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UNCLASSIFIED

UNITED STATES INTERNATIONAL DEVELOPMENT COOPERATION AGENCY  
AGENCY FOR INTERNATIONAL DEVELOPMENT  
WASHINGTON, D.C. 20523

PROJECT PAPER

THAILAND

AGRICULTURAL PLANNING PROJECT

493-0317

JULY 1980

UNCLASSIFIED

PROJECT DATA SHEET

1. TRANSACTION CODE

A = Add  
 C = Change  
 D = Delete

Amendment Number

DOCUMENT CODE

3

2. COUNTRY/ENTITY

Thailand

3. PROJECT NUMBER

493-0317

5. PROJECT TITLE (maximum 40 characters)

Agricultural Planning

4. BUREAU/OFFICE

Asia

04

6. PROJECT ASSISTANCE COMPLETION DATE (PACD)

MM DD YY  
 11 03 18 4

7. ESTIMATED DATE OF OBLIGATION  
 (Under 'B.' below, enter 1, 2, 3, or 4)

A. Initial FY 81

B. Quarter 1

C. Final FY 81

8. COSTS (\$000 OR EQUIVALENT \$) = 20

FIRST FY 80

LIFE OF PROJECT

A. FUNDING SOURCE	B. FX	C. L/C	D. Total	LIFE OF PROJECT		
				E. FX	F. L/C	G. Total
AID Appropriated Total	1,064		1,064	3,200		3,200
(Grant)	(1,064)	( )	(1,064)	(3,200)	( )	(3,200)
(Loan)	( )	( )	( )	( )	( )	( )
Other U.S. 1.						
Other U.S. 2.						
Host Country		412	412		1,012	1,012
Other Donor(s)						
<b>TOTALS</b>	<b>1,064</b>	<b>412</b>	<b>1,476</b>	<b>3,200</b>	<b>1,012</b>	<b>4,212</b>

9. SCHEDULE OF AID FUNDING (\$000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	C. PRIMARY TECH. CODE		D. OBLIGATIONS TO DATE		E. AMOUNT APPROVED THIS ACTION		F. LIFE OF PROJECT	
		1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan	1. Grant	2. Loan
(1) FN	189B	053		0	0	3,200		3,200	
(2)									
(3)									
(4)									
<b>TOTALS</b>				<b>0</b>	<b>0</b>	<b>3,200</b>		<b>3,200</b>	

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

11. SECONDARY PURPOSE CODES

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

A. Code

B. Amount

13. PROJECT PURPOSE (maximum 180 characters)

Strengthen the capabilities of the Office of Agricultural Economics to carry out policy advisory, planning, and project preparation functions.

14. SCHEDULED EVALUATIONS

Interim MM YY MM YY Final MM YY  
 09 82 10 84

15. SOURCE/ORIGIN OF GOODS AND SERVICES

000  941  Local  Other (Specify)

6. AMENDMENTS/NATURE OF CHANGE PROPOSED (This is page 1 of a \_\_\_\_\_ page PP Amendment)

17. APPROVED BY

Signature *Robert S. Queener*  
 Robert S. Queener  
 Title Acting Director

Date Signed MM DD YY  
 07 10 80

18. DATE DOCUMENT RECEIVED IN AID/W, OR FOR AID/W DOCUMENTS, DATE OF DISTRIBUTION

MM DD YY  
 07 10 80

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## LIST OF ABBREVIATIONS

DTEC	-	Department of Technical and Economic Cooperation
NESDB	-	National Economic and Social Development Board
BOB	-	Bureau of Budget
OAE	-	Office of Agricultural Economics
MOAC	-	Ministry of Agriculture and Cooperatives
NSO	-	National Statistics Office
NRC	-	National Research Council
ASF	-	Area Sampling Frame
NIDA	-	National Institute for Development Assistance
IBRD	-	International Bank for Reconstruction and Development
PAS	-	Public Administration Services
APP	-	Agricultural Planning Project
PP	-	Project Paper
ASEAN	-	Association of Southeast Asian Nations
LP	-	Linear Programming
I/O	-	Input-Output, interindustry analysis
CSC	-	Civil Service Commission
SAM	-	Social Accounting Matrix
USDA	-	United States Department of Agriculture
ESCS	-	Economics, Statistics and Cooperatives Services
PID	-	Project Identification Document
PIT	-	Project Identification Team
SAS	-	Statistical Analysis System

SPSS - Statistical Package for the Social Sciences

MOPH - Ministry of Public Health

OICD - Office of International Cooperation and Development

MA - Master of Arts or its equivalent level of training and/or experience

RTG - Royal Thai Government

FAO - Food and Agricultural Organization, United Nations

CDSS - Country Development Strategy Statement

USAID - United States Agency for International Development

USG - United States Government

TDY - Temporary Duty Assignment

TA - Technical Assistance

ASCS - Agriculture of Stabilization and Conservation Service, United States Department of Agriculture

DS/N - Development Services

RSSA - Reciprocal Services Support Agreement

B.E. - Buddhist Era

DAE - Division of Agricultural Economics, Ministry of Agriculture and Cooperatives

ISU - Iowa State University

AID/W - United States Agency for International Development Washington

AID/T - United States Agency for International Development Thailand

# AGRICULTURAL PLANNING PROJECT (APP)

## PROJECT PAPER

### I. PROJECT JUSTIFICATION

#### A. Background

In 1973, the USAID/Thailand, in cooperation with the Division of Agricultural Economics (DAE) of the RTG Ministry of Agriculture and Cooperatives (MOAC), initiated an agricultural sector analysis project (Agricultural Economics Project 493-180.4). Funded jointly by USAID/T and the RTG Department of Technical and Economic Cooperation (DTEC) for a two-year project period, it was subsequently extended another three years and was concluded in June 1978\*.

~~The project purpose was to develop within the DAE the capacity for agricultural sector analysis and policy planning. Project implementation involved a six-year\* cooperative research effort carried out by the DAE and the contractor--the Center for Agricultural and Rural Development of Iowa State University (ISU). Project strategy was centered on two objectives: the training of DAE professional staff in data collection and processing, statistical methods of analysis, computer programming, economic analysis and sector modeling; and the construction and application of large-scale national and regional models using linear programming, statistical and econometric techniques.~~

In 1978, a Project Evaluation Team led by Dr. George Tolley of the University of Chicago conducted a searching examination of the results of ISU efforts over the preceding five years and concluded that the project had succeeded in its mission of "establishing a high caliber operational capability for applying agricultural economic analysis to government policy problems in an action setting." They found the structure of the models to be sound, the results obtained reliable, and the information being used to assist policy-making by the RTG.

An additional year of technical assistance, funded by ISU independently of the terminated AID-funded contract, was concluded in July 1979.

In January 1979, the MOAC requested USAID/T to fund a follow-on contract with ISU to develop model based guidelines for rural development focusing on the need to give more explicit technical appraisal to income distributional and employment impacts on farmers and the rural sector. Investment, export targets and agricultural price policies were given as examples of RTG decision areas requiring this technical appraisal (See Annex C). Before action was taken on the request, the RTG enacted the Agricultural Economics Act of B.E. 2522 (in February, 1979), which transformed the DAE into the Office of Agricultural Economics (OAE) and substantially increased the OAE's responsibilities and authority. Under the Act, the OAE is responsible for agricultural planning, policy analysis, budget analysis, and project preparation (See Annex E) and serves as the Secretariat for a newly-constituted Committee on Agricultural Policy and Plans chaired by the Minister of Agriculture. In view of the expanded OAE role, the simple extension of the ISU contract to further elaborate sectoral models did not appear to be the most appropriate strategy. Accordingly, a Project Identification Team from Washington was invited to Bangkok in September 1979 to review the current status of the DAE/ISU project, assess the technical assistance needs of OAE, and recommend the most appropriate type of assistance in view of the substantially altered situation.

#### B. Problem Identification

The project being recommended by this PP is complementary to a series of recent project proposals initiated by USAID/T to assist the RTG to more effectively address serious national problems relating to:

- wide disparities of income levels and growth among regions: Project (493-0306)
- persistence of widespread poverty among farmers and rural dwellers in the North and Northeast regions; Projects (493-0283 and 493-0289)
- disparities in food consumption related to poverty and problems related to subsistence production and food marketing
- lagging development of agricultural and related enterprises in these regions; Projects (493-0308; 493-0272 and 493-0280)

- continuing high levels of unemployment and underemployment among the rural people in these regions. Projects (493-0306 and 493-0309)

A number of widely-recognized institutional constraints and other factors have hampered the performance of the MOAC departments in their attempts to address these problems. Among those relevant to this project are the following:

- lack of reliable and timely information on economic and social conditions in the target areas and how they affect consumption patterns of the people;
- incomplete understanding of the economic processes and functions in the agricultural and related sectors;
- lack of adequate numbers of trained staff to design and appraise feasible development projects;
- independence of operating departments and their resistance to coordinated planning and execution of multi-faceted programs and projects; and
- lack of effective linkages between development plans, annual budgets and agency programs.

### C. Development Potential

At this time in Thailand's history, agricultural development has a strategically important role in narrowing income disparities and raising the level of living among the rural poor. The Royal Thai Government has placed high priority on program initiatives and resource allocations to re-focus public sector activities more directly on the disadvantaged regions. The Year of the Farmer was initiated in FY 1979, to focus national attention on agriculture and to increase income to farmers.

The new and potentially powerful role assigned to the OAE can be one of the most critical elements in determining the eventual success or failure of the Government's agricultural development strategy. The high level of professional competence in OAE and the evident commitment of OAE

leadership to furthering the RTG goals of reducing income disparities and raising levels of living among the rural poor provide strong assurance that technical assistance to strengthen and broaden OAE's institutional capability will directly support USAID's development objectives in Thailand.

The Project Identification Team cautioned against an expectation that success will be guaranteed by the APP under the existing conditions in Thailand. Experience in other countries (developed, as well as developing countries) provides ample evidence that the role being undertaken by OAE is not one that is easily established in the face of long-standing traditions and the inevitable bureaucratic resistance that will occur. However, similar AID-financed efforts such as evolved in Kenya and Peru suggest that the present conditions in Thailand may be more favorable to achieving success than elsewhere, particularly in view of:

- the present Government's strong political commitment to developing the North and Northeast regions;
- the Government's awareness of importance to national development of increasing food supplies and consumption of some population groups.
- the Government's demonstrated willingness to initiate and support organizational and procedural changes to deal more effectively with these development problems;
- the highly dedicated core of well-trained research staff in OAE;
- the strong personal commitment of OAE leadership and staff to fully exploit OAE's expanded role and authority in the interest of improving the status of the rural poor through agricultural development; and
- the OAE's willingness to acknowledge the need for the type of technical assistance covered by this project and its recognition that such assistance may well be the crucial factor determining its success.

Moreover, the impact of prior technical assistance to DAE on past and current performance of the organization is apparent. ~~For example the current five-year plan is the first one constructed with explicit consideration being given to the technical feasibility of projected targets for agricultural production and the changes needed in resource availability and production technology to achieve these goals. This plan's goals were related to results of one of 9 alternative development scenarios examined by OAE staff using the linear programming models developed with technical assistance under the ISU/OAE project. These analyses contributed to the Government's decision to focus on the North and Northeast in current programs. Past technical assistance to the statistics collecting effort in OAE and to economic modeling of commodity markets is contributing to the Secretary General's recommendations to the Government concerning current agricultural export targets as part of an effort to meet foreign exchange needs primarily to finance oil imports.~~

## II. PROJECT DESCRIPTION

### A. Project Design - Logical Framework Narrative

#### 1. Project Goal

~~The ultimate goal of the project is the development of agricultural policies and programs of continuing greater benefit to low income farm households. The project's focus on improving policy planning, project and budget review, coordination and monitoring should help to translate the MOAC's efforts in data collection, research, and analysis into effective policies and service programs for farmers.~~

#### 2. Project Purpose

The purpose of this Agricultural Planning Project (APP) then is to strengthen the capabilities of the OAE to carry out policy advisory, problem identification and analysis, planning, data management and integrated project preparation functions. The OAE, once strengthened, should be in a better position to assist the MOAC to more effectively plan and administer its resources for the benefit of low income rural households.

The institutional development purposes of the project will have been achieved if the following conditions exist at the end of the project:

- The capacity for effective planning and policy analysis management has been institutionalized within the OAE.
- A system of cooperation between OAE and MOAC line departments has been established for project identification, project preparation and budget analysis, resulting in an increasing number of well-prepared projects that have been approved and financed for project implementation.
- Significant level of effort within OAE in analysis, planning, reporting and project evaluation relating to policies/projects to benefit low-income farm households.
- The OAE system for collection and processing production, consumption, price and marketing estimates and socio-economic data relative to the rural sector has been improved.

### 3. Project Outputs

Specific outputs include:

- ✓ An organization planning process that projects staff growth in both quantitative and qualitative terms, in relationship to the expanding role of the OAE and the nature and frequency of demands by policy-level entities for OAE outputs.
- ✓ A decision calendar procedure institutionalized and implemented, and reports, studies, and staff papers prepared to supply reliable and timely information to the Committee on Agriculture Policy and Planning and other decision makers.
- ✓ Effective procedures for project development, project evaluation and budget review established within OAE with significantly increased skills among OAE staff in carrying out these functions.

- In-service training courses in project identification, project preparation and analysis and project monitoring and evaluation conducted and/or coordinated by the OAE.
- Application of sector models and analytical techniques to such policy concerns as recommendations for cropping systems/farming systems for rainfed agriculture in Northeast Thailand, appropriate pricing policies for agricultural inputs and farm products to stimulate production, interaction between on-farm enterprises and off-farm employment opportunities, etc.
- Eighty percent of the MOAC Department and OAE staff having responsibility for project preparation, review and evaluation are trained in improved methodologies.
- The ASF\* for the General Farm Survey for Agricultural production estimates expanded to all provinces as to obtain zone level estimation.

