PDCAF 502

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT IDENTIFICATION DOCUMENT FACESHEET (PID)

1. TRANSACTION CODE: A = Add, C = Change, D = Delete — [A] Revision No. ____ | DOCUMENT CODE: 1

2. COUNTRY/ENTITY: Thailand

3. PROJECT NUMBER: 493-0337

4. BUREAU/OFFICE: A. Symbol | B. Code: USAID/Bangkok | 493

5. PROJECT TITLE *(maximum 40 characters)*: Agricultural Technology Transfer

6. ESTIMATED FY OF AUTHORIZATION/OBLIGATION/COMPLETION

A. Initial FY: 84

B. Final FY: 86

C. PACD: 89

7. ESTIMATED COSTS ($000 OR EQUIVALENT, $1 =)

FUNDING SOURCE		LIFE OF PROJECT
A. AID		
B. Other U.S.	1.	5,000
	2.	
C. Host Country		1,700
D. Other Donor(s)		
TOTAL		6,700

8. PROPOSED BUDGET AID FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE 1. Grant	C. PRIMARY TECH. CODE 2. Loan	D. 1ST FY 84 1. Grant	D. 1ST FY 84 2. Loan	E. LIFE OF PROJECT 1. Grant	E. LIFE OF PROJECT 2. Loan
(1) FN	183		011		5,000		5,000
(2)							
(3)							
(4)							
TOTALS					5,000		5,000

9. SECONDARY TECHNICAL CODES *(maximum 6 codes of 3 positions each)*

10. SECONDARY PURPOSE CODE

11. SPECIAL CONCERNS CODES *(maximum 7 codes of 4 positions each)*

A. Code	Tech						
B. Amount	5,000						

12. PROJECT PURPOSE *(maximum 480 characters)*

To accelerate the MOAC's capacity to introduce and manage modern agricultural technology needed to increase yields, production and farm income.

13. RESOURCES REQUIRED FOR PROJECT DEVELOPMENT

Staff: Mission Direct Hire 2 mm

RTG MOAC 3 mm

Funds

14. ORIGINATING OFFICE CLEARANCE

Signature: Robert Halligan

Title: Robert Halligan
Director, USAID/Thailand

Date Signed: MM 08 DD 31 YY 83

15. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION: MM 09 DD 07 YY 83

16. PROJECT DOCUMENT ACTION TAKEN

[ ] S = Suspended; A = Approved; D = Disapproved; CA = Conditionally Approved; DD = Decision Deferred

17. COMMENTS

18. ACTION APPROVED BY

Signature

Title

19. ACTION REFERENCE

20. ACTION DATE: MM DD YY

AID 1330-2 (8-79)

Revised 8/31/83

AGRICULTURAL TECHNOLOGY TRANSFER PROJECT

I. SUMMARY AND RECOMMENDATION

This $5.0 million Agricultural Technology Transfer Loan Project will provide technical assistance, skills and managerial training and selected equipment to the Ministry of Agriculture and Cooperatives (MOAC) to accelerate its capacity to introduce and manage modern agricultural technology needed to increase yields, production and farm income. It will be complementary to the RTG's major research and extension efforts, including other donors. It is designed to give the MOAC the resources it needs which are not now being met by donor projects and to enable the MOAC to respond quickly to urgent needs as they arise. It will capitalize on A.I.D.'s unique ability to facilitate the transfer of scientific and technological knowledge appropriate to the demands of Thailand in the decade ahead.

It is recommended that APAC approve the PID and authorize the USAID to proceed directly with the preparation and finalization of the Project Paper. It is further recomended that the Director, USAID/Thailand be given authority to authorize the Project pursuant to existing congruent delegations of authority.

II. PROJECT DESCRIPTION

A. Background

As a result of discussions between Prime Minister Prem Tinsulanonda and President Ronald Reagan during the North-South Dialog at Cancun, Mexico, a United States Presidential Agricultural Mission was sent to Thailand in May, 1982.

The ensuing report of the Presidential Agricultural Mission has been well received by the Royal Thai Government (RTG), particularly by those agencies most directly concerned, and also by the Thai agribusiness community.

The Presidential Mission's purpose was to bring together high level United States and Thai experts to examine agricultural technology generation and diffusion as well as farm commodity marketing in Thailand with a view to recommending actions to sustain agricultural growth and development.

