures of project funds were made and accounted for by 8 departments within the RTG Ministry of Agriculture and Cooperatives (MOAC). The USAID, in making reimbursement for these expenditures, relied on the internal control systems of MOAC departments. Since it would have required substantial resources to audit these entities and most of the records are in Thai, we did not review the internal control systems of the departments. This matter is discussed in more detail in the Compliance and Internal Control section of this report (see page 16).

The audit was made in accordance with generally accepted government auditing standards.

AUDIT OF  
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PART II - RESULTS OF AUDIT

A. Findings And Recommendations

1. NERAD Should Be Redesigned To Match Achievable Benefits

AID guidance supports the adjustment of design and implementation methods for complex projects, such as the Northeast Rainfed Agricultural Development Project (NERAD), which are experiencing implementation problems. As presently being implemented, the primary accomplishment of NERAD will only be to assist a few thousand farm families raise their crop yield at a high cost per beneficiary. This occurred, in part, because replicability, one of the primary project objectives, cannot be realized as envisioned by project planners. By replicating agricultural technologies developed by NERAD, it was hoped millions of Thais would indirectly benefit from the project. However, many of the same technologies have already been adopted on a massive scale in the Thai Government national programs. Consequently, the NERAD efforts are duplicative and will produce only marginal incremental benefits. The high cost per direct beneficiary and the unlikelihood of significant indirect benefits resulting from NERAD raises questions as to (1) the economic reasonableness of the Project and (2) whether it should be continued in its present form, redesigned, or terminated.

Recommendation No. 1

We recommend that USAID/Thailand determine whether the Northeast Rainfed Agricultural Development Project cost per beneficiary family can be reduced to an economically reasonable level or formally justify the continuation of the Project.

Recommendation No. 2

We recommend that if the decision is made to continue the Project, USAID/Thailand redesign or otherwise take action to scale it down by (a) excluding those agricultural technologies which are duplicated in national Thai Government programs and (b) retaining only those technologies which have a high probability for replication.

Recommendation No. 3

We recommend that USAID/Thailand deobligate AID funds which are in excess of remaining project requirements.

## Discussion

AID guidance provides for modification or redesign of projects. AID Handbook 3, Chapter 13 states that AID policy supports the adjustment of project design and implementation methods to maintain their relevance and effectiveness under changing conditions. Substantive modifications include changes in elements of the project design that are judged critical to its success; e.g., those which relate to project objectives. We believe NERAD meets this AID criteria for modification and redesign of projects.

During the late 1970s and early 1980s, several large integrated rural development projects having multiple components and implementing agencies were designed, approved and financed with AID funds. Because of their complexity and large size, many of these projects failed or had to be reduced in size to increase their chance of success. NERAD, which was designed during this period, had many of the same complexities (multiple components, multiple implementing agencies, etc.), and is also failing to achieve its primary objectives.

The NERAD Project Paper was so complex that it was characterized by several USAID and project implementing officials as a confusing document which lacked clearly stated objectives. One project official stated the Project Paper was more confusing than clarifying and made implementation planning a major undertaking.

It is not surprising that project officials had a negative impression of the NERAD Project Paper. NERAD was designed over a three-year period. The approved project was developed by 12 design team and 25 design committee members. The final result was a Project Paper that grew to three volumes replete with internal inconsistencies, masses of statistical information, and multiple and unclear goals and objectives. The USAID recognized that unclear project goals were causing problems and at the time of our audit, efforts were underway to prepare a clarification statement to be used in lieu of the Project Paper.

RTG complex budgeting procedures also hampered project implementation. The Project Paper anticipated that the project management staff would develop and control the budget for project supported activities. This was not possible, however, because of the RTG's budgeting and accounting practices. Each of the 8 RTG departments participating in NERAD developed and implemented its own budget. Consequently, project management staff did not have a unified budget, could not control what was budgeted, nor make needed changes during project implementation.

Our analysis of NERAD progress and other project reports showed that as presently being implemented, the primary accomplishment

of NERAD will only be to assist a few thousand families raise their crop yield at a very high cost.

The cost per beneficiary family has increased substantially during and since the project design phase of NERAD. The project was initially planned to directly benefit 30,000 farm families. During the Project design phase the intended direct beneficiaries were reduced to 10,000 families to make the Project more manageable. This equated to a cost of about \$1,570 per direct beneficiary family which was admittedly high.

As of March 1985, about 60 percent of the Project's activities and resources were planned for villages containing a total of about 1,000 farm families. This equates to a cost of about \$9,430 per family for these targeted villages. Thus, the cost has risen to many times the original estimate for these direct beneficiary families.