#### 4. Project Inputs

Technical assistance, training and commodities as detailed in Financial Plan.

#### B. Project Strategy

The need for the OAE to strengthen its policy analysis and project development capabilities has become imperative now that it is to function as the secretariat to the recently created Committee for Agricultural Policy and Planning. The OAE will also be expected to expand its efforts to provide MOAC and RTG policy makers with estimates of the likely effects of alternative policies and problems at different income levels and regions.

Specifically, OAE has the following responsibilities) under its expanded role:

- a. Policy formulation
- b. Project identification, development, integration and evaluation (monitoring).

\*Area Sampling Frame

- c. Data and information management and coordination of data bank computer retrieval and information
- d. Budget analysis and coordination
- e. Research on agricultural and rural development issues and problems:
  - Prices of agricultural inputs and products, including transportation and marketing
  - Production/consumption/price/income relationships
  - Rural employment and seasonal labor supply and demands
  - Socioeconomic factors related to income and its distribution; household characteristics, food consumption and nutritional patterns
  - Trade, marketable surplus, marketing margins.

The project will assist the OAE to strengthen its capabilities and improve performance in these functional areas through appropriate combinations of long-term technical advisors, short-term consultant work, training - both in-service and graduate-level studies overseas, and modest equipment procurement. Among the functional areas, policy analysis and project development and evaluation will receive major emphasis because they assure meaningful application of data and analysis to the problems of the farm population and they are the areas in which there is immediate need for improvement.

### C. Areas of Project Emphasis

The recent OAE reorganization requires that its staff rapidly adjust from a reactive pattern of policy response to a more active mode of anticipatory research and policy analysis which more fully supports current MOAC decision-making at all key levels. This includes policy decisions, program design decisions, project preparation and selection, annual budget and project decisions and five year planning activities. Each of the project's main components is designed to contribute to meeting this overall need. Assistance will be provided through three full-time positions funded over the full four years of the project and one full-time position for two years, as follows:

- a. Problem identification and project formulation, design and monitoring (6 person-years)
- b. Data methods improvement (4 person-years)
- c. Research and modeling efforts (4 person-years)

The resident advisors will assist the OAE staff in conceptualizing, designing and installing improved arrangements and procedures for development planning, project identification and preparation, and policy analysis. The principal objective of the APP is to help provide direction and focus to OAE's data collection, research and analytical activities relative to the on-going stream of policy and program decisions that are continuously being made, and will give highest priority to managing OAE resources to be directly supportive of the current needs of policy makers. This will involve the early identification of the nature and timing of the annual cycle of key decisions that must be made in order to determine and implement the policies and programs of the MOAC (e.g., price support decisions, project approval decisions, budget decisions, etc.). This identification will also specify the priorities for data and analysis and establish the time constraints for completing reports, studies, and staff papers required to supply relevant and timely information for decision makers, so that the supporting work of the OAE (and MOAC departments) can be more carefully planned and scheduled.

Whereas the PID identified a separate advisor for policy analysis, this is not a realistic project component. The advisor too easily becomes his own fount of knowledge, divorcing policy recommendations from their research and data base. Policy advice must be created with cognizance of the "risks" and broader implications which extend beyond the immediate needs of decision makers to maintain its integrity in the longer term. If the OAE system works properly, all the Divisions and the respective advisors will contribute to policy analysis and recommendations. Policy analysis in this framework is dependent upon a data and analysis procedure for each particular policy type question, issue, or problem. Therefore, a "policy advisor" is essentially without portfolio. Collectively, the technical assistance, through the OAE Divisions, will assist the Secretary-General on policy analysis and recommendations on development planning and counter cyclical responses.

Provision is also made for special short-term advisors (6-8 person-months per year) to supplement the resident advisor staff as needed. This contingency authorization would

also be available to exploit emerging opportunities and needs that cannot be fully foreseen at this stage of project development, as illustrated below:

- Socioeconomic data
- Consumption of agricultural products
- Land development and use
- Prices and marketing
- Trade
- Rural industry development

The size of the APP team and scope of the team's operations, including the use of highly qualified and experienced short-term advisors, indicate the need for a full-time resident administrative assistant to deal with logistical and related problems (travel arrangements, schedules, office space and facilities, living accommodations, communications, etc.). A Thai national is preferred and will be supplied as part of the RTG contribution to the APP.

A description of the scope and nature of each of the project components follows:

1. Problem Identification and Project Formulation Design and Monitoring

The need to expand the number of MOAC staff capable of identifying and preparing feasible and cost-effective projects is a high priority area for the National Economic and Social Development Board (NESDB), Budget Bureau and MOAC. The general shortage of these skills among MOAC staff at present appears to be one of the major constraints on its efforts to implement its policy objectives. MOAC staff need to be trained in problem identification, project analysis and preparation, and project evaluation. Personnel from divisions of planning and budget analysis in the various Departments -- Forestry, Fisheries, Irrigation, Livestock and Land Development, for example -- need training in project identification and preparation skills as well as the OAE staff. There is also need for expanded capability to understand current policy concerns and undertake analyses required for both annual and five-year planning functions within the MOAC. At a minimum, this will require careful evaluation and understanding of operating procedures in NESDB and both current and potential budget analysis procedures employed by the Budget Bureau. Of particular concern is the need to create within OAE a

capability to define priorities for MOAC projects for annual budget management in order to support high priority national interests and also to comply with OAE's statutory role in budget review consistent with the supra-ministry responsibilities of NESDB and the Budget Bureau.

Of OAE's technical assistance needs, the most immediate and critical need is on problem identification, project analysis and budget review. This project component will directly assist in strengthening the capacities of the Implementation Plan and Evaluation Divisions.

This technical assistance component will provide MOAC with 6 person-years of resident advisory expertise. These advisors will contribute to upgrading OAE capability in this general problem area. In addition to the policy and budget review function, other activities would include the development and testing of several in-service courses and on-the-job skill development in project identification, project analysis and preparation, project evaluation, and project monitoring. The advisors could draw on and possibly extend the scope of current activities of the Public Administration Services efforts at the Budget Bureau to analyze and restructure MOAC budget procedures.

For this component, training programs of the World Bank and the Office of International Cooperation and Development of USDA could help provide core curriculum and assist in training some of the potential trainers in project analysis and preparation. Similar assistance should be available from AID/Washington in project and program evaluation techniques. The resident advisors and short-term consultants would also help to develop skills in project preparation through team efforts on identification, appraisal, and design of projects to be funded by the MOAC and foreign donor agencies. These teams would be composed of consultants, OAE personnel, and representatives of the appropriate line departments.

The project advisors will be assigned to the OAE and work directly out of the Secretary-General's Office. They will also work directly with the Directors and staff of the various OAE Divisions. Furthermore, these advisors will work through the Implementation and Project Evaluation Divisions to assist other MOAC departments to organize and carry out their own project preparation, budget analysis, and evaluation functions more effectively.

The APP proposes to:

- a. Work directly with the Implementation and Evaluation Divisions and indirectly with the Agricultural Statistics Division

b. develop informal training courses for division staffs

c. send up to 100 division staff personnel for MA level training at appropriate Thai institutions

d. over the period of the project, and preferably even before the project, roughly four (4) persons at a time should be sent to USAID-ESG and U.S. Bureau of the Census to receive in-depth training on U.S. project and budget analysis procedures

e. bringing in such TDY specialists as are deemed essential to supplement the direct assistance program.

2.2. Agricultural Research and Modeling Efforts

The research capacity of OAA is generally exceeds that of comparable institutions in less developed countries. The substantial number of trained staff members and the relatively sophisticated analytical techniques being used by OAA staff members indicate a relatively high level of technical and analytical capabilities.

Until recently, OAA had concentrated its research efforts on developing a comprehensive framework for analyzing agricultural production and resource allocation at the national, regional and agro-economic zone levels. RTO policies makers are now indicating more interest in the distributional impact of their actions by commodity and by region and province as well as by subgroups of households. To respond to these demands, OAA has embarked upon a program to draw national level data and to broaden the data base to extend coverage to socioeconomic data and data needed to analyze price stabilization and agricultural export policies. Although OAA recognizes the need to analyze the relationship of agricultural programs to food consumption patterns, it has only limited capability for such research at this time.

In contrast, its capability for formal economic analysis of agricultural policies is much more developed. The section which follows will assess OAA's capability to develop and use a specified set of formal economic models designed for agricultural policy analysis in Thailand. Capability is assessed as it exists now and as it may be expected to develop over the course of the APP project.

BEST AVAILABLE DOCUMENT

a. Linear Programming Models of Agricultural Production in Thailand and its Regions

The principal set of formal models used by OAE continues to be the LP models of agricultural production in Thailand and its sub-regions.\* These have been developed over the past several years, and they are particularly well suited to assessing effects of changes in the agricultural resource base, agricultural production technology, and input and output prices facing the agricultural sector. Solutions are capable of estimating output of most major crops and livestock, land use, use of variable inputs, including labor demands by month, payment of farm workers and variable production costs as they may be affected by the changes noted above. Such estimates can be determined nationally or regionally to the level of Thailand agro-economic zones. Solutions may be readily interpreted in terms of farm income for the Kingdom and for all sub-regions.

Experience of the OAE staff in building and using these models for routine analyses is extensive. At the same time, typical training levels for staff involved in this work are not high by U.S. standards. Both in this work and in other phases of OAE's operations, the participation of staff trained at the Ph.D. level in research positions is a relatively recent phenomenon. The scheduled return to OAE of a number of additional Ph.D.s by the end of 1980 will further add to OAE's ability to develop these models and to do more sophisticated and effective analysis.

Data gathering systems and working arrangements to provide for updating and improving coefficient estimates seem to be in place and beginning to function. However, substantial further development is needed. While data for this purpose are drawn from a number of places, a country-wide farm record keeping project under the Research and Project Evaluation Divisions is being used increasingly as a major data source. This project presently enrolls over 400 farmers in 14 agro-economic zones, and expansion to all 19 zones is planned. These data are well suited to provide the means for estimating some of the coefficients that have been most difficult to estimate and most critical in earlier modeling efforts, especially seasonal land and labor use by different cropping activities.

\* Sub-regions defined for these analyses include the four major regions: North, Northeast, Central and South; and the nineteen agro-economic zones.

Overall, this phase of research and modeling work seems to be on a sound footing, and its contribution to policy analysis should increase. While further development of this work will probably not be a major objective of technical assistance, some TA needs are expected to arise, and the existing and prospective core of capabilities should provide a firm base for advanced work.

b. Statistical Modeling of Thailand's Agricultural Commodity Markets

OAE's policy activities frequently require estimates of the impacts of various forms of government intervention in agricultural commodity markets. These activities include, but are not limited to, analyses of agricultural price policies. It appears that research of this kind could make a significant contribution to the current efforts being made to forecast and promote agricultural exports. In general, work of this kind requires statistical estimation of consistently specified supply, domestic demand, stockholding and foreign trade relationships. Neither the completed nor planned linear programming models lend themselves to this purpose satisfactorily, though they do permit assessment of the supply effects of price policy.

OAE's work of this kind is currently concentrated in the Demand Analysis Branch of the Research Division, though some work is also done in other parts of the organization. The Demand Analysis Branch is presently one of the smallest branches in the Research Division, having only 6 professional staff, and only one with an MS degree. This same staff also has responsibilities for other work described later in this section. A limited program of work in statistical modeling of agricultural markets was begun as a part of the ISU-DAE Agricultural Sector Analysis Project, and this continues as a low priority effort. In view of the apparent usefulness of this kind of work, greater emphasis on staff development should be included as a part of this APP. The nature of this work is such that it does not afford opportunities for usefully employing large numbers of staff with low or intermediate level training, so that level of training and quality, not size of staff is the real problem. However, it is likely that further efforts to build a small nucleus of staff who are well trained could make significant contributions to OAE's research in this area. This consideration is further described in later sections where future staff development plans and designations for participant training are discussed in detail.

Data availability and reliability have been major problems limiting progress in statistical modeling of agricultural markets. Time series data are required for most of the more productive approaches, and those which exist are often not fully reliable. However, past experience in the Demand Analysis Branch has demonstrated that careful analysis and judicious use of available data can produce useful results. Probably some of the more useful work envisioned involves modeling the determination of both farm-level and wholesale or retail prices concurrently (i.e. modeling marketing margins) and modeling seasonal demand and prices at the farm level.

OAE's efforts in consumption analysis are barely visible at this point, though some efforts have been made by Demand Analysis Branch Staff. This is a logical association. It is not now apparent whether the RTG expects future leadership in this area to come from MOAC or the Ministry of Public Health (MOPH). However, even if MOPH does become the lead agency, close coordination with OAE will be necessary on data and other matters so that consumption analysis skills will be required in OAE. Such skills will also contribute to OAE's demand analysis work. For these reasons, the APP should assist with the beginning of a staff development program in this area.

c. Modeling the Economic Linkages Between Farm and Non-Farm Sectors

A third modeling and research effort which is just getting underway in OAE seeks to link linear programming models of agricultural production with processes representing economic activity in the non-farm sector. Current expectation is that the latter activities will utilize an input-output model. These models would be developed at the province (changwat) level with the primary objective to assess the non-farm economic impacts of agricultural policy decisions targeted principally at the agricultural sector. It is also intended that the research provide estimates of earnings by different classes of agents in the public and private sector (i.e., by subsets of households and subsets of government accounts). The development work thus far has been a joint effort involving staff from the Development Policy and Planning Division and the Agro-Industries Branch of the Research Division.