As one of only six countries in the world, and the only one in Asia which has consistently been a net food exporting country (agricultural commodity exports amount to two-thirds of total exports), Thailand was a logical selection for one of the first two Presidential Missions. The United States and Thailand are long-time friends. There is not only good will but agreement on solutions to many mutual agricultural trade problems as well. Thailand is a nation where things are happening. The on-going Fifth Five Year Development Plan stresses rural development, enthusiasm for change is high, the economy is expanding and leadership is strong.

This agricultural technology transfer project was conceived by the Royal Thai Government and USAID as a direct follow-up to the Presidential Mission report which identified a number of major constraints to continued agricultural growth, including: (a) the low levels of technology presently used by Thai farmers; (b) organizational deficiencies in the generation and diffusion of technology; (c) a shortage of skilled program and project managers in the Ministry of Agriculture and Cooperatives, and (d) uncertainties facing the agribusiness sector and the farmers.

While this project will not and cannot address all agricultural development problems, it will focus on some of the most important ones facing the introduction and management of modern technology appropriate to Thailand's agricultural resources, overall economic situation and potential markets.

B. Statement of Problem

Thailand's agricultural growth has been remarkable over the past two decades, increasing at an average annual rate of 5 percent compared to the world average of 2.5 percent. However, about 70 percent of total Thai agricultural growth is attributable to opening up new land; 20 percent is related to government infrastructure investments, particularly irrigation works; while only 10 percent can be attributed to introduction of new technology. Moreover, in recent years the agricultural growth rate has dropped below 2 percent. The area remaining to be opened for annual cropping is dwindling and soil erosion has become a serious national problem. Average yields of most crops are well below world and regional averages.

Thus, Thailand is at an agricultural development crossroads. To maintain Thailand's share of the world market while meeting an increasing domestic demand will necessitate increased efficiencies and a shift from the present relatively low level agricultural technology to a much higher level in the short and medium run. This requirement places severe pressure on the institutions responsible for setting farm policy and identifying and adapting higher levels of technology, as well as for meeting the increasing demand for capable trained managers to interpret policies and carry out programs and projects to modernize agriculture.

The Ministry of Agriculture and Cooperatives' (MOAC) pool of capable experienced program and project managers/administrators is grossly insufficient to accommodate new RTG policies to introduce modern technology, to improve interagency coordination and to decentralize management of development activities to the provincial and district levels. This problem is accentuated by the ever increasing numbers of development projects carried out by MOAC agencies. There are currently over 135 foreign donor assisted on-going projects in addition to regular MOAC development program activities under the Ministry's auspices.

Thailand's stated policy is to devote main government development efforts to designated rural poverty areas while relying heavily on the private sector to extend new technology to the non-poverty rural areas. Effecting this goal in agriculture will require continuous RTG efforts to coordinate with the private sector to identify constraints to private sector development activities and acceptable solutions to them, if available. To date private sector efforts, in addition to the marketing of agricultural products, have essentially been focused on production inputs and vertically integrated poultry and swine enterprises with small farmers as the primary production units. One joint-venture company, for example, has had marked success working closely with contract farmers to produce tobacco and more recently hybrid tomato seed for export to the USA. The private sector now dominates the production and sale of higher yielding corn seed and works closely with the Seed Production Division of the Agricultural Extension Department. However, in spite of these successful examples of private sector collaboration, there is much more which can and must be done.

This agricultural technology transfer project will provide opportunity for the MOAC to work even more closely with private enterprise towards technology generation and diffusion but perhaps more importantly will provide a focal point to permit the MOAC to examine and make recommendations on how best to alleviate existing constraints to production and marketing. This will be effected through the Sub-Committee on Public-Private Sector Agricultural Development, chaired by the Permanent Secretary of MOAC, under the Prime Minister's Joint Public-Private Sector Committee on National Development. Private sector suggestions for project activities will be passed by the Permanent Secretary to the Project Executive Committee for action. The Project Executive Committee will also contain private sector representation.

C. Project Purpose

To accelerate the MOAC's capacity to introduce and manage modern agricultural technology needed to increase yields, production and farm income.

D. Project Strategy and Activities

The RTG has given the MOAC sole responsibility for the government role in agriculture, fishery and forestry research and extension, including the determination of restraints to production and farm level marketing as well as private sector development in agriculture. This project will help the MOAC to improve its performance of these functions by providing technical assistance, skills and managerial training and selected special equipment not being met by existing projects. It is complementary to the RTG's major research and extension efforts, including those supported by other donors, and to actions being fostered by the market place and the private sector. It is designed to give the MOAC the resources it needs to fill gaps not now being met by donor projects and to enable the MOAC to respond quickly to urgent needs as they arise.