For the remaining 40 percent of project resources, the cost equates to about \$700 per direct beneficiary family. While this cost appears more reasonable, project officials were not able to show what benefits would be derived. Therefore, it is unknown if even these costs are reasonable.

USAID officials believe the cost per beneficiary family should be estimated on the basis of direct recipients plus the much larger number of families who might indirectly benefit from replication of improvements. However, as discussed below, the assumption of widespread replicability of project technologies is questionable.

USAID officials also noted that, while the cost per project beneficiary has been high, it will be reduced over the remainder of the project. They said the high initial costs were the result of emphasizing a limited number of villages during the first 2 years, as part of a farmer problem identification phase. USAID officials explained the lessons learned are now being tested in all 101 villages designated in the Project Paper and the costs per family will decrease with the greater number of beneficiaries. However, the extent of testing and the results have not been demonstrated to justify the potential benefits being claimed.

NERAD, which was approved in 1981, was in part designed to improve and replicate agricultural technologies to increase the productivity and income of poorer farmers in the Northeast region. This was to be done by the development and demonstration of a number of innovative agricultural activities which would then be adopted by farmers, local governments, or the RTG. The inception of the RTG Rural Poverty Area Program (RPAP) in 1982 significantly changed the environment in which NERAD operated.

About two thirds of project resources were devoted to improving agricultural technologies which have been adopted nationwide under the RPAP. Moreover, some of the NERAD technologies have been applied in the Northeast under regular MOAC programs. The nationwide and regular MOAC program technologies were adopted independently of NERAD during its start-up period and were not a result of NERAD. Since many of the same technologies which NERAD was trying to show should be replicated have been in fact replicated in national RTG and regular MOAC programs, they should not be retained in NERAD.

The RPAP was initiated in all 17 Northeast Thailand provinces, including the 4 NERAD provinces. We found that most of the NERAD activities were included in the National RPAP as well. The activities are:

Land Terracing	Weir Construction
Swamp Rehabilitation	Pond Construction
Common Lands Management	Compost Making
Household Poultry Improvement	Large Animal Program
Pasture Improvement	Fish Production
Weather Data	Soil Improvement

A consultant also reported in September 1982 that NERAD supported a wide range of activities, nearly all of which had been standard items in the existing program portfolios of the participating MOAC departments. The consultant noted that within budgeting constraints, these technologies would have been available to any tambon in much the same way with or without NERAD.

While there have been differences in the way NERAD and RTG national government agencies administered their programs, they used essentially the same technologies and are trying to achieve the same objectives. For example:

- A household poultry improvement program was conducted by the Livestock Department under both the RPAP and NERAD. This project provided training to farmers on disease control in chickens and provided inoculations to protect against some diseases. According to the Department coordinator, the technologies and training used have been the same for both programs. The coordinator knew of at least two villages where both NERAD and the RPAP budgeted for poultry improvement activities.
- A fish production program was conducted by the Fisheries Department under both NERAD and the RPAP using essentially the same fisheries' activities and plans. The Fisheries Department conducted its regular programs in NERAD tambons, but not in the same villages. In the Department coordinator's opinion the regular program was more cost effective because it used existing ponds while NERAD built new ones.

- Many of the regular programs of the Department of Land Development were also included in NERAD: land terracing, swamp rehabilitation, embankment structures, weather stations, and compost making. The Department coordinator said that these programs were planned, budgeted, and implemented under the regular program just as they were for NERAD villages. The difference was that NERAD provides more resources per village.

In summary, NERAD redesign planners should consider how the cost per beneficiary family can be reduced. Unless this cost can be significantly reduced, USAID management should terminate the project or formally justify why the project should be continued. Also in the NERAD redesign, those technologies which duplicate the national poverty program or MOAC regular programs should be deleted and only those technologies which have a high probability for replication should be retained.

#### Management Comments

In commenting on our preliminary audit findings, the USAID Director stated that a thorough review and analysis of NERAD had been conducted by the auditors. In its response to the draft report, USAID noted that it has been grappling with the same issues raised in the audit. Further, an evaluation team consisting of experienced agricultural and institutional specialists has been directed to explore all issues raised in the audit and others that may have an impact on project accomplishments. Therefore, the USAID concluded that it is premature, without the benefit of the evaluation, to scale down the scope of the Project.

#### Inspector General Comments

We agree that radical adjustments should not be made to NERAD without a careful review of the alternatives by qualified agricultural and institutional specialists. However, we believe the evaluation should emphasize reducing the cost per direct beneficiary. Unless this cost can be reduced, USAID management should formally justify why NERAD should be continued.