Though present staffing is adequate only to support a pilot program, there would seem to be no particular problem in meeting staff requirements with acceptable skill levels in view of the similarities between this work and linear programming efforts that OAE has conducted successfully in the past. In addition to job time requirements, certain aspects of this work present new problems in model formulation and training which may require selected TA inputs.

Overall, it appears that OAE can develop an effective capability for modeling which captures the major farm/non-farm interactions, and that 3 to 6 months of technical assistance over the 4 years of the APP effort will give desired results. This assistance should be related to provincial input-output table estimation and to linkage of the input-output and linear programming models. Serious consideration should be given to providing TDY assistance to the input-output estimation effort on an interim basis prior to formal start of the APP.

In addition to the above TDY assistance, the program should include one full-time socioeconomic analyst who will assist OAE's efforts in statistical modeling of agricultural markets, especially for purposes of price analysis. The analyst will work most closely with the Demand Analysis Branch, but will provide assistance to other branches as well. Part of the task of this person will be to assist with the analysis of cross-section data on food consumption as this work evolves in OAE.

### 3. Data Methods Improvement

Since 1974, OAE's Center for Agricultural Statistics has been conducting an annual General Farm Survey using a two stage sampling design with a listing of villages (maintained by Department of Agricultural Extension). The village list is arranged by estimated number of households. A systematic simple random sample of villages is selected from this list, in effect providing a kind of self-weighted sample. After selecting the sample village, a listing of households is made and a 16 percent sample of households is selected. The number of sample households in 1973-74 was 19,234 and in the 77/78 survey year, the sample was 46,256 representing an over all sampling rate of about 1 percent (See Annex I).

The General Farm Survey obtains data by household for the following items:

- (1) Land holdings, tenure and use;
- (2) Crop area planted, harvested and production, use or nonuse of fertilizer plus tree crops and tree crop production;
- (3) Livestock numbers by type including poultry by type, age groups, sex, use, sales and price per head.

In addition to the General Farm Survey, a 25 percent subsample of sample households was selected for an Economic Survey. The questionnaire included the following items:

- (1) Amount of fertilizer used by crop and the cost;
- (2) Pesticides and herbicides used by crop and cost;
- (3) Farm family labor data;
- (4) Debt and repayment data (cash and in-kind);
- (5) Land purchases, farm supplies and equipment, repairs, construction and medical care used;
- (6) Credit by type of use;
- (7) Credit requirements cash and/or in-kind;
- (8) Source and type of credit used;
- (9) Cash income from crops and livestock, animal labor, renting of equipment, interest received and other cash income;
- (10) Kinds of farm equipment;
- (11) Type of operating cash expenditures;
- (12) Fixed expenditures by type;
- (13) Beginning inventory and value of farm production items (fertilizer, pesticides etc.) as of April 1;
- (14) Value of unsold crops and unused livestock feed;
- (15) Value of crops consumed on farm;
- (16) Value of ending inventory as of 31 March, farm implements, crop storage facilities, unused fertilizer and pesticides, stored crops and livestock and livestock feed (unused);

- (17) Various household cash expenditure items;
- (18) Family income by types; and
- (19) Farm production disposition by crop and livestock items.

Both surveys identify a very large set of data to be obtained in many cases from poorly informed farmers.

The accuracy and reliability of most of the data that are tabulated are marginal and should be improved. However, the General Farm Survey's sample size provides data that are of reasonable quality at the national level for major crops such as rice, cassava and maize. For rice the CV\* is about 5 percent, for corn 10 percent, and 10 to 20 percent for sugar cane, cassava and kenaf. Despite large sampling and response errors, the Economic Survey has been an important source for the linear programming models and has contributed significantly to other analytical work of OAE. From 1974 through 1978, both the General Farm and Economic Surveys have been conducted each year; however, because of budget constraints, beginning with crop year 1979, these surveys will be conducted only every second year and are to cover both crop years for some items. This procedure raises serious doubts as to validity of future survey results when compared to current data because of probable memory bias and response errors.

The Center also conducts a "special survey" annually covering 17 major crops and 6 livestock items. (There are two surveys each for rice, maize and soybeans.) The official published planted area and production statistics are derived from these "special surveys" for the 17 major crops. Prior to publication, estimates are reviewed by an OAE senior staff committee 15 to 20 days after survey completion, then submitted to the Secretary-General for his review.

a. Actions to Improve Estimates

In an effort to provide more reliable estimates for the General Farm Survey, based on results of a pilot survey in 1974, an Area Sampling Frame (ASF) using a probability sample of land segments, has been constructed in 10 central and northeast provinces. The village sampling frame continues to be used for the remaining 62 provinces. To date the Economic Survey has not utilized the ASF even though it is well suited for such surveys.

\* Coefficient of variation

Area frame sampling is a labor-intensive technique to scientifically select the smallest sample of fields (the area frame) possible to obtain representative crop information for national decision making such as export-import planning. The collection of data takes place on the ground at the sample fields. The sample fields are chosen by statistical procedures, using skilled photo-interpreters. LANDSAT cannot see the individual small fields, less than 10 acres, so typical in developing countries. But it does see agricultural intensity patterns of an entire country in just a few days. By breaking out, or "stratifying", four or five of these intensities (land use themes) for an entire country, it is possible to select a small sample of fields (several hundred) which, if surveyed on the ground, can provide an accurate representation of national averages of yield, crop acreage, livestock, etc.

It is commendable that a good deal of OAE resources, with some technical assistance from USDA, have been used successfully to construct the ASF for the 10 central plain provinces and current plans call for extending this ASF construction to include 6 additional provinces. A problem that exists in OAE in expanding the ASF to more provinces is that of insufficient numbers of trained staff, space and ASF construction equipment and supplies. It has been well demonstrated in many countries that the ASF is a statistically sound system for agricultural surveys. This survey system when combined with objective yield survey (crop counting) can lead, if properly executed on a timely basis, to accurate and reliable crop and livestock estimates as well as some other types of economic data. There are usually three limiting constraints on getting useful data. They are manageable data requirements, logistics, and survey resources.

An issue was raised in the Project Identification Document (p. 15, issue D) relative to remotely sensed data and ASF. There were uncertainties within RTG as to which agency would have the major role in the Remote Sensing for Agriculture project (ASF) using AID W funding and USDA advisory services. The Remote Sensing for Agriculture project funding and project life is limited and there has been keen competition by various LDC's for participation. Nearly all resources have been committed. As a result, participation by Thailand in this project under present funding is not possible. However, the APP will meet the OAE needs relative to this sampling activity.

Major effort should be made by OAE to develop an ASF capability as soon as resources permit. This effort will require an adequate set of equipment and facilities be available to OAE on a full time basis. Only by this means can OAE develop a data set of many types with sufficient accuracy and reliability to support important research functions and to contribute to improvement of the various linear programming models and other research and information uses. The APP will provide TA assistance in ASF work and critical inputs of equipment and supplies as required. These inputs are needed in-house in the Agricultural Statistics Center in order to more efficiently complete ASF construction. A needed input from the National Research Council (NRC) is Landsat products, e.g. CCT and color composite 1:250,000 scale prints. It is assumed these products can be obtained with existing OAE (or NRC) funding. A Linear Measuring Set with video camera included in the equipment list represents the basis for a quantum leap forward in constructing the ASF and yearly survey execution.

When the NRC ground receiving system for LANDSAT real time data becomes operational in Bangkok, it will then be possible, dependent upon cloud cover, to generate "wall to wall" computer classification of every LANDSAT scene utilizing the Asian Institute of Technology (AIT) 3031 IBM Computer (scheduled for installation in the near future). Using the OAE ground survey ASF sample segments for training sets for land use coverage, an entire LANDSAT image composed of more than 34 million pixel elements of reflectance levels can provide improved land use/major crop estimates by means of a regression estimation technique (See Annex I.4). This system can be used to monitor current crop conditions. Such efforts, while appearing to be esoteric in developing countries, are in fact a distinct and viable possible best use of the present state of the art and the APP would be remiss in not making note of such potentials. TA assistance and computer software for the above is presently available in USDA-ESCS. Thailand's input to the ability to make current use of LANDSAT products could serve as a most useful developmental tool to other countries. This effort would make good use of AID's inputs to both NRC and AIT and be complementary to a high degree.

The TA to be provided by the APP is critical to the leadership, coordination and full realization of this expansion in the use of Remote Sensing for Agricultural Technology. Full benefit from the TA will only be realized with a linkage and cooperative arrangement with NRC and AIT and by providing the full complement of technical materials and equipment needs which also are linked to this technical assistance input.

To meet current data needs, before ASF can become operational, action along the following lines should be used. The regional agro-economic zone staff in conjunction with Agricultural Extension Crop reporters should be trained to collect "intelligence" about crops at the sub-district level to provide an interim crop estimation scheme. However, this can not be done without risk of known and/or unknown bias and under-reporting or coverage -- either one giving unsatisfactory results. Technical assistance advisors should explore this suggestion with the Statistics Center's officials to ascertain feasibility of such an interim approach to crop estimation and proceed with caution.

#### Crop Land Registration

A very new function for the Agricultural Statistic Center is that of crop land registration of all plantings of sugar cane. This effort is to be extended to cassava and corn in the near future. Registration requires identification of growers and estimates of area planted and expected production for that particular crop. This is no small task and the resource requirements are substantial. To meet this new requirement, OAE could seek TA advice on budgeting and execution from USDA Agricultural Stabilization and Conservation Service (ASCS). This agency has unequalled experience in doing such work. The APP project provides for purchase of a video TV recording and electronic planimetry system that is well adapted for land registration when used with aircraft in conjunction with adequate ground survey. (See Annex I). The video system can be used effectively in the ASF work and facilitate OAE's work with many other RTG agencies including Royal Thai Survey Department, Royal Thai Forestry Department (forest encroachment monitoring), and Land Development Department. This would provide for a relatively inexpensive and effective means for generating baseline data and information on changes in land cover time with sequential applications.

#### b. Data Processing Center

In the Collecting (secondary data), Editing and Coding Branch of the Agricultural Statistics Center, increases in staff, transport facilities, duplication of questionnaires and reports functions and editing capability (desk calculators) are needed. The APP budget includes provision for this equipment plus one vehicle and TA input as needed.

Current plans call for installation of a new main frame computer in OAE as a central facility for MOAC. This additional machine capacity and the apparent scarcity of data processing personnel from other departments leads to the suggestion that provision be made to train computer programmers in one or more programming languages such as COBOL, FORTRAN IV and PLI. This training could be done at Asian Institute of Technology and should facilitate full and beneficial utilization of this facility. The APP has also budgeted for the purchase of a suitably adaptable compiler system (depending on the computer) including such software as SAS, and SPSS, remote terminals to provide user access to data bank, programs and for interactive capability by the several analysis and user divisions within MOAC. The APP provides funding for this purpose. The APP has budgeted one resident agricultural statistician for 4 years plus 14 TDY person months for a Mathematical Statistician, ASF specialist, Survey Data Collection expert, and Computer Systems Experts, to assist the Data Processing Center. It is anticipated that the resident statistician will provide on-the-job training for OAE staff in several agricultural statistics-related activities. Additionally, the statistician will serve as coordinator for the TDY assignments in the statistical and computer-related analyses as required.

#### 4. Formal and Informal Training

OAE's staffing pattern (Section III.B) contemplates approximately 200 additional staff over the next 4 years. Of the present staff, 6 hold the Ph.D. degree and 8 more Ph.D. degree candidates are scheduled to return to OAE from graduate training in the United States within 6 months. The OAE Secretary-General believes that training through the MS can adequately be handled in Thailand, but that training beyond the MS level will need to be done elsewhere.

Generally, the Ph.D. training requirement applies to all OAE Divisions. However, some Divisions require more upgrading than others. Particular conceptual and analytical capability deficiencies are to be found in rural development planning generally and in specific areas of counter cyclical response capability, e.g. demand/price analysis. At the Branch level a general upgrading of the staff complement is essential, and where specific analytical tasks are involved, some branch level personnel must be upgraded to the MA or MS equivalent level in statistics, in the basis of economic analysis and in budget and project analysis. The APP in its project components and in the technical analysis subsection suggests various combinations of country formal and informal training needed. A certain share of training would be supplied by the APP advisors by means of on-the-job and informal "course" type activities.

OAE wishes in four years' time to have the following complement of Ph.D. level analytical leadership:

<u>Activity</u>	<u>No. Ph.D.</u>
Division leaders	5
Policy	5
Data methods	2
Project analysis	3
Research and modeling	<u>14</u>
Total	<u>29</u>

Counting the 6 presently available and the 8 Ph.D.s returning, 15 additional Ph.D.s will need to be trained. Five of these are provided within the budget of the APP for graduate training beyond the MA degree. Candidates will be selected by OAE from among staff holding the MA degree or its equivalent.

It is anticipated that these training assignments will not lessen OAE's overall staff capability within the life of the project because of the return of the new Ph.D.s, the contributions of the TA team to upgrading the overall staff capability, the interim MS training program, and supplementary assistance from the ASEAN Agricultural Development Planning Center. Funding for the 10 additional Ph.D.s must be provided from other sources following the 4 year project. All candidates must meet normal entrance criteria of the U.S. university graduate school training programs.

Areas for which Ph.D. training has already been discussed are:

- a. Statistics-Computer Sciences
- b. Modeling of Market Operations
- c. Demand/Project Analysis
- d. Consumption Economics

OAE in consultation with the resident advisors should select the appropriate graduate training facilities. In each case, the dissertation research will be done on high OAE priority problems in Thailand and provision shall be made for completion of research under direct supervision of advisors from the degree granting institution. In some cases provisions should be made for internship at institutions such as the U.S. Departments of Commerce or Agriculture or the Michigan Survey Research Center.