1. Technology Transfer

The U.S. Presidential Mission report stressed the identification, acquisition, adaptation and transfer of existing and new agricultural technology applicable to Thailand's situation. The report also stressed upgrading the technical skills of MOAC research scientists and extension service subject matter specialists, including the need to develop additional scientists and specialists.

Technology transfer will be conducted primarily along commodity lines, including crops, both annual and perennial, fish and livestock. But, project activities along scientific or professional disciplinary lines will also be pursued.

This project will effect technology transfer by two primary means: (a) use of expert consultants and (b) technological and managerial skills training.

a. Expert Consultants

United States and Thai expert consultants, primarily short term but with follow-up visits as required, will be employed to help identify, define, and resolve specific technological problems and production constraints; to provide specific technological skills training for selected Thai research scientists and extension subject matter specialists; to assist in putting together state-of-the art packages for transfer to farmers; and, to examine agricultural policies and programs with a view to recommending changes in technologies and private sector involvement which would result in higher yields, higher levels of production, and enhanced farm income.

b. Formal and Informal Skills Training

The project will provide opportunities for technological skills and other specialized training in universities and other institutions, on-the-job training in the private sector or public sector, and attendance at seminars and workshops for selected MOAC research scientists and extension subject matter specialists. Private Sector attendance at such Seminars will be encouraged. Such training will be primarily short term and may be in-country or overseas in the United States or elsewhere. Training may be centered on a specific agricultural commodity, for example, sorghum, or it may focus on new technology in a specific scientific discipline such as entomology or plant breeding.

c. Full-Time Advisor to MOAC

Project implementation will be supported by one full time Agricultural Technology Advisor in the Office of the Permanent

Secretary. The advisor will assist the MOAC in managing the introduction of modern technology into Thai agriculture. He or she will assist in identifying specific requirements for project assistance, evaluating MOAC agency requests, identifying constraints, preparing terms of reference, locating qualified individuals and/or institutions for consultancies, and providing liaison between the MOAC and USAID. He or she will work closely with the Project Secretariat. The fulltime advisor may be employed directly by the MOAC or by the selected backstop organization, whichever will meet MOAC and project implementation requirements most efficiently. This will be determined during the project paper preparation.

Examples of the types of program interventions requiring either or both technical assistance and training include:

(1) Crop and livestock situation and outlook reporting based on improved forecasting using landsat and weather satellite data and area frame sampling; this will build on activities of the Agricultural Planning Project. The project might finance expenses for 2-3 individuals from OAE to work in the USA directly with the chief USDA corn crop forecaster during one crop season. (Thailand's satellite data is available in the USA). Offshore skills training for DOA scientists in developing growth coefficients of soil moisture, etc. can also be arranged.

(2) Strengthening MOAC linkages with the major international agricultural research and development institutions and U.S.A. research organizations by, for example, arranging visits by Thai research scientists to such organizations and centers.

(3) Commodity specific technology transfer through exchange of visits and information with USA experts and other sources; examination and resolution of specific constraints or problems connected with research and extension of specific commodities, cropping and/or farming systems.

(4) Cost of production studies for specific commodities and/or systems to pin point constraints to production, to improve efficiency of utilization of factors of production, and to identify technology needs.

(5) Reduction of post-harvest losses for principal crops--both annual and perennial; may include introduction of both new methods in handling and storage, as well as machinery for threshing and milling.

(6) Agriculture policy and problem analysis, including farm price policy analysis for selected commodities as related to adoption of technology and cash inputs.

(7) Assistance in packaging specific commodity and livestock production research results into viable recommendations to be transferred to farmers.

(8) Farm gate marketing studies to improve the efficiency of the existing marketing system and to find ways to keep farmers better informed on both present and expected future prices and markets.

An illustrative example of a combined technical assistance and training activity might be in the general area of sorghum production as below:

Thailand is an exporter of sorghum, mostly to Saudi Arabia and other Middle East countries. The export market could be expanded if production were increased and more of the most marketable variety (red sorghum) were grown. Thailand has several capable sorghum investigators both in the laboratory (breeding) and in the field (agronomy and soils). Nevertheless, sorghum production has presently reached a plateau of less than 300,000 metric tons per annum.

Following are some interventions which could be taken under this project to increase sorghum yields and production.

(1) USA sorghum research agronomist visits Thailand and examines along with Thai specialists the state of the art in Thailand and recommends sending a Thai sorghum breeder and a Thai agronomist (soils) to a USA institution for 3-6 months refresher course.