## 2. A Strategy For Institutionization Of Regional Coordination Should Be Developed

The Northeast Rainfed Agricultural Development (NERAD) Project papers states and project officials agreed that institutionalizing coordination improvements in the activities of Ministry Of Agriculture and Cooperatives (MOAC) departments is a major project objective. However, the Project has no strategy for implementing it. An elaborate departmental coordination system has been established within the Project itself. However, it is unlikely to be permanent because it is outside the regular Thai Government systems for program implementation. When the Project ends, the organizational structure and the systems established to improve coordination in all likelihood will cease to function. If institutionalization of regional coordination is to remain a project objective, USAID management must take concrete action to ensure its achievement.

### Recommendation No. 4

We recommend that USAID/Thailand develop a strategy and implement action plans to institutionalize improvements in coordination of Ministry Of Agriculture and Cooperatives activities achieved during project implementation.

### Discussion

The Project Paper states and NERAD officials agreed that institutionalizing MOAC department coordination at the regional level is a major project objective. For example, a recent project status report stated that project goals would not be reached simply by implementing subproject components. Big gains would result only by convincing the 8 MOAC departments to coordinate their efforts.

NERAD does not have a strategy or plans to ensure that improvements in coordination resulting from project activities will be institutionalized in the MOAC. Project and USAID officials believed that, if NERAD could demonstrate the benefits of improved coordination, the MOAC departments would automatically continue to coordinate. For instance, a draft project clarification statement noted that NERAD's future approach will be to get the MOAC departments to consider Project outputs and processes used to derive them. If the Departments conclude that these are useful and have wider application, then they believe management, technical, and operations workshops will be compelled to follow.

Coordination of NERAD activities carried out by the MOAC departments required an elaborate organizational structure and systems and, NERAD financed over 100 positions to administer it.

The Project Management Center, a part of the Northeast Regional Office of Agriculture and Cooperatives (NEROAC), has the responsibility for bringing about this coordination. Most of the Center's headquarters staff of about 40 were funded by NERAD. As a result, the Center is expected to be dissolved when the Project ends.

Other committees, subcommittees, and workshops were developed specifically to coordinate the activities of the Project. These organizational elements probably will also cease to function when NERAD ends.

The RTG's financial management system did not allow for integration of MOAC departments' funds. Therefore, a NERAD consultant had to develop a separate system for planning, budgeting, and authorizing expenditures of funds for project activities. When NERAD terminates, this financial management system will cease to exist.

There are also several institutional constraints which make it difficult for MOAC departments to coordinate their activities. These constraints probably will remain after the project ends and adversely affect the institutionalization of improved coordination of MOAC activities. They are:

- NEROAC is essentially an administrative support center for MOAC departments. It has no operational authority over the departments.
- The MOAC departments are basically autonomous. Their policies, operational direction and budgets are controlled centrally.
- The MOAC departments are generally organized to conduct their activities at the national, provincial and district levels, not at the regional level.
- NERAD officials believed that NEROAC would require additional resources and staff to coordinate regular programs of the MOAC departments. At the time of our audit, NEROAC had over 40 vacant, authorized positions which, a project official stated, could not be filled because of budget restrictions.

In summary, improvements achieved in coordination during NERAD implementation are unlikely to endure because the organizational structure and systems to continue such improvements will not function after the project terminates. Further, there are other major institutional constraints to NERAD achieving its objective of making lasting improvement in coordination of MOAC activities. These constraints raise the question whether this project

objective is achievable or realistic. In any event, a more direct approach should be taken by NERAD officials if institutionalizing improved coordination is to remain a project objective. NERAD managers should develop a strategy and implement plans to ensure that improvements in coordination of MOAC activities achieved during NERAD implementation continue after the Project terminates.

#### Management Comments

While the USAID did not dispute the facts contained in the audit report, it did not share our understanding of the role of the NEROAC and its mandate to coordinate MOAC activities. However, the USAID did not explain its difference of opinion. The USAID also said a strategy for coordinating MOAC activities does exist, but the strategy was not explained to us, nor shown to be institutionalized. Further, the USAID stated the evaluation team might spend some time exploring ways and means in which NERAD might assist in strengthening and institutionalizing NEROAC's coordination roles.

#### Inspector General Comments

In our view, the project objective of institutionalizing improved coordination processes resulting from the NERAD may not be achievable even under the best of conditions because of the current complex MOAC organization and budgeting procedures. As the AID Administrator stated in November 1984, "projects dealing with complex organizational structures and complex procedures generate failure and reduce the access of intended beneficiaries to planned benefits". We believe that NERAD typifies such conditions. If the USAID decides to retain institutionalization of improved coordination as a project objective, then a clearly stated strategy and specific implementing plans are absolutely required for it to have any chance of success.