Of the funds budgeted in the PP for in-country training, \$10,000 will be used to finance 8 to 10 MA level research studies to be conducted by Thai participants in the ASEAN Center or Kasetsart University. The remainder of these funds would be used to train 9 MA level candidates in programs such as those offered at Asian Institute of Technology (AIT), National Institute of Development Assistance (NIDA), and National Research Council (NRC). Additional funds (\$127,000) will be used for non-degree training (Statistics/Computer applications) in the USDA and US Bureau of Census and to bring guest lecturers and/or to hold international policy/planning seminars and workshops for OAE and APP staff. These could be used to complement funding already designated for a similar purpose as a part of the ASEAN Center Project.

D. Terms of Reference and Work Plan

1. Terms of Reference

The terms of reference for utilization of the technical assistance outlined above in the PF and the tasks enumerated under the work plan shall be the following:

a. That the primary objective of this technical assistance is to provide conceptual and methodological inputs to national socioeconomic developmental and/or counter cyclical planning for agriculture and the rural sector of Thailand;

b. That the scope of work outlined herein will assist OAE in its problem and priority project identification processes, in project monitoring and in budget analysis, including supporting data collection, analysis and research.

These terms of reference have application to each of the five OAE Divisions. The technical assistance will be applied in an advisory role.

2. Work Plan

Under the above terms of reference the resident OAE advisory staff will:

a. Work jointly on a team with OAE staff on problem and/or project identification, drawing upon their own experiences and expertise, and upon such other resources as are relevant and essential;

b. Identify problem situations on which special TDY advisory competence, beyond the team's collective experience, is required and jointly with OAE will arrange for such TDY advisory services;

c. For key situations and/or for special aspects of problem identification or program coordination seek the advisory services of especially and/or uniquely qualified individuals;

d. Within the terms of reference, conduct courses, seminars and/or workshops for OAE staff and others;

e. At the request of OAE, evaluate and make recommendations on organization of OAE, Office and/or Division functions and alignments, and staff requirements and staffing patterns;

f. Assist OAE with selection of MA and higher degree training candidates from OAE staff, recommending special studies and/or thesis topics as appropriate;

g. Attend international meetings including preparing reports or papers when attendance is relevant to and will further the OAE assistance program.

### III. PROJECT ANALYSIS

OAE was established as an office by the RTG Agricultural Economics Act of B.E. 2522 (25th Day of February, 1979). Section 9 of the Act, in brief, states that OAE will perform the following duties (See Annex E):

1. Analyze policy and development plans for submission to the Committee,
2. Study and analyze agricultural production plans,
3. Study and analyze marketing operations and demand/price relations.
4. Study and analyze sources of and utilization of agricultural resources,
5. Compile agricultural statistical information and maintain a data bank,
6. Analyze and evaluate outcomes of investments in agricultural projects,
7. Analyze other sectors of economic development bearing on agriculture,
8. Develop a register of agricultural enterprises,
9. Coordinate with related government agencies in establishing agricultural policy and development plans.

To carry out its assignments and responsibilities, OAE has 837 approved positions, of which 732 are budgeted. OAE has 179 BA level employees and 74 with the MA or Ph.D. degree, about 25 percent in policy grouping and the balance in project analysis and research. Eight officers with MAs are presently studying for the Ph.D. degree abroad. A good share, if not the majority, of the OAE professional staff are experienced in the use of the LP type models and data processing methods which were set up with the assistance of Iowa State University.

While OAE staff is experienced in linear programming and input-output modeling and in development of agricultural data, particularly on crops, OAE staff people are not well experienced in problem identification, project analysis and monitoring, and in budget analysis to the extent that will be required to fulfill the roles envisioned in the Agricultural Economics Act of 2522. These responsibilities are in addition to OAE's

responsibility as an Agricultural Statistics Center for the MOAC which is charged with developing and maintaining a data bank. These are the main areas that OAE agrees need strengthening.

A. TECHNICAL ANALYSIS OF OAE

OAE Technical Assistance needs as identified in this PP are based on an analysis of the following:

- review and discussion of the Agricultural Economics Act of B.E. 2522 with OAE Secretary-General and Division Directors, primary users and co generators of information, with Directors General, planning and budget staff in all MOAC Department and with key planning and budget officials in both Bureau of Budget and the National Economic and Social Development Board (See Annex ).
- compilation and review of verifiable outputs of OAE including such items as minutes of the Committee on Agricultural Policy and Planning, published reports, bulletins, staff papers, planning documents, speeches, etc. and
- review of organization, staff strength, perceived functions and apparent educational qualifications of OAE major Divisions.

This analysis consisted of gaining an initial understanding and attempting to predict the implications of the statutory mission of OAE in terms of types of outputs currently available vs. those that are increasingly required. Finally, the implications of these changes in outputs are traced to OAE staffing levels, capabilities and prospective areas for technical assistance and training. Obviously, this procedure represents only a first cut at discovering and programming a change in institutional capability. A primary objective of TA provided in the APP would be to re-evaluate these findings to ensure that the perceived role of OAE has not changed substantially and the TA being provided facilitates OAE outputs which are of suitable quality and timeliness to meet the requirements of that role.

1. OAE Capability to Respond to User Expectations

The role of OAE in supplying policy information, in coordinating MOAC project and budget activities, and in facilitating organization and use of data substantially expanded with the Agricultural Economics Act of B.E. 2522.

Primary emphasis on planning and research has expanded to include leadership in agricultural policy formulation of MOAC, establishing definitive priorities, planning, project and budget functions, and in reviewing, coordinating and monitoring MOAC activities including projects, programs, and budgets. Careful review of this new role with all Director-Generals of MOAC Departments led the PP team to conclude that in most important respects, these high level officials concur with the objectives implicit in the Act. They are willing to support efforts by OAE on behalf of the MOAC to effect close association between their departmental activities and sectoral objectives established by the Ministry. At present, however, mechanisms currently available to OAE for accomplishing this task do not extend much beyond the statutory provision of the Act and a political climate which appears to favor experimentation with new and hopefully improved means for accomplishing issue-focused integration of projects across departmental lines. While there is some chance for decentralizing the budget process by establishing a higher degree of responsibility (capability) in project analysis and approval at the ministry level, to our knowledge, only MOAC, with the elevated role of OAE, has been given license to play this coordinative role.

Review of the monthly meetings of the Committee on Agricultural Policy and Planning reveals substantial expansion in the workload of all Divisions within OAE, but especially the Policy and Planning and the Economic Research Divisions. A separate Branch within the Policy Division works regularly with the Secretary-General and the Under-Secretary of State to prepare the Committee's Agenda. Additionally these minutes reveal that more than 40 reports on subjects ranging from production targets for sugar cane to improvements on agricultural economic zone designations were prepared and presented to the Committee during the past 10 months. In addition to the Secretary-General's participation as permanent secretary to the Committee, a substantial number of the OAE's staff have regularly been included in these sessions. This representation generally includes Division Directors, but on occasion Branch Chiefs have also attended.

Evidence of interaction of OAE with supra-ministry units such as NESDB and BOB is not as readily evident except in the planning area where OAE has participated with NESDB in earlier planning efforts for the agricultural sector. However, there is strong expectation among OAE Division Directors that this role will be expanded in the preparation of the next 5 - year plan. BOB officials suggest that the OAE, in concert with the Committee, is expected to reduce the current burden of BOB and NESDB by setting and coordinating priorities for projects and budgets for MOAC.

## 2. OAE Outputs

The measurable outputs of OAE have shown remarkable expansion in number and variety over time. This reflects an ability on the part of OAE to deliver a useful and timely output, but now even larger and more frequent requests are being made. Even without the Agricultural Economics Act of B.E. 2522, OAE outputs could reasonably have been expected to increase significantly as more trained people return from study abroad. With the Act, this expansion has already begun to accelerate, but its full impact on output will not be realized for some time. A partial listing of OAE outputs is shown in Table I. Relative to these outputs, it is to be noted that greater concern for statistical reliability must be developed.

Current policy and planning activities of OAE are not without precedent. About 10 years ago, OAE began to respond to the need for planning and management studies and to relate activities of government to conditions in the rural sector. Most of these analyses were on problems of management at the farm level and an examination of resource allocation, economic, and production-type impacts associated with prospective RTG policies and programs. Studies in the late 1970s basically addressed a long-term time frame with only minor and coincidental attention being given to short-term counter cyclical type problems. In the past twelve months, OAE program emphasis has shifted towards an emphasis on National Policy and project analysis. Virtually no time is available for indepth research.

The average number of policy reports has increased from 1.5 per year in 1961-65 to 30 per year between 1975-80. Additionally the Secretary General of OAE has increasingly been involved with committee assignments, plus his assignment as secretary of the Committee for Agriculture Policy and Planning. A large share of OAE staff have also been directed to carry out special assignments for the Committee.

The largest observable change in output in the past year is the large number of reports from committees and sub-committees which appear in the minutes of the Committee for Agriculture Policy and Planning. Unfortunately, the most important outputs are often quite intangible and this tends to be the case for the Division of Implementation of Plans. This Division has major responsibility in project implementation and budget analysis, which do not translate into publications or committee reports. The Division's responsibilities might more reasonably be measured in terms of the success of MOAC

Table I - Work Outputs of OAE, by Type

Time Interval	Data and Statistic	Production and Market Analysis	Planning	Policy Committees	Miscellaneous
1955-60	5	7	-	NA	2
1961-65	5	7	-	NA	3
1966-70	6	18	-	NA	-
1971-75	24	36	1	16	3
1976-80	69	142	26	31 <sup>a/</sup>	1

<sup>a/</sup> Divisions of OAE, primarily OAE have received more than 40 committee and sub-committee assignments during the past 10 months in conjunction with activities of the Committee for Agriculture Policy and Planning MOAC.

in setting up and completing successful projects and in reallocating line budgets among departments. Likewise, the Research Division output might better be measured in terms of how it is able to handle an increasing proportion of requests for information rather than its ability to anticipate information requests on policy issues. In looking ahead, OAE can expect an increasing emphasis on price policies, export balance, monitoring of projects and project screening methods. Most of these cannot be addressed directly from current research or current data.

## B. SOCIAL SOUNDNESS ANALYSIS

### 1. Benefit Incidence

The basic benefits question is how enhancement of the role of OAE will improve the general socio-economic well-being of the rural population and their participation in and contribution to national economic growth.

The RTG and MOAC have made clear their intentions to provide an increased level of services and benefits to the farm population, with emphasis on low-income farm households. However, there remains some divergence between policy commitment and demonstrated performance. Results of the (first) Year of the Farmer have been announced in terms of completed projects and funds expended. Meaningful impact at the farm-level, and particularly the extent to which new or expanded service programs have made any significant difference for low-income farmers, needs far more detailed scrutiny. Institutional development, as proposed for the APP, will help close the gap between commitment and performance, and thus serve low-income farmers throughout the country, by analyzing farmers' needs, recommending policy, designing projects aligned with these needs, and evaluating results.

Even though the overall impact of the project will be nationwide, the OAE proposes to initially focus its analytical instruments and planning activities in large part on the agricultural problems and needs of low-income farmers in Northeast Thailand which is comprised of Thailand's agro-economic zones 1-5. This emphasis assures a coincidence of interest with USAID's CDSS.

OAE has considerable demonstrated research and analytical capacity, particularly in terms of its modeling efforts. These models have the capability of estimating changes in farm output by crop, value of production, land use, use of variable inputs including labor demand by month, payments of farm workers, and all variable production costs. Such estimates can be generated nationally or regionally to the level of Thailand's agro-economic zones. Solutions may be readily interpreted in terms of farm income for the nation and for its sub-regions to the level of the 19 agro-economic zones. This research and modeling capability provides the essential basis for addressing a broad range of MOAC policy concerns and a nucleus for capturing the full technical benefit to be obtained from the TA inputs directed in this PP. The design of this APP is to provide a critical TA input for expanding the capability of this nucleus within OAE to meet its response obligations as set out in the Agricultural Economics Act of BE 2522.

The main obligation of OAE is to develop strong capabilities in:

- a. Rural Development Planning, including project analysis, budget review and project monitoring;
  - research and modeling efforts;
  - data gathering and processing.
- b. Counter cyclical response, including
  - ability to evaluate outcomes of alternative plans and/or strategies; and
  - ability to pose policy type questions or anticipate policy decisions for improvement of economic growth in the rural sector.

Success in either or both of these areas should result in substantial benefit to low income farmers and the rural sector. For example, improved capability to conduct rural development planning that includes high quality project design and budgeting functions, will assure that 1) only those projects with highest income and employment impact will be selected, 2) MOAC projects and budgets will be designed in ways which minimize their costs to the public sector (existing

infrastructure and scarce manpower) per unit of income and employment generated in target zones or in production of "critical commodities", 3) mutually supporting MOAC projects and programs can be identified, coordinated, and monitored to assure the availability of benefits at the earliest possible date, 4) funding and RTG input to projects and programs with poor record of income and employment contribution can be reallocated to more productive areas among designated target groups, 5) existing projects and budgets may be supplemented in ways which will increase their potential for generating income and/or employment by changing project location, project emphasis, mix of inputs and/or level of funding effort, etc.

Increased capability in the research and modeling area translates into income, income distributional and employment benefits in the following ways:

1) There will exist a more reliable and accurate conceptual basis for relating the actions of the RTG to income and employment generation in the rural sector (zones and regions);

2) Estimates of income and employment impact will be extended to include the implications of changing investment, exports and agricultural price policies to the rural sector as well as farmers in the agro-economic zones.

Benefit from counter cyclical response capability, including more reliable information in prices, marketing margins, and demands for agricultural commodities, will have primary impact on establishing "reasonable" export targets, i.e., targets which maximize the amount of Thai rice which can enter the world market and thus reduce the costs of uncertainty (higher costs/low farmer returns) which would ordinarily be passed on to farmers. A second area where price data and good reliable measures of marketing margins will benefit farmers is in determination of the efficiency of traders and middle men. Better farm level information on price reduces the ability of trader to take advantage of poor farmers who enter the market only at irregular intervals and currently lack price information.