(2) USA research scientist helps Thai researchers prepare summary of latest Thai research and offshore results and recommends areas requiring further multidisciplinary study.

(3) USA sorghum extension specialist visits Thailand and, with Thai sorghum extension subject matter specialists in cooperation with USA and Thai sorghum research scientists, helps put together a package of recommendations for Thai farmers interested in growing sorghum.

(4) US extension specialist gives sorghum short course for Thai subject matter specialists and recommends that two or three Thai specialists make a 4-week observation tour to USA with several third country intermediate stops.

(5) At some future date either or both USA research and extension specialists return to Thailand to review progress and help determine if any revisions are needed in the Thai research and/or extension programs for sorghum.

2. Managerial Skills Improvement

The U.S. Presidential Mission as well as the International Agricultural Development Service (IADS), respectively, in their recent reports have identified the absolute necessity for the MOAC to upgrade research and extension administrative management. The need to improve program and project management has also been pointed out by the World Bank, the Asian Development Bank and other institutions.

The lack of sufficient capable field project, research institute and extension program managers is considered as one of the most limiting factors facing Thailand as it moves from traditional farming practices to the higher level of technology required to meet production growth goals in the future.

As an illustration, a specific MOAC expressed need is for intensive management training of the Directors and Deputy Directors of the six newly designated DOA Research Institutes. Two types of training are recommended by IADS: (a) short term study tours up to 3 months at a USDA/ARS experiment station, at an international research center, or at a national center in a third country, and (b) in-country research management seminars or workshops.

In addition, the IADS team recommended training for extension subject matter specialists, including organized tours to the USA and Asian countries to study the roles of similar specialists elsewhere and follow-up seminars to adapt their findings to conditions in Thailand.

The project will also include development of a MOAC capability to organize and operate administrative management training for all MOAC agencies. This would necessitate the specialized training of a small nucleus of professionals to enable them to determine management training needs, design courses, train trainers, and operate a Ministry training program.

Similarly, selected key individuals within the Office of the Permanent Secretary and MOAC agencies who require refresher courses or who have demonstrated potential for advancement to higher level managerial assignments will be provided short term off-shore or in-country training in managerial skills.

3. Public-Private Sector Relations

The U.S. Presidential Mission emphasized that the uncertainties caused by conflicting public policies and the ad hoc nature of government agricultural commodity policies represent primary constraints to the agri-business sector and to the increased commercialization and income earning opportunites of small farmers. Although there is little doubt that the government has accepted the private sector as a full partner in agricultural development, there is still much to be accomplished.

This project will provide a vehicle to strengthen the relations between the public-private sector by means of the following illustrative activities:

a. Employment of joint private and public sector expert consultant teams to analyze apparent constraints to farm production and marketing as well as investment and suggest possible RTG corrective actions.

b. Preparation of pre-feasibility assessments of potential agribusiness investment opportunities based upon technological advances, which may then be referred to the private sector for in-depth study.

c. Provision for voluntary private sector participation in agricultural technology seminars and workshops sponsored under the project.

d. Speeding up the appraisal of private sector proposals to the Board of Investment which require MOAC clearance and/or endorsement.

e. Provision for representation by the private sector on the Project Executive Committee.

f. Maintenance of a continuous dialog between the MOAC and the agribusiness sector through the Sub-Committee on Public-Private Sector Agricultural Development, chaired by the Permanent Secretary of Agriculture, especially with regard to the development of agriculture in the non-poverty areas of the nation, to ensure linkage between public-private sector programs, and to provide a means for consideration of private sector concerns.

g. Provision to cooperate with and follow-up on recommendations of the Joint US/Thai Agricultural Consultative Committee (JACC).

4. Procurement of Scientific and Operations Equipment

The project will finance the purchase of needed equipment to support MOAC operations, primarily those of the Office of the Permanent Secretary, when the absence of such equipment is a perceived constraint to operating efficiency of the MOAC or achieving the project purpose. This will include the following kinds of equipment: word processing equipment and software in Thai and English; field research equipment and machines for production and post-harvest technology transfer; training aids, including audio-visual equipment; laboratory equipment; and innovative agricultural machinery which can be tested jointly by the MOAC and private sector.

E. End of Project Conditions

1. Introduction to Thailand and diffusion to farmers of appropriate modern technology required to increase crop and livestock production through higher yields on small farms.

2. Increased understanding by MOAC scientists and extension specialists of latest techniques in research and extension and modern farming, which can be adapted to fit Thai natural resources, climate, culture and economic policies.