### 3. Data On Replicability Of Project Agricultural Technologies Should Be Collected And Analyzed

The primary objective of the project was to improve farmer income. However, Northeast Rainfed Agricultural Development project (NERAD) officials do not know whether the agricultural technologies the project supports will increase the income of farmers because no system has been implemented for measuring the results. Unless NERAD can demonstrate that a technology will increase the farmers' income, the technology probably will not be replicated. Thus, a primary goal of the Project will not be achieved. The cost effectiveness of project technologies has not been analyzed because the responsible Ministry Of Agriculture and Cooperatives (MOAC) office has concentrated on and used project funds to develop a farmer record keeping system which was of marginal use to the Project.

#### Recommendation No. 5

We recommend that USAID/Thailand take action to ensure that the Ministry Of Agriculture and Cooperatives, Office of Agricultural Economics adequately carries out its project responsibility to make cost/benefit studies of project agricultural technologies.

#### Discussion

The Project Paper stated that the primary objective of the Project was to increase the income of low income farmers in Northeast Thailand. The Project Paper noted that in order for the Project's agricultural technologies to be replicable, the benefit-to-cost ratio of the Project's interventions should provide adequate incentive for the farmer to adopt them.

Collection and analysis of data for determining the costs/benefits of NERAD technologies was assigned to the MOAC Office of Agricultural Economics. However, that Office's major effort, requiring almost all the funds provided by NERAD, has been to collect detailed daily records on the activities of 240 farmers. About 3,000 record books were collected per year, each over 30 pages long. Reconciling and tabulating these took considerable time and there was little time left for other NERAD evaluations.

Project records indicated that this farm record data would eventually be used to develop optimal plans for five farm sizes. However, the farm plans were not completed at the time of our audit and project officials believed they have little or no utility for NERAD.

In summary, cost/benefit data is necessary to determine which NERAD technologies are likely to improve farm income and are replicable within the project area and eventually throughout Northeast Thailand. We believe that the Office of Agricultural

Economics should give higher priority to studies of NERAD-funded technologies. If for some reason, the Office is not willing to redirect its efforts to NERAD activities, an alternative solution should be found to meet this important project requirement.

#### Management Comments

USAID commented that since the completion of the audit fieldwork, the Office of Agricultural Economics provided additional staff to collect and analyze data on NERAD technologies. The USAID noted, however, the level of staffing assigned for this endeavor may still be insufficient to handle project data collection and analyses needed. The evaluation team was requested to take a close look at this problem and make specific recommendations for USAID and RTG consideration.

#### 4. An Improved Management Information System Is Needed

AID regulations require the USAID to assure project plans set forth quantifiable goals and objectives and milestones for their achievement. Further, these regulations also require that a management information and monitoring system be established to compare progress to plans. Our review showed, however, that neither the project plans nor the Northeast Rainfed Agricultural Development (NERAD) Project management information system provided such information because USAID management did not require it. As a result, the USAID was unable to determine whether project activities were being implemented as planned, funds were being expended properly or project objectives were being or will be achieved.

#### Recommendation No. 6

We recommend that USAID/Thailand require Northeast Rainfed Agricultural Development Project managers to establish a management information system which assists in project management and meets AID's standards for project monitoring.

#### Discussion

AID Handbook 3, chapter 11 sets forth USAID project managers' responsibilities for monitoring projects. It specifically requires that progress be compared to plans to alert management to potential implementation problems and requires timely gathering of information on inputs, outputs and action critical to project success. In order to carry out this responsibility, a project monitoring system is necessary which includes a project plan and progress reporting system in sufficient detail to specify quantifiable goals, objectives and milestones. Chapter 12 further specifies that monitoring efforts should be concerned not only with whether certain events are occurring as planned, but also with the continued likelihood that the project will achieve its purpose.

NERAD had implementation plans in the form of a Project Paper and annual work plans. However, the Project Paper did not set forth specific goals with a timetable for completion. The objectives in the Project Paper were very general. For instance, the basic purpose of the Project was described as raising the income level of farmers in the Northeast. No timetable was established for doing this and no methodology was specified for determining when this would be accomplished. While determining specific objectives and milestones is not easy, it must be done, otherwise managers may discover too late that they will never know whether the project objectives are being or can be achieved.