As noted on page 45, OAE's largest economic research branch is engaged in a number of studies involving farm level models. However, it is not advisable that OAE direct a greater effort to this modelling effort. The

Primary value of farm-level models is in on-farm management of resources, i.e., maximization of an individual farmer income from farm enterprises within the limits of his resources and capital budget. It has value for extension type activities in which management recommendations are prepared specific to sets of "typical" farms. In some applications, effort has been made to weight these sets to aggregate farm level model results into larger planning zone or regions; however this approach confronts many conceptual and data problems. The resources currently and potentially available to OAE are not sufficient to sustain anything more than pilot indicative efforts in farm-level modeling. Limited data input is available from the farm records activity of OAE which could serve to demonstrate the type of information potential which could be developed, but the long term effort at farm level would more reasonably be placed with Agricultural Extension Department.

In the U.S. these services are typically provided via private subscription in large agricultural states and only where farm members are very small has the public sector (extension services) continued to be involved.

## 2. Role of Women

The longer-term project benefits will serve large portions of the farm population, men and women alike. The OAE professional staff itself includes 93 women within total professional personnel strength of over 200. However, women are most significantly represented at the personnel qualification level of the Bachelor Degree; 29 of the 31 staff members with MA or Ph.D. qualification are men. Therefore the APP will explore possibilities and work towards enhancement of the professional role of women within the OAE.

C. Institutional Analysis

The overall organization and expanded functions of OAE are in two general areas of responsibility:

First, a general responsibility to deal with the entire area of economic growth in the rural sector, namely:

- (a) Export/import trade and balance of payment questions, such as those involved in the following examples:
  - Import substitution;
  - Prices of agricultural inputs and products.
- (b) National policy decisions on land use and rural investment allocations dealing with such matters as:
  - Acreages and price support;
  - Crop and livestock enterprises (or combination);
  - Investments in agriculture and industry development.

Second, specific responsibility and concern with low farm income and low agricultural productivity, related to:

- (a) Low cost - low energy systems;
- (b) Cost effective practices and use of production factors;
- (c) Incentive prices and effective marketing;
- (d) Adequate services and supplies of factors.

The responsibilities of OAE can be viewed from two separate but interrelated perspectives: a policy issue response capability and a data and analysis capability. In either case, the functional program of OAE centers on two main foci:

- (a) Policy and planning coordination and
- (b) Project analysis relative to national economic objectives.

Major OAE functions are divided approximately along the following lines (by Divisions):

(a) Policy and Planning

- Division of Policy and Agricultural Development.
- Division of Agricultural Economic Research.

(b) Project Analysis

- Division of Economic Project and Program Evaluation
- Division of Implementation of Plans.
- Agricultural Statistics Center.

In sum, OAE must respond to its expanded role by (a) providing a "think tank" response capability for the Minister, (B) acting as coordinator and responsible reference point within MOAC, (c) providing linkage and interchange with NESDB and the Budget Bureau on establishing priorities for problems and on project selection.

Essentially, OAE has moved overnight from a research and broad-gauged advisory role to take on the additional task of providing decision information relative to MOAC budget allocation, design and evaluation of a large number of MOAC agricultural development projects. Thus, the majority of OAE staff time has suddenly been preoccupied with responding to MOAC and RTG requests on what to do about immediate problems. The responses are handled by individuals (through the Secretary General), by task forces, special surveys, by modeling alternatives or, if there is time, by interim responses and research.

A primary assignment of technical assistance on problem identification and modeling efforts will be to enable OAE to step back a pace and to get some breathing room in which to identify problems, make policy recommendations, and develop

a more rapid and proficient counter cyclical response capability, particularly for impact assessment at the farm and local levels.

Similarly, OAE requires further upgrading in its ability to assess alternative plans relative to RTG policies, provide policy insights, and provide policy direction for major policy questions such as marketing operations, factor-product pricing and land and water development.

1. OAE Organizational Structure

a. Figure 1 shows the organization of the new Office of Agricultural Economics and its interrelationship(s) with other Departments of MOAC. OAE provides the main staff input to the Committee for Agriculture policy and planning, and coordinates not only within the Ministry but also through the regional centers down to the Provincial and District levels. An important internal MOAC function of OAE is its direct linkage with the office of the Under-Secretary.

On a wider Ministry level, OAE has a direct responsibility to the national planning office (NESDB) and the Bureau of the Budget to review projects and project budgets in relationship to the sectoral plan. OAE also has direct involvement with many integrated MOAC project activities which receive inputs from several departments.

Organizational Structure

Figure 1. Organization of the new Office of Agricultural Economics and Its Inter-relationship(s) with Concerned Departments within MOAC.

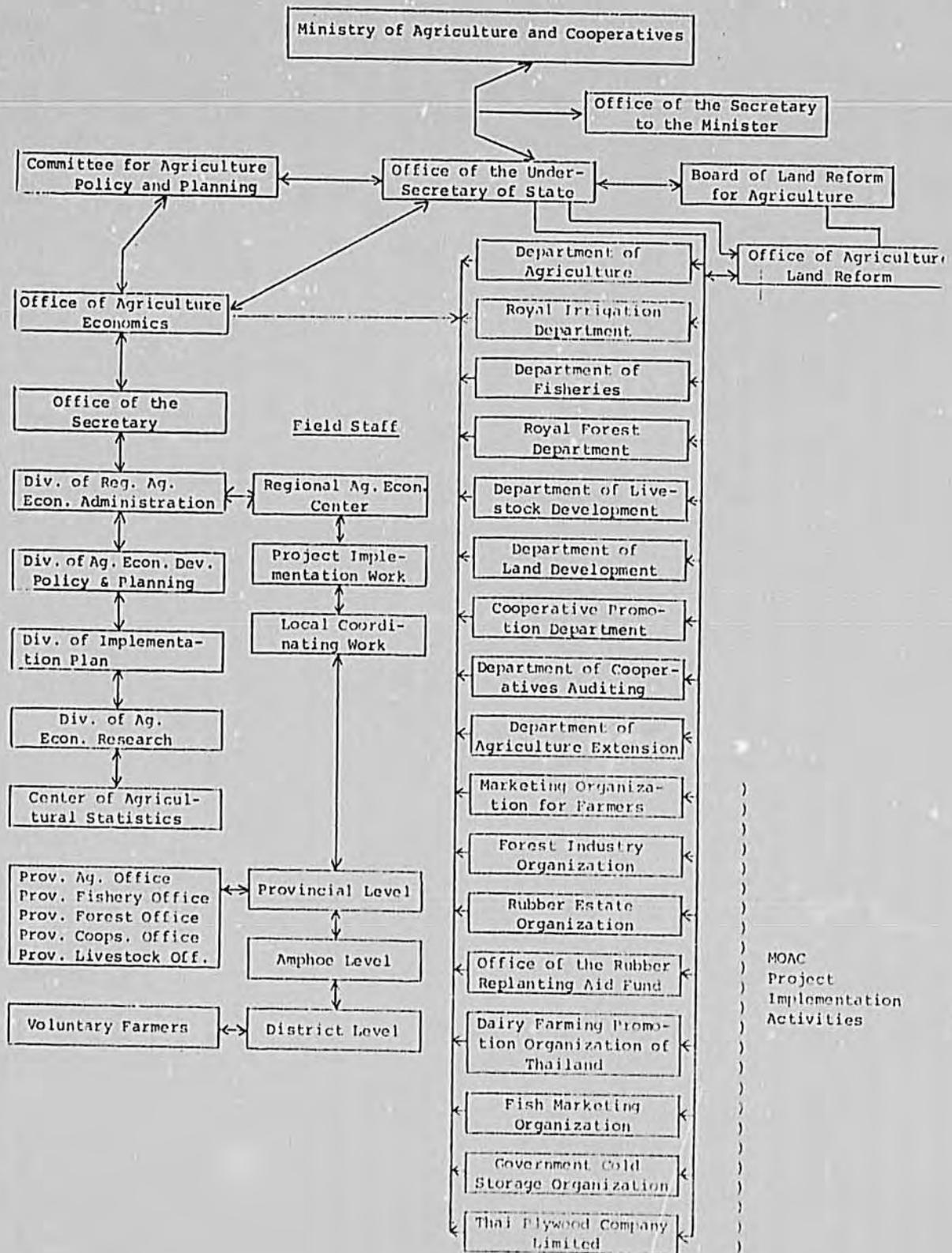
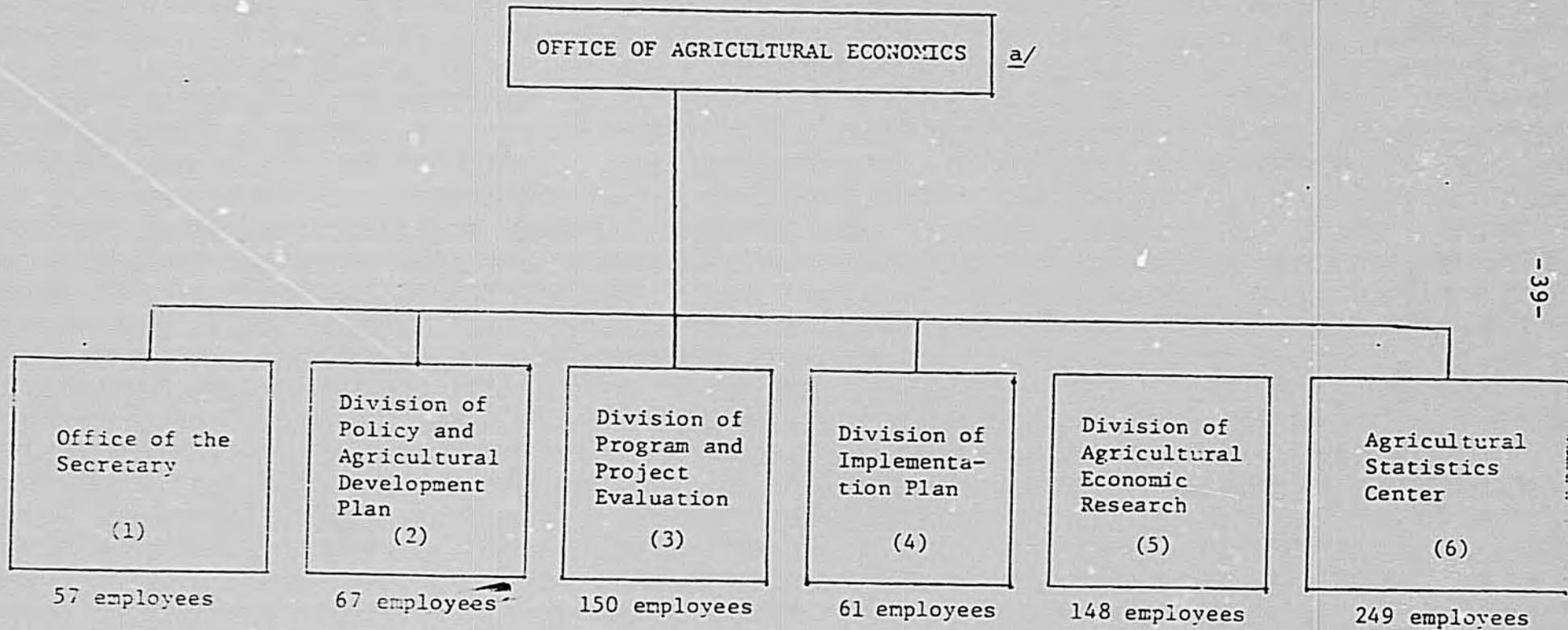


Figure 2. Organization of the Office of Agricultural Economics (OAE)



a/ OAE's authorized staff strength is 732, with 449 positions currently funded and appointed. This total does not include 8 officials who are studying for the Ph.D. and 7 for M.S. who are expected to return before January 1, 1981.

b. Figure 2 shows the distribution of full time staff within OAE, by Division. The largest number of employees are in the Research and Statistics Divisions which formed the nucleus of OAE's work program prior to passage of the Agricultural Act of BE 2522. The remaining Divisions are the newest and are the least adequately staffed, both in terms of numbers and index of staff quality. However, the level of staffing for each of these Divisions will depend upon OAE's developing an adequate specification of functions and operational plans to put these functions into effect.

2. Responsibilities and Functions of OAE's Divisions

a. Division of Policy and Agricultural Development Planning

OAE responses to requests for policy and agricultural development planning information are the primary responsibility of this Division. The range of this response requirement extends from choice of information source; whether from data bank, shelf research, new research, modeling, and so forth; to the delivery of a summarized product to the information user/decision maker. The primary user of output from this Division is the Committee on Agricultural Policy and Plans, but it also extends to the Cabinet, NESDB and other RTG Ministries. As a matter of operating principle, this division may consult, draft personnel, and research products from all potential sources within MOAC, but in practice this mode of operation has been limited primarily to OAE divisions.

Currently this division contains 10 branches which cut across the full range of agricultural economic research and modeling which are statutorially within the domain of OAE. It has closest working relationship with the Agricultural Economics Research Division, but must necessarily also maintain a close working relationship with the Agricultural Statistics Center and the Program and Project Evaluation Division.

Requests for information and data are typically relayed to the Division via the Secretary-General's Office; however, much effort and time are spent in direct contact with the Committee on Agricultural Policy and Plans and in a liaison capacity with other MOAC departments, supra ministry agencies and functionally integrated implementation units.