3. Improved MOAC staff performance in planning, implementing and administering agricultural development policies and projects.

4. Closer linkages and more organized communication between public and private sectors including greater awareness and understanding of government actions required to address constraints to production and marketing.

F. Implementation Procedures

The project paper will specify criteria for the use of project funds, as well as the requirement that fairly well defined activities (implementation plan) be established for each year. The activities under the project will be managed by the MOAC, subject only to USAID approval of annual activity plans, monitoring, evaluation, and audit. Although most activities will be identified in the annual plan, a contingency item will be used to enable the MOAC to respond to activities not specifically foreseen or identified but mutually agreed upon during the year. Also, USAID and the MOAC will be able to mutually agree to modify plans as needed by agreeing to shift line item budgets.

It is anticipated that the MOAC will use project funds to contract with an organization such as the USDA, the Public Administration Service (PAS) or a university to provide backstopping in the United States. The services will include locating both expert consultants and institutions capable of providing specialized technical assistance and training.

An Executive Committee, chaired by the Permanent Secretary, MOAC, and composed of the Deputy Permanent Secretaries plus heads of MOAC agencies and representatives from the private sector selected by the Permanent Secretary, will approve activities under the project for the RTG. The Secretary of the Executive Committee will be the Director of the Projects Division of MOAC and his staff will act as the Secretariat. From submissions solicited by the Committee from the several MOAC agencies and from private sector suggestions, the Secretariat will draft the annual implementation plan for approval by the MOAC and USAID. The Committee will make determinations based on approved selection criteria (to be developed more fully during the design phase) that will include a caveat on compatibility with overall project objectives, consistency with RTG and MOAC and agency priorities, non-duplication of effort, and development impact.

Use of project funds will not necessarily be restricted to MOAC agencies alone, as long as a proposed activity promises to support agricultural growth and development in Thailand, is consistent with the project activities selection criteria, and is approved by the MOAC Executive Committee.

G. Initial Environmental Examination

Inasmuch as the project is concerned primarily with transfer of skills and training and none of the project activities will have a direct impact on the environment, a negative environmental impact determination is recommended. (See Annex A).

III. PROGRAM FACTORS

A. Conformity with RTG and MOAC Strategy

Thailand's economy is based primarily on agriculture with about 75 per cent of the labor force engaged in farming or agriculture related occupations.

The thrust of the RTG's present five year plan is to increase agricultural production efficiency to meet basic human domestic needs and maintain Thailand's share of world farm commodity markets. The sixth economic and social development plan, being developed, will stress the welfare of small landholders beyond the basic needs concept, thus increasing the necessity for stepped-up technology transfer.

The key point is that Thai agriculture is in a transitional state. Up until now there has been limited demand for modern technology because Thai farmers have been able to produce exportable surpluses using traditional farming practices and low levels of cash inputs. In the future, however, a switch to modern technology will be necessary to meet production

goals. This project will assist in providing the strategic information base necessary for the RTG to make the required policy changes and institutional adjustments to permit an orderly transition to higher levels of technology, higher yields, increased production, and higher farm income.

B. Relationship to USAID Strategy

Thailand's continued progress in economic growth points to the country's ascendance to middle income status and sets the stage for a very different application of future AID resources. The new Country Development Strategy Statement (CDSS), currently being prepared, will reflect the fact that Thailand's requirements for external assistance are changing. Unlike its South Asian neighbors, Thailand possesses an impressive rural infrastructure and the institutional framework to channel substantial amounts of domestic and foreign aid funds to address identified development constraints. In terms of targeted development programs and the mobilization of domestic-external resources sufficient to make a quantitative difference in national development, many of Thailand's most important needs are being addressed. At this stage in the country's development the extent to which these needs will be met is increasingly a function of how well available resources are managed and utilized. Thus future national development and AID's role both take on new and different qualitative dimensions.

In this context, the Agricultural Technology Transfer project represents an important step towards facilitating the technological modernization of Thailand. The institutional base for technology transfer is expected to broaden significantly through capacity building within the MOAC and the establishment of long term technological exchange between the United States and Thailand. The forthcoming CDSS will emphasize even more strongly USAID's strategy to facilitate the transfer of scientific and technological knowledge that will be appropriate to the demands of Thailand in the decade ahead.