The annual plans were quite specific. They showed activities planned to be conducted each year. They were, nevertheless,

inadequate in that they did not relate planned activities to the overall success of the Project. Also, actual implementation of most activities was delegated to individual MOAC departments. NERAD did not determine on a formal basis whether the departments carried out their planned activities or whether they achieved their intended results. Some departments did submit reports of their NERAD activities, but project officials told us that the data was too voluminous to sort and compile.

Subsequently a monitoring team was formed at NERAD to deal with this problem. They collected information on planned versus actual implementation of some project-funded activities. However, the data collection was not systematic and the reports did not assess project progress towards achieving its objectives.

The NERAD office submitted quarterly progress reports which generally indicated activities and sometimes accomplishments and problems. But these progress reports were not related to plans nor did they indicate progress towards achieving project goals. We could not find any project report which used objective, verifiable indicators which showed progress towards goals. This was a significant gap in NERAD's management information system.

Mission officials stated that the Project had a monitoring system which included information on planned versus actual activities on a quarterly basis, but that continuing adjustments would be required to make the system more effective. Despite repeated inquiry during our review, we were not provided any reports which compared actual to planned project activities.

The Mission hired a consultant to strengthen NERAD's management information system. In January 1985 the consultant made a number of observations and recommendations that were consistent with our findings.

The project's management information system did not provide adequate data to determine whether the project activities were being implemented as planned, funds were being expended properly and in accordance with plans, or project objectives were being or would be achieved. Such information was required by AID regulations and is required for all U.S. Government progress and projects. USAID should require the project management staff to develop and implement a management information system which assists in project management and meets AID's standards for project monitoring. However, considering our conclusion that the Project should be redesigned the information system should not be developed until the decision has been made to continue the Project and it has been redesigned and its objectives firmly established.

### Management Comments

The USAID noted an extensive monitoring and evaluation plan was submitted to USAID in compliance with a project condition precedent. The USAID believed the plan was consistent with AID Handbook 3, Chapter 11 requirements. However, the plan was not followed by Thai project officials. Further, the USAID stated a financial management information system has been established which tracks planned versus actual project activities, status of funds expended, etc.. However, as explained by USAID, this system can be used to identify potential problem areas, but it does not gather information on project outputs. USAID also stated that an internal study was completed which suggested ways a NERAD management information system could be developed.

### Inspector General Comments

The internal study mentioned by the USAID basically agrees with our conclusion that NERAD has been in great need of an effective management information system for monitoring and managing project activities. More specifically, the study stated,

(NERAD) "reports lack continuity, focus, consistency and analysis. Technological data and information is quite fragmented and personalized. Information must become a priority and receive adequate resources. Guidelines should be developed for the departments for regular reporting."

This study also contained numerous suggestions on how an effective management information system could be developed and implemented. We believe that if these suggestions are carried out, the intent of the audit recommendation requiring the establishment of an effective NERAD management information system will have been met.

## B. Compliance And Internal Control

Most NERAD expenditures were made by 8 Ministry Of Agriculture And Cooperatives (MOAC) departments. Each department had its own budgeting and accounting system and all records were in Thai. The USAID has not evaluated the Thai Government system and identified this as a high risk area in their 1984 Internal Control Vulnerability Assessment. Therefore, there is no assurance that the internal controls of the departments were adequate to ensure AID funds were spent for intended purposes. USAID/Thailand contracted a private accounting firm to review the financial management systems of the MOAC departments. The survey had not begun at the time of our audit. According to the statement of work, the contractor was asked to:

1. Hold initial discussions with MOAC concerning survey work to be performed.
2. Review responsibilities and inter-relationships of principal departments within MOAC in regard to administration and implementation of USAID projects.
3. Study and evaluate accounting systems and internal control procedures of MOAC departments as they relate to project costs.
4. Test accounting systems and controls by verifying financial reports sent to USAID for reimbursement.
5. Prepare a report which describes MOAC's project administration accounting and internal control systems and includes results of the survey and recommendations on the need for a fullscale audit review.

Because of the USAID's initiatives we did not review the internal controls of these systems.

USAID's regular system of financial control was used for the in-country costs of the Project's technical assistance team, including their travel and housing costs. We reviewed a sample of the vouchers submitted to the USAID for these costs and found that adequate internal controls had been applied. We did not test contract salaries and overhead costs because these were covered under a University of Kentucky contract and were the audit responsibility of the U.S. Department of Health and Human Services.