Increases in work load associated with the recently expanded role of OAE are most evident in this Division. The frequency of requests which must currently be met forces the Division into a reactive rather than an anticipatory mode of response. Additionally, a large portion of requests must be deliberated at length or referred to research in those situations where experience and shelf research are not yet available. Technical assistance provided with this APP is aimed at providing improved response capability by assisting in matching research and data gathering efforts with policy and developmental concerns and in shaping these outputs into forms which are more directly accessible by the Policy Division. TA in this area is critical to the entire APP effort because high quality and timely responses to short run policy and developmental issues are required to retain political and financial support essential for building more long run capacities in research, modeling and data gathering. Current staffing, even with the anticipated return from studies abroad of 3 Ph.D., is only marginally adequate. There are 42 BS, 14 MS and 1 Ph.D., and in the judgment of the team it will require an increase of 2 or 3 additional Ph.Ds to handle current and future work loads. Plus, it seems highly desirable to rotate senior officers through this Division in order that they become acquainted with the great variety of issues and problems and thus better understand the relevancy of their own particular research specialization. Also there is a need for exposure to the ideas and mechanisms of accomplishing a policy response in other units of government, and other regions and countries. This need could be met through national, regional and international workshops, conferences, and seminars which focus on tool areas and institutional forms which could be applied and adapted for use in Thailand. The activities as scheduled in the APP appear to be especially pertinent for those officers who either because of age, time or other constraints, in their present assignment, are not available for Ph.D. level training.

b. Division of Program and Project Evaluation

Field level operations on MOAC projects and programs are the primary focus of this Division. The Agro-Economic Zone Branch represents OAE in each of 19 agro-economic zones, supervising farm records data procurement and in gathering and supervising market information at the provincial level. This Branch works closely with the Agricultural Plan Development and Coordination Branch to assure consistency between provincial level MOAC projects and programs and the national agricultural plan. Additionally the latter Branch evaluates field conditions which could have important

impact on agricultural development projects requiring MOAC response. Two additional branches are concerned with analysis of projects, with separate emphases on pre-evaluation of feasibility and financial considerations of agricultural investments in the Project Evaluation Branch where cost recovery is critical; and project monitoring and ex-post evaluation in the Inspection and Project Evaluation Branch. Other activities within this Division focus on price stabilization programs and their impacts at the local level. Some additional effort is directed to coordination of MOAC and RTG initiatives on special projects such as ASEAN Food Security Reserves, ASEAN Agricultural Development Planning Center and regional and local level training courses in agricultural development planning.

The Branches of this division employ 150 people, 68 BA, 7 MS and 1 Ph.D. Approximately two-thirds of this staff is located outside Bangkok in the 19 agro-economic zone offices. Possibly the most important function of this Division is provided by the contact it provides on a daily basis with field level operations of OAE and MOAC. They play an important role in coordination of MOAC projects in the field, but more importantly they serve as an information linkage between the MOAC and local projects' information, extension and data gathering activities. Greater emphasis on price stabilization and promotion of export crops will place additional burdens on this Division. At current staffing levels it will be able to maintain a presence in the 19 agro-economic zones but little effort can be directed to any expansion of role beyond coordination and basic data gathering.

A critical nucleus of staff has been assembled for project and program analysis in three Branches. However, their capacity to play a direct role in feasibility, coordination and monitoring of projects can not extend but very marginally beyond current levels. The TA outlined in the APP will provide a means for extending and upgrading the capacity of 8-10 BA and MS level OAE staff as an integral part of that MOAC training which is designed primarily for personnel in the Program and Project Evaluation Division other Departments of MOAC and the Division of Implementation of Plans in the OAE. TA will provide the leadership, technical input and coordination for this type of training. However, the heavy staffing burden associated with classroom and on-the-job training efforts must be supplied from such outside units as TTMS, NIDA, the ADPC, and the Thai universities.

c. Division of Implementation of Plans

The Division of Implementation of Plans has the responsibility of working directly with each of the MOAC Departments on project evaluation and budget preparation. This Division is also responsible for supplying a monitoring input on Ministry of Agriculture and Cooperatives projects and plans to NESDB and the Budget Bureau. MOAC's adoption of an integrated project format places a heavy responsibility on this OAE Division as it has primary liaison and leadership responsibilities.

At this time, the Implementation Division has neither the experience nor the personnel capability to adequately conduct its responsibilities. The majority of personnel in the Division have had no prior experience in this OAE functional area, and likewise have had no training in budget analysis. Consequently, the input of the Division to the budget review process through only one budgeting cycle might be characterized as pro forma. Nevertheless, the Division, with additional guidance and with some training in budget analysis, particularly on relating the budgeting to the rural development planning process, is in a position to become a vital part of OAE operations and to supply a strategic input by means of project evaluation criteria and budgeting guidelines to the Departments. Quite obviously, then, the Division would be able, as a consequence, to serve in a coordinating role within MOAC.

This Division presently has a complement of 31 people divided among 8 Branches. Each Branch is assigned the responsibility of coordinating with one or more of the MOAC Departments and assisting other OAE Divisions to "analyze the MOAC budget and project plans area to follow and check project achievements". The extent to which the Division can adequately perform these assignments at this stage is problematical. The Division is struggling to develop a conceptual frame within which it would prepare to operate to provide guidelines on how to carry out its responsibilities. This is to be expected because the Division is so new but, on the other hand, it must develop this capacity quickly and well if it is to accomplish intended objectives. Some special problems are associated with the recent history of this unit because it was created by transferring some functional branches of the Projects Division in the Under-Secretary's Office to OAE. Some political problems accompanying that transfer now appear to be solved

through the efforts of the Under-Secretary's Office. Limited capability to handle feasibility and project review was carried into the Division with transferred personnel. However, their capability is currently no match for the tasks assigned by the Secretary-General. Implementation Division must place itself in a position to:

(1) play a planning linkage role with NESDB, the Budget Bureau and MOAC Departments to relate projects and budgets to rural development objectives, and

(2) play a coordinate role within MOAC on relating "integrated" projects to the agricultural and rural development planning processes. An essential product of this responsibility focus would be to indicate to the OAE Secretary-General what kinds of research or policy guidelines will be required to determine or achieve desired distributive impact of projects.

d. Division of Agricultural Economics Research

The Division of Agricultural Economics Research provides the analytic core for all OAE operations. It provides a remarkably broad array of research outputs for use by RTG, MOAC and the general public. Fourteen Branches within the Division span the full range of agro-economic concerns from basic cost and returns/farm management studies to rural development/sector analysis. Specific research assignments within Branches and current staffing levels listed below:

- Crop Production Economics Research

Function: Analyze costs of production for crops by province, agro-economic zone, region, and nation

Staff: 12 persons, 1 with M.S., 1 with B.A.

- Livestock and Fishery Production Economics Research

Function: Analyze cost of production and production/marketing data for livestock and fisheries

Staff: 11 persons, 2 with M.A., 5 with B.A.

- Agricultural Input Production Research

Function: Analyze agricultural input demand, use, movement of prices.

Staff: 11 persons, 1 with M.A.,  
10 with B.A.

- Farm Management Research

Function: Analyze farm management efficiency at regional and farm levels by size and type of farm. Current efforts include studies of appropriate farming systems given alternative conditions of prices and technology, economics of water use, credit requirements for different farm enterprise demands.

Staff: 28 persons, 2 with M.A., 13  
with B.A.

- Agricultural Institutions Development

Function: Study socio-economic conditions of farmer groups, operation and regulations of cooperatives, operations of government organizations supporting farmer groups, contractual arrangements between farmers and merchants, etc.

Staff: 13 persons, 2 with MA., 7 with B.A.

- Agricultural Industry Research

Function: Study agro-processing industry and linkages between the farm enterprise sector and non-farm enterprises

Staff: 11 persons, 1 Ph.D, 1 M.S., 8 B.A.

- Resource Development and Management Research

Function: Study impact of natural resource development on the economy and the effect of environmental pollution on agriculture.

Staff: 4 persons, 2 M.A., 2 B.A.

- Farm Expenditures, Incomes, and Debt

Function: Analyze farm household expenditure, income and credit liabilities by farm size and land type.

Staff: 6 persons, 3 B.A.

- Farm Bookkeeping

Function: Compile and analyze data from farmer accounts concerning income status, farm management, prices paid and received, cost of production, farm income for use in developing technical coefficients for models.

Staff: 9 persons, 1 M.A., 3 B.A.

- Agricultural Product Demand Analysis

Function: Analyze demand, both domestic and export, for agricultural products, product prices, and study food consumption behavior.

Staff: 7 persons, 1 M.A., 5 B.A.

- Crop Marketing Research

Function: Analyze agricultural product market structure and price movements.

Staff: 9 persons, 2 M.A., 7 B.S.

- Livestock and Fisheries Marketing

Function: Analyze market structure for livestock and fishery products, and price movements.

Staff: 5 persons, 2 M.S., and 2 B.A.

- Price Analysis and Marketing Service

Function: Collect and report on farm prices, wholesale prices, and foreign prices on monthly basis. Study agricultural product price movements and forecast prices. Distribute weekly newsletters on agricultural product prices.

Staff: 10 persons, 2 M.A., 6 B.A.

e. Agricultural Statistics Center

The Center gathers information on economic conditions of farmers which is needed by policy makers in making their decisions concerning agricultural development policies and planning. This information covers land tenure, land use, crop and livestock production, income and expenses of farmers. In addition, the Center also serves as the data processing unit for various offices of RTG as well as those of the private sector and publishes year-books on Agricultural Statistics in Thailand.

Within OAE, data collected and processed by this Division provides the essential data base used by the Divisions of Agricultural Research, Agricultural Economic Development and Policy and Agricultural Development Planning.

Currently this unit serves as the central data processing center for MOAC, a role which is expected to increase substantially. There are 8 Branches within this Division with functional responsibilities which include the following:

(1) Improvement in statistical techniques including construction of sampling frames, and design of analysis procedures;

- (2) Conduct of enumerative surveys on crops and livestock and economic conditions of farms and the rural sector;
- (3) Collection of data and code interpretation;
- (4) Maintain computer facilities including capacity for installing and maintaining proprietary programs, as well as those written in to service regular MOAC computer applications.
- (5) Prepare forecasts of planted area, yield and production for crops using regression methods.
- (6) Registration of farmers and issuance of agro-business licenses;
- (7) Coordination of OAE participation and use of remote sensing data for use in MOAC.

Staff currently assigned to this Division is 140 with 71 BAs and 2 MA degrees. More detailed discussion of staffing and utilization of TA and training are presented in the following section.

f. Administrative

Responsible for administrative work of the division, e.g., personnel management, correspondence, etc.

Staff currently assigned to this OAE function is 8 with 1 BA degree.

Although 4 or 5 of the PhDs who are scheduled to return in the next few months will be assigned to Branches within the Research Division, they still has need for additional TA in selected research areas (See Section II-C-2) and for replacement of senior US and PhD level staff who are quickly being over-committed with new activities associated with OAE's new and expanded role in policy and project analysis. It is noteworthy that the Research Division, supporting all developmental and countercyclic policy for an agricultural based nation of 40 million, is only about one-half the size of the typical Agricultural Economics Department in a U.S. landgrant university.

### 3. Staff Strength and Qualifications

Authorized staff strength, current PC classification and educational qualification for OAE personnel are presented in Annex in Tables III-1 through III-7. The first table presents a summary of these items for OAE by Division and Table III-2 through III-7 for Branches by Division. Numbers of staff positions included in these tables represent the total number of ordinary positions authorized by the CSC including both filled and vacant. Thus, the tables include the number of funded but currently unfilled slots plus authorized but unfunded ones. For example, in OAE, total number of filled and funded positions is only 449. This compares with the 732 shown in the table. Vacancies and unfunded positions are shown for each Division in Column one and two, respectively, of each table. Considerable significance attaches to this separate accounting for authorized but unfilled positions because it reflects the separate but conflicting result of deliberations from two supra ministry units - namely, CSC and BOB. CSC has responded to MOAC petitions for expansion of staff to the extent of 208 positions. BOB has not yet provided funding to cover these positions and eventual hiring awaits their approval. The potential associated with this response by CSC when coupled with current OAE budget funds is very encouraging. Approximately 100 of these positions represent potential expansion of professional staff. In each of the past two years OAE has received substantial increases in budget, up to 40 percent, which, if projected over the life of the APP, would permit a very substantial addition to OAE capacity. The primary constraints will be those associated with assimilation of new people into productive areas, and in dealing with the time requirement for senior research and policy officers who must supervise this process. It is in this area that provision of technical assistance can be extremely useful to the OAE. Recently returned PhD and MS people may provide a part of this supervisory input, but the primary burden will remain with the 5 PhDs currently on OAE staff and TA personnel. Largest expansions envisioned by Divisions of OAE are in Statistics, Economic Project and Program Evaluation and Implementation Plan Divisions where increases are anticipated to be 81, 63 and 21 persons, respectively. Expansions in staff of this magnitude appear quite adequate, given current levels of an activity, with the possible exception of Policy and Planning Division which is targeted to receive only 12 new positions. The latter deficiency is especially important because currently there are an additional 10 vacancies in this Division and its work load in short term policy assignments has

expanded significantly in the past 12 months. The greatest positive impact on OAE operation can be obtained from this major expansion of staff only if initial elements of TA are supplied to assure that qualitative growth occurs as well. It is highly desirable that such TA inputs be supplied at an early point such that bottle necks associated with inexperienced staff do not develop. This could be especially difficult in the process of making ongoing policy, planning, project and budget analyses functions when at the same time trainees for PhD and MS are removed.

#### 4. Summary

Total authorized staff strength in OAE on July 1, 1980, was 1185 persons. Four hundred fifty three of these were either part time or temporary and thus do not figure prominently in terms of technical strength except in terms of a limited number who may qualify for elevation to permanent status when funding permits. Seven hundred thirty two ordinary positions have been approved by CSC, but only 449 are currently filled either because of the unavailability of qualified people or more importantly because funding has not yet been provided for 208 positions. The Secretary General and his Division Directors have indicated that these positions should be filled over the next two to three years as budgets permit. TA in the APP is expected to play a critical role in integrating this new staff and in identifying 5 PhDs, up to 30 persons for MS level and a large number, yet to be determined, for workshops and practical experience in closely related specializations outside Thailand.