The proposed project is complementary to but not duplicative of work being done under the Mission's ongoing Agricultural Planning Project (493-0317) and Private Sector in Development Project (493-0329). The former activity is designed to strengthen the capabilities of MOAC's Office of Agricultural Economics (OAE) to carry out policy, advisory, problem identification and analysis, planning, data management and integrated project management functions. The OAE, once strengthened, should be in a better position to assist the Ministry to more effectively absorb, plan and administer managerial, scientific and technological knowledge provided under the proposed project. The latter activity includes a small amount of funding to study constraints to private sector expansion and other issues which come before the Joint Public Private Sector Committee. The proposed loan will supplement such funding and facilitate implementation of recommendations arising under such studies. Structurally, this project is similar to the Mission's Emerging Problems of Development (EPD) Project (493-0309) which provides a pool of funding resources to meet a variety of identified technical assistance and training needs; e.g. environmental survey for development of the Eastern Seaboard, feasibility study of a Thai commodity futures market, or improvements in tax administration. While the two projects are almost identical in their flexibility to address Thai requests for assistance, they differ in that Agricultural Technology Transfer is targeted to one specific development priority, namely agriculture, while EPD may be used to address a broad spectrum of development issues.

C. Other Donors

As earlier pointed out, there are over 135 foreign donor assisted projects in agriculture, including very large active projects financed by the IBRD, IFAD and the ADB that support the overall MOAC research and extension programs. The Japanese Government is providing support for the Department of Livestock Development research and extension activities and the EEC has plans for an aid program aimed at crop diversification on land

presently planted to cassava and also include the development of new rubber and coconut palm plantations in the Eastern region, cashew nuts and other crops.

These projects are primarily aimed at improving the systems of local technology generation and diffusion. The larger projects are financing considerable construction of facilities and staff housing, as well as procurement of machines, vehicles and equipment. They are more directly concerned with building up the physical capability of the MOAC to get the job done and less with the direct transfer of technology or upgrading of technical and managerial skills of Thai scientists and extension subject matter specialists. Monitoring and evaluation reports point out the shortage of trained scientists, research managers, and extension subject matter specialists, which will be the principal concern of the proposed AID project.

D. Economic and Financial Considerations

The application of standard cost-benefit ratio or internal rate of return formulae to determine the economic and financial rates of return to this project under various conditions is not possible, since benefits to the ultimate beneficiaries, Thai farmers and the overall Thai economy, are indirect. The project is justified on the grounds that agricultural as well as other types of research and introduction of new technologies undertaken worldwide indicates high returns. There is every reason to believe similar results are attainable in Thailand. The cost-effectiveness of any new individual technology considered for introduction into Thailand through the project can be tested prior to any efforts to introduce the technology. Cost-effectiveness analysis of alternatives to be considered and efforts to minimize costs will be conducted during the project design.

The RTG will have only minimal additional recurrent cost obligations after the project is complete. These will be in connection with in-house training in administrative management in the MOAC and are already in their own budgetary planning system.

B Beneficiaries and Social Considerations

Beneficiaries to be directly affected include selected scientific and professional staff of MOAC, with particular emphasis on the present and future senior scientists, subject matter specialists, and management cadre in the field. However, the intended ultimate beneficiaries will be Thai farm families and others in the rural areas who will make use of the improved and more accessible farm technology to increase their farm yields, production and income.

The planned project interventions are considered to be fully acceptable to the RTG, the agribusiness sector, and ultimately Thai farmers. Thai farmers and businessmen are quick to adopt modern technologies if they are cost-efficient. There are no religious or cultural barriers to the use of modern technology, only economic ones.

Several examples serve to illustrate the receptiveness of the Thai to the introduction of new technologies and their success therewith:

Thailand went from a mere footnote in the world sugar statistics in 1976 to become the fourth largest raw sugar exporter in 1977. This phenomenal production response of Thai farmers and traders to demand was repeated for cassava which has been used as a substitute for high priced domestic feed grain by the EEC animal feed industry. The Thai market response included switching from the export of rough chips to "soft" degradable pellets and later to "hard" pellets much more acceptable to the EEC market. Also, the machinery for cassava processing was either adopted directly from the West or developed and manufactured in Thailand. Cassava was the leading Thai export earner in 1981, exceeding rice export value slightly.

In the late 1960's USAID sponsored introduction of a modern corn processing, handling and storage system into Thailand at one of the main production areas, Saraburi. This was a major technological break-through,

since it was not feasible to shell a million tons of corn by hand, as had been done previously, or in small farm size shellers which were very inefficient and wasteful. The new technology, quickly adopted in Thailand, permitted the expansion of corn production and exports up to nearly 3 million tons. In recent years the USAID assisted MOAC Seed Production project stimulated the private sector to invest in the seed industry, particularly corn, for which the demand for higher yielding seed is growing each year.