AUDIT OF  
THE NORTHEAST RAINFED AGRICULTURAL  
DEVELOPMENT PROJECT IN THAILAND

PART III - EXHIBITS AND APPENDICES

## NERAD Project

Obligations As Of December 1984  
(in thousands)

<u>Technical Assistance &amp; Support Total</u>		<u>AID</u>		<u>MOAC</u>
		<u>Grant</u>	<u>Loan</u>	
Technical Assistance Team	\$2,563	\$2,563	-0-	-0-
Admin. Technical Support	2,237	62	\$795	\$1,380
Economic Studies	265	220	-0-	45
Evaluation & Monitoring	410	150	125	135
<b>Total</b>	<b>\$5,475</b>	<b>\$2,995</b>	<b>\$ 920</b>	<b>\$1,560</b>
<u>Technology Development</u>				
Soil/Land Modification	\$435	40	125	270
Demonstration/Research	280	265	-0-	15
Cropping Systems	1,030	-0-	910	120
Farming Systems	914	-0-	644	270
Water Resource Development	2,080	-0-	1,165	915
Extension Support	900	-0-	550	350
Other Agricultural Support	445	-0-	445	-0-
<b>Total</b>	<b>\$6,084</b>	<b>\$ 305</b>	<b>\$3,839</b>	<b>\$1,940</b>
Inflation	2,379	306	1,079	994
Contingencies	961	94	462	406
<b>Total NERAD Obligations</b>	<b>\$14,900 <sup>a/</sup></b> =====	<b>\$3,700</b> =====	<b>\$6,300</b> =====	<b>\$4,900</b> =====

<sup>a/</sup> Distribution figures for \$825,000 budgeted for the MOAC Department of Technical and Economic Cooperation were not available at the Project Office, however, most of this amount was for support of the Technical Assistance Team. Thus the total budget for NERAD was \$15,725,000.

## MISSION COMMENTS

APPENDIX 1  
Page 1  
of 5 pages

DATE: June 20, 1985

REPLY TO  
ATTN OF: Lee Twentyman, Acting Director, USAID/Thailand *Lee Twentyman*SUBJECT: Reply to the Draft Audit Report on the Northeast  
Rainfed Agricultural Development Project (493-0308)

TO: Mr. Leo L. LaMotte, RIG/A/Manila

REF.: (A) MANILA 17599  
(B) Audit Report No. 2-493-85-05 - DRAFT

The Mission is in receipt of the draft Audit Report No. 2-493-85-05 prepared by Mr. Aubrey F. Mills and others in the RIG/A/M. The report focuses on several issues, many issues which USAID/Thailand has been grappling with and is addressing in an evaluation which began on 10 June 1985. The evaluation scope of work which appears in the draft as "Appendix 1" is a Mission initiative to direct qualified individuals to provide technical insights and knowledge on project shortcomings. Moreover, as stated in our comments on the RAF's, we believe the tenor of the audit, i.e. to scale down the project, is premature without a thorough evaluation of its activities by a third party composed of experienced agricultural and institutional specialists. We expect the evaluation team to explore all issues raised in the scope of work and provide recommendations and/or alternative courses of actions for RTG and Mission consideration.

Our response to the draft audit is in two parts: Part 1 provides comments on the six (6) recommendations and Part 2 provides general comments on what the Mission believe to be errors in fact or omission.

Part 1 - Comments of Audit Recommendations:

Regarding Recommendation No. 1 of the draft audit report, the Mission feels that the issue of project cost per beneficiary is economically justified based on studies which show a high return for investments in agricultural research worldwide. The audit states "the primary accomplishment of NERAD will be to assist a few thousand farm families to raise their crop yields at the tremendous cost of over \$15 million". This is an exaggeration. It should be noted that the target population has not been reduced as stated on the second paragraph of page ii. The direct beneficiaries are estimated to be ten (10) thousand farm families with whom the project works closely. The audit makes no mention of the large numbers of potential indirect beneficiaries estimated to be over two (2) million farm families in the Northeast who stand to benefit from rainfed agricultural technologies being generated and/or refined by the project. The issue of doing proper cost/benefit economic analyses for each technology generated in the project will be carefully looked at by the evaluation team. As stated in our comments on the RAF's, attempts are being made to estimate the benefits of project technologies but have proven largely unsuccessful to date because of problems surfaced in the audit findings.

OPTIONAL FORM NO. 10  
(REV. 1-80)  
GSA FPMR (41 CFR) 101-11.6  
5010-114

The question of economic viability vis-a-vis whether the NERAD project methodology can be replicated by the RTG without foreign assistance is a relevant question which needs to be addressed by the evaluation team. Here again, the Mission believes this is a viable research approach, one which can assist the RTG develop benchmarks and/or parameters for country-wide development programs. In fact, an effort is currently being made by NERAD on this issue wherein the Directors of the Planning Divisions' of DOA and DOAE are accessing how methodologies being developed by NERAD might be replicated within and between the respective MOAC agencies. Much interest is being generated by this initiative as the issues raised by NERAD in this respect are directly addressed by the proposed context of the next (6th) Five Year Plan.