Current and programmed increase in positions by Division, are as follows: 1) Office of the Secretary (42, 15); Policy and Planning (45, 22); Economic Projects and Program Evaluation (73, 77) Implementation Plan (31, 30); Agricultural Economics Research (118, 30) and Agricultural Statistics Center (140, 109).

#### D. Environmental Analysis

A negative determination has been approved.  
(See Annex H).

E. PROJECT ISSUES

1. Relationship to AID Strategy

The proposed project is consistent with both the Agency's Agricultural Development Policy Paper (June 1978) which assigns high priority to the functional area of planning and policy analysis (pages 30-34) and the Mission's CDSS, which stresses the importance of effective planning, policy analysis, and project preparation by the Ministry of Agriculture and Cooperatives (MOAC) in relation to rainfed agricultural development. The OAE's intention to give priority attention to Northeast Thailand and orient planning to the needs of low-income farmers aligns well with the geographic focus and basic human needs concern of the CDSS. A stronger analytical and planning capability by the MOAC will enhance the likelihood of meaningful development efforts for three other lines of action proposed in the CDSS: utilization of irrigation potential, watershed development in North Thailand, and provincial planning and development.

2. Other Donor Interests

There are no plans by other donors to provide assistance to the OAE. Earlier, FAO and the World Bank had provided assistance to the OAE. OAE and the World Bank have had preliminary discussions concerning bank financing for two activities:

- establishment of OAE units in each of the nineteen agro-economic zones to promote agricultural development along the lines of zonal plans. Bank assistance is desired for staff, facilities and equipment (including vehicles) at zone headquarters throughout Thailand;
- strengthening of the OAE's data collection program, including an increase in the number of field enumerators and procurement of new data processing equipment.

The PP team discussed common interests in agricultural planning with World Bank staff in Bangkok and are convinced that the proposed AID project and assistance being contemplated by the World Bank would be complementary. World

Bank officials have encouraged USAID to proceed with the agricultural planning project since it meshes well with the Bank's advice to the RTG to strengthen sectoral planning and will be supportive of current and future Bank initiatives to promote agricultural production.

3. Relationship to ASEAN Agricultural Development Planning Center (AADPC)

Mission has reviewed and compared the requirements of both this project and the AADPC. Per Annex D, we have concluded that the two activities are essentially complementary in nature, and that OAE's involvement is appropriate for each undertaking.

4. OAE Institutional Relationships

As indicated in Section III A.1., the PP team obtained from the DG's of most MOAC departments at least indication of willingness to cooperate with OAE in the latter's program and overview functions, and perhaps a real desire for OAE service in the areas of project formulation and economic appraisal, particularly for integrated projects. Conversion of this expression of interest into real collaboration will depend in large portion on OAE's ability to deliver effective results, which is the object of this project.

To date, the OAE's budget review function has not caused problems for line departments. The successful performance of this function will depend on the degree to which OAE accepts the fact that the process will have to proceed gradually, with OAE establishing priorities for different projects in the context of the Ministry's objectives.

The Bureau of the Budget (BOB) and the National Economic and Social Development Board (NESDB) see the importance of OAE's role in screening projects and setting priorities for implementation. NESDB further hopes that OAE's growth in expertise overtime will be such that it can be called upon for advice and inputs in the Five Year Planning process.

An additional significant potential role for the OAE is that involved in the establishment of a liaison relationship between OAE with the BOB, Civil Service Commission and NESDB in order to assure early concurrence by these

planning agencies to new project initiatives by MOAC departments and the provision of sufficient human and budgetary resources to carry out projects.

In sum, we believe that lines of cooperation can be established between concerned agencies sufficient to permit OAE to carry its legal mandate into the realm of practical consequence.

#### 5. Appropriate Project Duration

The PP team considered the kinds of products which could be produced over various time periods assuming that the technical assistance inputs would occur as scheduled. These products and their timing were then compared against the seriousness of the strengthening requirement within the OAE structure. It was concluded that it would take a full four years to accomplish certain aspects of the strengthening program. These aspects include significantly upgrading of the capacity of OAE's research program, developing an area frame sampling capability, creating a project and budget analysis and maintaining capability, and establishing a **broad-based** capability for counter cyclical policy response. It is believed that all of these conditions can be achieved within a four-year period, but not less. Four years is also viewed as necessary to facilitate some long-term training required to upgrade OAE staff.

#### F. Evaluation Plan

The project will have two special evaluations during the four-year life of project, one at the end of the second year and a final evaluation at the end of the fourth year. There are no current plans for annual reviews in addition to the special evaluations. Such an annual review can, however, be initiated by the project manager if the circumstances of project implementation indicate that one is needed. The question of baseline data as such does not arise in this type of institution-building/policy impact project. The criteria for verification of achievement of project purpose will be based on the evidence of increased policy authority in OAE and the number of projects in which OAE has had a guiding hand in choice and design.

IV. FINANCIAL PLAN

The following technical assistance is proposed by project component:

	<u>Long Term</u>	<u>Short Term</u>
1. Problem identification and preparation	6 P.Y.	8 P.M.
2. Data methods improvement	4 P.Y.	14 P.M.
3: Analytical techniques and research	<u>4 P.Y.</u>	<u>8 P.Y.</u>
	<u>14 P.Y.</u>	<u>30 P.Y.</u>
	=====	=====

Within the current year, OAE will have a basic complement of well-trained staff. (See Annex ). However, there is need for some staff enrichment consistent with the expanding responsibilities of OAE. Accordingly, the budget includes financing for local training as prescribed by the RTG USG bi-lateral agreement and provision for 20 international trips averaging one month in duration. Provision is also made for advanced training for four to five people in recognition that OAE staff needs additional Ph.D's if they are to operate effectively and to improve relatively new techniques for evaluating the impacts of alternative agricultural policies on low income households.

Since above nine new Ph.D. economists are expected to return to OAE from their studies abroad within a few months, the release of four to five of the employees to pursue their Ph.D. degrees could be accommodated. The \$340,000 budgeted for international training should be sufficient to cover the proposed levels of short and long term training. (See training section for detailed discussion of this Project component.)

The budget, by line item, is as follows:

		<u>Project Cost (\$000)</u>		
	<u>Person-</u> <u>Months</u>	<u>USAID</u> <u>Grant</u>	<u>RTG</u>	<u>Total</u>
1. <u>Technical Assistance</u>				
a. Resident Advisors	168	1,788	34	1,822
b. Short-term Advisors	30	327	0	327
c. Local Personnel Budget	576	0	122	122
d. Local Office Support		0	30	30
e. Counterpart	768	0	178	178
2. <u>Training</u>				
a. Local		232	196	428
b. International		315	92	407
3. <u>Travel</u>				
a. Thailand		0	33	33
b. International Meetings		76	100	176
c. In-country Seminars		40	40	80
4. <u>Materials and Equipment</u>				
a. Area Frame Materials and Hardware		76	0	76
b. Collection, Coding, Editing, Publication Support		27	0	27
c. Computer Center Support		20	0	20
d. Other (to be used in statistics in other sections), plus shipping		53	0	53
e. Procurement, maintenance and other costs		0	70	70
5. <u>Evaluation</u>		20	30	50
	Sub-total	2,974	925	3,899
	Add Contingency 12%	215	111	326
	Grand Total	3,189	1,036	4,225

V. IMPLEMENTATION ARRANGEMENTS

1. Project Management

The Deputy Secretary General of OAE will be the responsible administrative coordinator for the project. He will be assisted in this task by staff in the Office of the Secretary-General and by a full-time administrative assistant contracted under the Project with RTG financing. Their role will be to plan for and administer all consultant and training activity and associated logistical support.

2. Procurement

a. Technical Assistance

Given the nature of the activities to be undertaken in this project, we believe the USDA is the best source for technical assistance and training. We will explore the possibility of a direct agreement with the USDA. If this is not workable, then we will proceed with Title XII procurement expecting that USDA would be included on a shortlist.

b. Commodities

The commodities financed under this project will be procured by the RTG's Department of Technical and Economic Cooperation.

3. Implementation Schedule

<u>Date</u>	<u>Event</u>
July 1980	PP is submitted to Washington
August 1980	Funding allocated by AID Washington (Assuming funds available)
	Project Agreement submitted to RTG and signed
	Begin procurement process for technical services
	OAE seeks immediate TDY USDA/ASCS assistance for land registration, through DS/AGR arrangements (centrally-funded)
	Area frame technicians selected and go to U.S. for one month training

<u>Date</u>	<u>Event</u>
September, 1980	OAE begins to prepare office space and secure office equipment
November, 1980	Technical services contract signed Team Leader arrives Math-Stat and Area Frame TDYs arrive to assist Area Frame instruction Local hire assistance employed
December, 1980	Begin procurement process for project commodities
Jan.-Feb., 1981	Remainder of resident advisors recruited
Mar.-April, 1981	Complement of resident advisors in Thailand
May, 1981	Commodities arrive in Thailand installed and tested Internal OAE Training Program Organized
June, 1981	Graduate Training Candidates Selected Linear and Computer Programming and Other Specialist TDY Assistance Identified
September, 1981	Graduate Candidates leave for training AIT trainees selected
December, 1981	Special studies identified and candidates selected
September 1982	Evaluation
September 1984	End of Project Evaluation
October, 1984	Project Completed.

VI. Conditions Precedent

This project has been collaboratively developed by the RTG and USAID. Most issues have already been resolved to mutual satisfaction and few remain to delay execution of the project agreement. The following conditions precedent are recommended.

Prior to the first disbursement under the grant, the grantee shall submit in form and substance satisfactory to USAID the following:

- a. A detailed implementation plan and financial plan for use of grant resources.
- b. A plan for the use of long-term advisors under the Project, including scope of work and identification of the OAE Division with which they will be most closely associated.

ANNEXES



# TELEGRAM

ANNEX A

AMERICAN EMBASSY BANGKOK

PROJ: 493-317

**UNCLASSIFIED**

Classification

STATE 038206

REC'D: 12FEB80 1440L

ACTION  
USAID-5

- AMB
- CILARGE ✓
- DCM
- ADCM
- POL
- SA
- ECON
- DAO
- ICA
- PA
- USAID
- JUSMAG
- DEA
- CONS
- VOA
- NCU
- COMAT
- AGR ✓
- EL
- PC
- ADM
- D&I
- CPO
- GSO
- MED
- PER
- SY
- NCOIC
- FADPC
- BRDCO
- GAO
- TSO
- CEG-C
- CEG-R
- INS
- REF
- FBIS
- POUCH
- APD
- CPU
- CHINA
- SONG
- UDORN
- CHURN ✓
- TCU

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PP RUMJQB

Date Received

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TO RUMJQB/AMEMBASSY BANGKOK PRIORITY 4618-4619

**PRIORITY**

INFO RUMVC/AMEMBASSY MANILA PRIORITY 7126

BT

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STATE 038206

AIDAC MANILA FOR MELVILLE

E.O. 12065: N/A

TAGS:

SUBJ ECT: AGRICULTURAL PLANNING (493-0317)

REFS: (A) BANGKOK 05128, (B) STATE 25783,  
(C) MANILA 01977, (D) MANILA 01978

1. RE REF A, PARA 1, PID RECEIVED JANUARY 18 WITH PROJECT COMMITTEE (PC) MEETING HELD JANUARY 25. PC CABLE, REF B, DRAFTED AND CLEARED MONDAY, JANUARY 28; TYPED FINAL AND PROVIDED TO AID CABLE ROOM JANUARY 29. APAC ORIGINALLY SCHEDULED FOR FEBRUARY 4, BUT PER PARA 3, REF B, THIS WAS RESCHEDULED TO FEBRUARY 1 TO PERMIT BOTH LUNDBERG AND VAN HAEFTEN TO PARTICIPATE.

2; ASIA PROJECT ADVISORY COMMITTEE (APAC) REVIEW OF SUBJECT PROJECT FOCUSED ON ISSUES RAISED REF B. USAID RESPONSES, REF A, WERE GENERALLY HELPFUL; HOWEVER, THE FOLLOWING TWO ISSUES REMAIN TO BE RESOLVED TO THE SATISFACTION OF AID/W: (A) THE RELATIONSHIP OF THE SUBJECT PROJECT TO THE PROPOSED ASEAN AGRICULTURAL DEVELOPMENT PLANNING CENTRE, REF B, PARA 2(D); AND (B) FUNDING, REF B, PARA 2(F). ACCORDINGLY, THE PID WAS APPROVED FOR DEVELOPMENT AS AN FY80 SHELF ITEM ASSUMING MORE SATISFACTORY RESOLUTION OF THESE CONCERNS

CONCERNS AS ELABORATED UPON BELOW.