IV. Project Management

A. RTG Management

The Office of the Permanent Secretary, MOAC, will be the implementing agency. Assisting this office will be an Executive Committee directly under the Permanent Secretary. The committee will be responsible for approving activities proposed under the several components of the project. Members of the committee will include the Deputy Permanent Secretaries and the Director-Generals and Secretary-Generals of MOAC. The Director of the Projects Division will be the Secretary of the Executive Committee. The private sector will also be represented on the Commmittee. In making decisions on proposals for special consultancies and overseas training, the Executive Committee will apply mutually agreed upon criteria to be jointly developed during the design stage of the project. The Secretariat for this project will be the staff of the Projects Division, Office of the Permanent Secretary.

Proposals may be initiated by the Permanent Secretary, the Executive Committee itself, by the several Departments and Offices of MOAC, by the project management staff (Secretariat), or suggested by the private sector.

B. USAID Management

A project officer will be assigned part-time to maintain a liaison relationship with the Secretary of the Executive Committee. USAID's role will be to approve annual implementation plans and thereafter its involvement will be limited to essentially monitoring and evaluation.

C. Illustrative Budget Estimates

This five year project is estimated to require 6.7 million dollars. The USG contribution will be a 5 million dollar loan through the RTG Ministry of Finance. A tentative budget is provided below.

Activity	USAID Loan ($000)	RTG Funds ($000)	Total ($000)
Technical Assistance	$2,000	$ 700	$2,700
Specialized Training	1,700	300	2,000
Operational Support for Project	-	500	500
Commodities	600	150	750
Evaluation	100	50	150
Contingency	600	0	600
Total	$5,000	$1,700	$6,700

V. Project Issues

This project addresses issues identified in AID guidance on institutional development and technology transfer and is consistent with the Asia Bureau's Strategic Plan as well as the RTG Fifth Five Year Plan and the expected strategy of the RTG Sixth Plan.

Among the issues to be resolved and other steps to be taken during project analysis and design for inclusion in the Project Paper are:

1. Definition of priority agricultural subsectors and commodities for technological change efforts;

2. Establishment of criteria to be used by the Executive Committee to approve the use of project funds;

3. Identification of priority target groups and MOAC Departments for technological skills and management training.

4. Definition of MOAC project management (Secretariat) requirements to assure the quick response capacity critical to this project.

5. Preparation of a general 5 year plan and a more specific first year Implementation Plan.

VI. Project Preparation Strategy

The expertise required for developing and writing a PP is available in Thailand. Detailed analysis will be done by the MOAC staff, primarily from the Permanent Secretary's Office, with some assistance from the Mission. USAID offices involved in the PP preparation will be O/ARD and O/PES supported by O/PRO and O/FIN. It is anticipated that two man-months will be required to prepare the PP. No PDS funds are required. MOAC and Mission resources will be used.

The proposed project development schedule is:

August 31, 1983	Submit PID to AID/W
October 1, 1983	PID approval

October 15, 1983	Design team begins work
December 31, 1983	Draft PP completed; submitted for NESDB review
March 1, 1984	USAID/RTG Review completed; PP final draft
March 15, 1984	PP approved by USAID Director
May 1, 1983	Project Loan Agreement signed by RTG and USAID

ANNEX A

INITIAL ENVIRONMENTAL EXAMINATION

Project Location: Thailand

Project Title: Agricultural Technology Transfer (ATT)

Funding: $5 million loan

Life of Project: 5 years

IEE Drafted by: Robert A. Ralston, MOAC R. A. Ralston

Reviewed by: John Neave, USAID John Neave

Environmental Action Recommendation: Negative Determination

Concurrence: Mission Director Robert Halligan

Bureau Environmental Officer's Decision:

APPROVED _____

DISAPPROVED _____

Date _____

I. Examination of Nature, Scope and Magnitude of Environmental Impacts

A. Project Description

The ATT project is planned to accelerate the level of agricultural technology transfer in Thailand through technical assistance, technical skills training, managerial skills training and strengthening linkages between the public sector and the agribusiness community. The idea is to not only introduce new technology but to develop the capability of selected Ministry of Agriculture scientific and professional staff to identify and/or develop, introduce, diffuse and manage the agricultural technology needed by Thailand to increase yields, production and farm income. The goal is to sustain Thailand's high (+5%) average twenty-year annual agricultural growth rate needed to meet domestic food, feed, and fiber requirements while maintaining or increasing Thailand's share of the world market.