With regard to Recommendation No. 2, USAID/Thailand reserves its options to take corrective action until the evaluation has been completed and analyzed by the RTG and Mission. It would be premature on our part to redesign or otherwise take action to scale down the project without first having the benefit of an evaluation.

Recommendation No. 3 will be a consequence of Recommendation No. 2. If the Mission, based on the evaluation, elects to redesign the project and the redesign results in a reduction of project activities, the corresponding reduction in needed funds would be deobligated.

As for Recommendation No. 4, we believe there is an important lack of understanding by the auditors with regard to the role of the NEROAC and its mandate to coordinate MOAC activities. Consequently, it is our suggestion that the whole area of replication of regional coordination be looked at and appraised again by the auditors if at all possible. A more feasible alternative might be to have the evaluation team explore ways the NERAD project could be focused to strengthen and institutionalize NEROAC's coordinating role. The evaluation team's findings might well provide a response to this audit recommendation. Please refer to our general comments of para 2, page 18 noted below for additional information on this issue.

Recommendation No. 5 is recognized as a major problem. Since the completion of the audit, OAE has made available additional staff to collect data on technologies being tested and verified. The level may still be insufficient to handle project data and analyses needs. The evaluation team will take a close look at this problem and make specific recommendations for USAID and RTG consideration.

An extensive Monitoring and Evaluation Plan was submitted to USAID in compliance with a Project CP. The plan was consistent with AID Handbook 3, Chapter 11 requirements. USAID personnel assigned to the NERAD project may have been remiss in not requiring the Thai project management to follow it or something similar as proposed in Recommendation No. 6. However, it should be noted that an extensive Monitoring/Evaluation program (in Thai) was initiated and is currently used by project management. The program is based on annual implementation/financial plans, tracking planned vs. actual

project activities, status of funds expended, etc. The monitoring program provides a management tool to identify potential problems but does not gather information on project outputs. The current M/E plan could be adjusted to accommodate those short comings. Note: An internal MIS study is in preparation which will look at MOAC systems, NERAD project systems, NERAD/MOAC interface and other key areas in need of improvement. This study will be available to the project in late July.

## Part 2 - General Comments

Page -v-: The Mission's evaluation scope of work already included the general areas of concern raised by the audit. In turn, the Mission incorporated by reference the RAF's and draft Audit as an additional term of reference for the evaluation team.

Page 5, last paragraph: Development of rainfed agricultural technology is an objective of the project. As agricultural technologies are developed and extended through NERAD and other RTG programs, the process of refining, improving and adapting that technology continues. It is a continuous process of improving the technology through breeding, management improvements, changes in farmer practices, etc. The process of developing technology is dynamic, it does not stop the day you achieve an important change or improvement. The technologies being generated in the project will only be relevant in the short run. It is this process of technology development that will be replicated and institutionalized.

Page 7, paragraph 2: The Mission is well aware of its authority to make changes in the project design as needed. The question is what design changes should be made to make the project more effective in reaching stated objectives. The evaluation will help us sort out these important decisions and hopefully lay out alternative actions that can be considered by both the RTG and USAID/Thailand.

Page 8, para 1: The Mission understands the reasons for AID's decision to move away from complex project design and we believe it makes sense to do so. On the other hand, Thailand is unique in the development world in that the easy, single function, non-complex, easy projects have been done. The area where the Thais need help and where the USG is in the best position to assist is the area of improving the efficiency of government through coordination, program budgeting, etc.

Page 9, first paragraph: The Mission recognizes project clarity as a major problem. A clarification statement, one which articulates the project clearly, needs to be prepared and used in lieu of the present PP. Efforts are already underway to prepare such a document.

Page 10 last sentence, paragraph 2: The project got off to a slow start because the TA contract with the University of Kentucky was signed 11 months after the project agreement. This was caused, in large part, by an AID/W decision that all Title XII Land Grant University contracts would be

AID direct contracts. Up until that point, the last step of the contracting process, this contract was expected to have been a host country contract. AID/W's decision reversed the process and extended the contracting period several months. Once again, these changes caused by AID/W were largely responsible for the delays noted.

Page 11, last sentence, paragraph 2: Actual expenditures of 48% for the first two years of implementation is considered good within the Mission. Latest revised reports (June 4, 1985) indicate that actual commitments for year 3 (FY 84) are 80% of planned and that financial systems are now operating adequately.

Page 12 "Cost per Beneficiary": The cost per project beneficiary is high and will be reduced over the remainder of the project. This is caused by the fact that the very expensive infrastructure activities such as water resources development, fish ponds, land terracing, weir construction, etc., have been completed in each of the 9 project areas as part of the initial project activities as stated earlier in this memo. Moreover, the target population of NERAD has not been reduced. The Principal Villages were emphasized for 2 years as part of the farmer-problem identification phase of the cropping systems activities and the lessons learned are now being implemented in trials over all the project's tambons. The Project is still implementing all activities in the original 101 village designated in the PP.

Page 13 second paragraph: The fact that the Rural Poverty Alleviation Program (RPAP) has adopted NERAD agricultural technologies for extension is considered to be very positive by the Mission. The idea is to develop appropriate agricultural technology and extending it wherever and however possible. The notion that agricultural technologies should be deleted from the NERAD Project once they are disseminated in RTG programs is not helpful for reasons mentioned elsewhere in this memo. Appropriate agricultural technology generation is dynamic and continuous, requiring constant refinement.

Page 14, first paragraph 1st sentence. If, as stated in the audit, RTG National Programs are adopting the same technologies developed in NERAD, this is prima-facie evidence that NERAD technology is being replicated. This demonstrates project replicability and its ability to reduce cost per beneficiary family.

Page 14, second paragraph: Though RPAP is a national program working in 17 provinces in the Northeast, it has no research capability. In other words, it does not develop agricultural technology per se. It takes available agricultural technologies from research agencies and projects such as NERAD and extends them as part of their on-going programs. RPAP does not go through the continuous process of improving the technology as does NERAD and other research agencies within the Ministry of Agriculture and Cooperatives. Another major function of NERAD is to refine component technologies in order to better integrate them at the farm or village level rather than merely extend them as unrelated components as in the RPAP.

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Page 15, paragraph 2: The examples given on pages 15-16 are essentially correct in that both NERAD and RPAP are extending similar programs, i.e. livestock improvement, fish production, land terracing, compost making, etc. Once again, the major difference is that in NERAD these activities are coordinated as part of an overall tambon development plan and that the technologies are looked at in a continuous farming systems research process, one which allows for adaptations based on new knowledge and environmental changes.

Page 18, para one: The Northeast Regional Office of Agriculture & Cooperatives' (NEROAC) explicit role is to coordinate agricultural projects and programs. NEROAC currently coordinates 11 agricultural projects, 9 of which are solely funded by the RTG. This coordination is usually accomplished at the provincial and district offices rather than the regional level because few departments have regional offices (NEROAC is only housed at the Regional level). NEROAC facilitates the coordination with departmental offices whether they happen to be at the tambon, district, or province levels. Moreover, it should be noted that there is a coordination strategy, but it is not clearly articulated, nor institutionalized at the level of Permanent Secretary, for implementation by all Regional Offices of Agriculture and Cooperatives. Some of NERAD's coordination improvements are already being replicated in an EEC project which was recently approved for implementation by the RTG and managed by NEROAC. The evaluation team might spend some time exploring ways and means in which the NERAD Project might assist in strengthening and institutionalizing NEROAC's coordination role.

List Of Recommendations

	<u>Page</u>
<u>Recommendation No. 1</u>	
We recommend that USAID/Thailand determine whether the Northeast Rainfed Agricultural Development Project cost per beneficiary family can be reduced to an economically reasonable level or formally justify the continuation of the project.	3
<u>Recommendation No. 2</u>	
We recommend that if the decision is made to continue the project, USAID/Thailand redesign or otherwise take action to scale it down by (a) excluding those agricultural technologies which are duplicated in national Thai Government programs and (b) retaining only those technologies which have a high probability for replication.	3
<u>Recommendation No. 3</u>	
We recommend that USAID/Thailand deobligate AID funds which are in excess to remaining project requirements.	3
<u>Recommendation No. 4</u>	
We recommend that USAID/Thailand develop a strategy and implement action plans to institutionalize improvements in coordination of Ministry Of Agriculture and Cooperatives activities achieved during project implementation.	8
<u>Recommendation No. 5</u>	
We recommend that USAID/Thailand take action to ensure that the Ministry Of Agriculture and Cooperatives, Office of Agricultural Economics adequately carries out its project responsibility to make cost/benefit studies of project agricultural technologies.	11
<u>Recommendation No. 6</u>	
We recommend that USAID/Thailand require Northeast Rainfed Agricultural Development project managers to establish a management information system which assists in Project management and meets AID's standards for project monitoring.	13

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