Almost all project funds will be used to hire expert consultants and finance on and off shore training; procurement of commodities will be confined to office and laboratory equipment plus a few farm machines for testing under Thai conditions.

B. Identification and Evaluation of Environmental Impacts

None of the ATT project activities will have direct impact on the environment as this project is concerned primarily with skills and managerial training and controlled experimentation and demonstration plots exclusively for research and extension and confined to small areas, analyses, studies, workshops and seminars.

However, all terms of reference for training programs for scientists and professionals where appropriate will include environmental guidelines.

Individual expert consultants will be instructed in their terms of reference to advise on potential adverse environmental impacts of their particular specialty (technology).

The documentation being prepared for the Northeast Rainfed Agricultural Development Project on pesticides and water structures will become part of the ATT project PP.

II. Recommendation for Environmental Action

Based on the lack of direct environmental impact identified above, it is recommended that a formal assessment not be required but that environmental impact guidelines be included in all seminars, workshops, individual training programs and technical consultations in all project activities for all involved MOAC staff at all levels in the organization.

Therefore, a negative environmental impact determination is recommended.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Life of Project: 5 years
From FY 1984 to FY 1989
Total U.S. Funding $5 million
Date Prepared: August 31, 1983

Project Title and Number: Agricultural Technology Transfer (493-0337)

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTION
Program or Sector Goal: The broader objective to which this project contributes: To sustain agricultural growth and development in Thailand.	**Measures of Goal Achievement:** Agricultural growth is reattained and maintained at about 5%.	Agricultural statistics collected and analyzed each year by MOAC/OAE.	**Assumptions for Achieving Goal Targets:** - RTG and MOAC to continue to make agriculture a key growth sector and make decisions supporting this policy. - MOAC can and will transfer appropriate technology to farmers through the newly reorganized National Agricultural Research Program which stresses a multidisciplinary approach; and the Extension Program which now includes 28,000 village extension agents, subject matter specialists to train the village agents, and a train and visit method of extending technology.
Project Purpose: To accelerate the MOAC's capacity to introduce and manage modern agricultural technology needed to increase yields, production and farm income.	**Conditions that will indicate purpose has been achieved: End of Project Status** - Introduction to Thailand and diffusion of appropriate modern technology to increase production on small farms. - Increased understanding by MOAC scientists and subject matter specialists of latest research and extension techniques adaptable to Thailand's natural resources, climate, and economy. - Improved MOAC professional staff performance in planning, implementing and managing agricultural development policies, programs and projects. - Closer linkage between public and private sector activities including greater awareness of RTG actions required to alleviate constraints to production and faster MOAC review of BOI proposals.	Project reports/ evaluations	**Assumptions for Achieving Purpose:** - Inputs will be sufficient to make a difference in the MOAC. - Other donors continue their major support for research and extension.
Outputs: - Technology packages for selected crops and other farm enterprises. - Significant improvement in quantity and quality of overall MOAC research and extension program. - Pre-feasibility studies for private sector. - Greater emphasis on and use made of private sector in MOAC strategies.	**Magnitude of Outputs:** - Minimum of * new technologies introduced or developed. - * technical committee meetings per year. - * reorganizations to improve/simplify procedures. - * revised staff reports. - * studies completed or underway. - * Public/Private Sub-Committee meetings per year, with * jointly agreed recommendations implemented. *Numbers to be determined in PP	- Statistics on imported machines, equipment, MOAC agency reports, special surveys, BOI reports. - MOAC records and training agency reports, monitoring & evaluation reports of research and extension activities. - Records, survey of private sector commodity groups, Board of Trade	**Assumptions for Achieving Outputs:** MOAC to select best qualified staff for skills and managerial training and use technical assistance on problems that when solved will result in yield increases.

Inputs: Activity	USAID Loan ($000)	RTG Funds ($000)	Total ($000)	USAID and RTG records and reports	- Technical assistance available - Trainers & training facilities available - Matters of mutual concern exist and both public & private entities willing to discuss; private sector can and willing to contribute to training public sector and farmers - Commodities available for use when needed - Required manpower & funding available on a timely basis.
Technical Assistance	$2,000	$700	$2,700		
Specialized Training	1,700	300	2,000		
Operational Support for Project	-	500	500		
Commodities	600	150	750		
Evaluation	100	50	150		
Contingency	600	0	600	Annual budget allocations after FY 88	
Total	$5,000	$1,700	$6,700		

ANNEX B