3, BECAUSE ASEAN AGRICULTURAL DEVELOPMENT PLANNING CENTRE (AADPC) AND SUBJECT PROJECT ARE BOTH CURRENTLY BEING DEVELOPED WITH A VIEW TOWARD FY 80 FUNDING AND START-UP DATES, THE ISSUE OF PROJECTED AND POTENTIAL RELATION BETWEEN THE TWO PROJECTS NEEDS FULLER EXPLORATION THAN THAT PROVIDED IN EITHER REF A OR PID DISCUSSION (PAGE 15). APAC EXPRESSED CONCERN THAT IF OAE IS TO ASSUME PRINCIPAL RESPONSIBILITY FOR PLANNING, STAFFING AND SUPERVISING THE OPERATIONS OF AADPC THIS INVOLVEMENT MIGHT WEAKEN OAE'S

DISTRIBUTION	
ACT	IN
D	✓
EXD	✓
O/FIN	✓
O/PHD	✓
O/EST	✓
O/RI/UD	✓
O/RO	✓
O/IRIN	✓
O/IRT	✓
TRG	✓
EMB	✓
C&R	✓

10/MAN

USAID ASSESSMENT OF OAE CAPACITY TO IMPLEMENT BOTH SIMULTANEOUSLY; THE COROLLARY, OF COURSE, WOULD BE THAT WITHOUT THIS PROJECT, THE IMPACT OF THE ASEAN PROJECT WOULD SERIOUSLY DETRACT FROM OAE'S ABILITY TO MEET ITS DOMESTIC RESPONSIBILITIES GENERALLY, AND THEREFORE WOULD PLACE IN QUESTION WHETHER TO PROCEED WITH THE ASEAN PROJECT WITHOUT THIS PROJECT; IN ANY EVENT, GIVEN THE IMPORTANCE OF THE ABOVE, THE APAC CONCLUDED THAT BEFORE DESIGN OF EITHER PROJECT PROCEEDS FURTHER, USAID SHOULD CONVENE MEETING INVOLVING DON MELVILLE, OAE OFFICIALS AND MISSION REPRESENTATIVES TO RESOLVE ISSUE OF OAE RESPONSIBILITIES AND INVOLVEMENT WITH THE TWO PROJECTS. PLEASE ADVISE FOR OUR INFORMATION CONCERNING OUTCOME OF DISCUSSIONS;

4. WITH REGARD TO FUNDING, APAC NOTED THAT PROSPECTS FOR SECTION 103 GRANT FUNDING ARE NOT PROMISING AND THAT THEREFORE RTG SHOULD BE FULLY INFORMED THAT PROJECT IS BEING DEVELOPED AS AN FY 80 SHELF ITEM AND THAT IT CURRENTLY APPEARS NEITHER IN THAILAND FY 80 OYB NOR IN FY 81 CP. IN ADDITION, APAC QUESTIONED LEVEL OF PROPOSED FUNDING AND SUGGESTED THAT, IN VIEW OF AMOUNTS OF TECHNICAL ADVISORY SERVICES ALREADY PROVIDED UNDER EARLIER IOWA STATE PROJECT, DOLS 2.5 TO 3 MILLION MIGHT APPEAR A MORE REASONABLE PLANNED LEVEL FOR AID ASSISTANCE. ALSO, IT WAS NOTED THAT THE PROPOSED RTG SHARE (PID, PAGE 18) IS LESS THAN THE REQUIRED 25 PERCENT. THEREFORE, WITH A VIEW TOWARD REDUCING THE PROJECTED LEVEL OF AID ASSISTANCE FOR THE PROJECT, IT WAS SUGGESTED THAT THE RTG SHARE BE INCREASED TO INCLUDE ALL OR A LARGER SHARE OF ITEMS SUCH AS EQUIPMENT AND SUPPLIES, LOCAL TRAINING, AND CONTINGENCIES, AS WELL AS ALL BAHT COSTS; FURTHERMORE, ON THE ASSUMPTION THAT USAID PREFERRED THAT SUBJECT PROJECT BE EXCLUSIVELY GRANT FUNDED, IT WAS NOTED

THAT PROSPECTS FOR IDENTIFYING AT LEAST AN INITIAL TRANCHE IN FY 80 WOULD BE ENHANCED WERE USAID TO SWITCH SOME OTHER PLANNED SECTION 103 FY 80 OBLIGATION TO LOAN FINANCING. FINALLY, WITH REGARD TO FINANCING THE COSTS OF PROJECT DESIGN, UNALLOTTED SECTION 103 PDS FUNDS ARE VERY LIMITED. THEREFORE, WOULD APPRECIATE FROM USAID A LEAST COST ESTIMATE ON HOW TO PROCEED WITH PROJECT DESIGN.

5. A NUMBER OF LESSER ISSUES WERE ALSO DISCUSSED:

... (A) EXPANDED OAE ROLE. POSITIVE EXPANSION AND REDIRECTION OF OAE ROLE IS JUSTIFICATION FOR PROPOSED PROJECT INCLUDING PROVISION OF SUBSTANTIAL AMOUNTS OF TECHNICAL ADVISORY SERVICES BEYOND THOSE PROVIDED UNDER EARLIER IOWA STATE PROJECT. ACCORDINGLY, PP SHOULD ADDRESS QUESTION OF EFFECTIVENESS OF OAE IN ITS NEW ROLE AND SOME PROVISION SHOULD BE MADE WITHIN THE PROPOSED PROJECT FOR ASSESSING OAE'S EFFECTIVENESS.

... (B) OAE INSTITUTIONAL RELATIONSHIPS. ALTHOUGH REF A INDICATES THAT BUREAU OF BUDGET ACTIONS WILL REINFORCE OBJECTIVES OF PID, EXTENT TO WHICH BOB PLANS TO RELINQUISH CONTROL OVER PROGRAMMING TO OAE REMAINS UNCLEAR. ACCORDINGLY, PP SHOULD ADDRESS ISSUE OF ORGANIZATIONAL INTERRELATIONSHIPS

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...(C) BENEFICIARIES; ALTHOUGH IT IS NOT ESSENTIAL IN A PROJECT SUCH AS THIS TO DEMONSTRATE AN IMMEDIATE DIRECT LINKAGE BETWEEN PROPOSED INPUTS AND BENEFITS ACCRUING TO THE RURAL POOR MAJORITY, PP SHOULD MORE FULLY DISCUSS HOW IMPROVED OAE CAPACITY FOR PLANNING AND FOR PROJECT IDENTIFICATION, DEVELOPMENT, AND EVALUATION CAN BE EXPECTED TO HAVE AN ULTIMATE POSITIVE IMPACT ON RTG RURAL PROJECTS. AS WELL AS UTILIZATION OF THE RURAL DEVELOPMENT FUND TO BE INCLUDED IN USAID'S PLANNING AND PROVINCIAL DEVELOPMENT PROJECT.

...(D) ANOTHER MATTER NOT DISCUSSED DIRECTLY BY THE APAC IS THAT SUBJECT PROJECT IS OFFSPRING OF A SUCCESSION OF PROJECTS WHICH HAVE BEEN UNDERWAY SINCE 1952. BUREAU URGES USAID TO SET REALISTIC TARGETS FOR THIS PROJECT WHICH CAN BE ACHIEVED WITHIN THIS PROJECT'S LIFESPAN.

6. TO CONCLUDE, IN VIEW OF APAC CONCERNS EXPRESSED ABOVE, USAID SHOULD CONVENE MEETING INVOLVING DON MELVILLE AND RTG OFFICIALS AS SOON AS POSSIBLE IN ORDER TO DECIDE ISSUES RAISED IN PARA 2 ABOVE. ASSUMING SATISFACTORY RESOLUTION OF THESE QUESTIONS, PID IS APPROVED FOR DEVELOPMENT OF PP AS AN FY 80 SHELF ITEM WITH USAID TO APPROVE THE PROJECT, VANCE  
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PROJECT DESIGN SUMMARY  
LOGICAL FRAMEWORK

Project Title & Number: Agricultural Planning 493-0317

Life of Project:  
From FY 80 to FY 84  
Total U. S. Funding \$3.2 Mill.  
Date Prepared: July 1980

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
<p>Program or Sector Goal: The broader objective to which this project contributes:</p> <p>Development of policies and programs of benefit to low income farm households.</p>	<p>Measures of Goal Achievement:</p> <ul style="list-style-type: none"> <li>- National policy reflects OAE efforts</li> <li>- Projects designed and implemented for low income farm households</li> <li>- Systematic approach to Ag. problem solution.</li> </ul>	<ul style="list-style-type: none"> <li>- Income surveys</li> <li>- Policy Directives</li> <li>- Five Year Plan emphasis</li> </ul>	<p>Assumptions for achieving goal targets:</p> <ul style="list-style-type: none"> <li>- Leadership capability by OAE achieved</li> <li>- Government commitment to agricultural &amp; rural development maintained</li> </ul>
<p>Project Purpose:</p> <p>Strengthen the RTG's Office of Agricultural Economics in carrying out its policy advisory, problem identification and analysis, planning, data management and integrated project preparation functions.</p>	<p>Conditions that will indicate purpose has been achieved: End of project status.</p> <ul style="list-style-type: none"> <li>- Institutionalized planning and analysis</li> <li>- System of coop between OAE and MOAC</li> <li>- Analysis planning related to low income farm households</li> <li>- OAE Data system operating in policy context</li> </ul>	<ul style="list-style-type: none"> <li>- Examination of integrated projects</li> <li>- Planning organization - formal and informal</li> <li>- ASF examination</li> <li>- Policy directives</li> </ul>	<p>Assumptions for achieving purpose:</p> <ul style="list-style-type: none"> <li>- Working relationship with NESDF and BOE</li> <li>- Acceptance by other ministries, department and some agencies, such as NAC and RTSD</li> </ul>
<p>Outputs:</p> <ul style="list-style-type: none"> <li>- Decision calendar procedure installed</li> <li>- Procedures for project development installed</li> <li>- OAE staff trained</li> <li>- In-service training established</li> <li>- ASF farm survey</li> </ul>	<p>Magnitude of Outputs:</p> <ul style="list-style-type: none"> <li>- Integrated data system</li> <li>- 100-150 people trained</li> <li>- National and sub-national planning mechanism</li> </ul>	<ul style="list-style-type: none"> <li>- Organization Charts</li> <li>- Analytical &amp; Research Reports</li> <li>- Policy statements</li> <li>- Training course reports</li> </ul>	<p>Assumptions for achieving outputs:</p> <ul style="list-style-type: none"> <li>- Government &amp; project personnel/salary structure conducive to supply of needed staff</li> <li>- Participants placed in a timely fashion</li> </ul>
<p>Inputs: \$3,200,000</p> <p>Technical Assistance</p> <p>Training</p> <p>Commodities</p>	<p>Implementation Target (Type and Quantity)</p> <p>TA Long term 168 PM</p> <p>Short term 30 PM</p> <p>See Financial Plan</p> <p>Annex _____</p>	<p>OYB</p> <p>Project Agreement</p>	<p>Assumptions for providing inputs:</p> <ul style="list-style-type: none"> <li>- Grant funds available in 1980</li> <li>- Appropriate TA staff and participants available on a timely basis.</li> </ul>

APP 25: UN 3: 118 3  
(TM 3:19) ANNEX B

Objectives and Principal Components of the ASEAN Agricultural Development Planning Centre

Objectives of the Project

General Objectives:

- a. To strengthen the agricultural development planning capability of all ASEAN member nations.
- b. To apply the acquired expertise in agricultural development planning on the regional (in-country), national and international levels.

Specific Objectives:

- a. To establish an agricultural development planning centre such that regional participants could have access to expertise in agricultural development planning.
- b. To provide a mechanism for mobilizing in a coordinated manner, the best talents in agricultural development planning.
- c. To serve as a regional data bank for requisite agricultural development planning informations.
- d. To provide consultancy services to the ASEAN governments in the field of agricultural development planning.
- e. To train government personnel in agricultural development planning strategies and methodologies.
- f. To construct and verify regional (in-country) planning models for selected pilot areas in each country.
- g. To undertake studies on ASEAN agricultural policies with the end view of coordinated or harmonized ASEAN policies.

Centre

The Project will also necessitate the construction of a Centre in Thailand to centralise, operations and training facilities. The concept of a

Centre to catalyze, and later on augment the network system that will informally but necessarily follow the establishment of planning, research and training links has been discussed by the member countries and they have agreed that this is the most practicable means of achieving project goals.

### Project Components

The project has been conceived and will be implemented in three components. These components have been designed to reflect the purpose of the project that is, to increase the number of trained personnel in the respective national agricultural planning offices of the member countries of ASEAN, to formulate and test a model for regional (in-country) planning in each member country which can be integrated into the national plan and to establish the mechanism for joint regional action in basic agricultural policy issues.

The first component, which has been labelled the MACRO component, is concerned with the strengthening of planning capabilities at the national level. The second, or MICRO component, aims to develop and test various planning methodologies and construct models for agricultural planning at the regional (in-country) level. The second component will be limited to three pilot areas in each of the five ASEAN member countries.

The third component, called the PLANNING AND RESEARCH component, calls for the strengthening of the statistical data base and analytical capabilities of the Centre in order to make it an effective resource base for COFAF regional policy decisions. The overall goal of this component is the eventual coordination and harmonization of ASEAN agricultural policies.

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 FP RUEHC RUMVC  
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 FM AMEMBASSY BANGKOK  
 TO RUEHC/SECSTATE WASHDC PRIORITY 3829  
 INFO RUMVC/AMEMBASSY MANILA 1845  
 BT  
 UNCLAS BANGKOK 27292

CLASS: UNCLASSIFIED  
 CHRGE: AID 6/30/80  
 APPRV: ADIR:RSQUEENER  
 DRFTD: ADIR:RSQUEENER:R  
 CLEAR: 1.O/PPD:BODELL  
 2.PPC:DCATON  
 DISTR: AME DCM CHRON  
 USAID

AIDAC

MANILA FOR MELVILLE, OA/R

EO 12065: N/A

SUBJ: RELATIONSHIP BETWEEN PROPOSED AGRICULTURAL PLANNING PROJECT (APP/493-0317) AND ASEAN AGRICULTURAL DEVELOPMENT PLANNING CENTER PROJECT (ADPC)

REF: (A) BANGKOK 08355, (B) BANGKOK 08104,  
 -- (C) STATE 038205

1. IN APPROVING PID FOR APP, APAC EXPRESSED CONCERN ABOUT CAPABILITY OF OFFICE OF AGRICULTURAL ECONOMICS (OAE), RTG MINISTRY OF AGRICULTURE AND COOPERATIVES, TO IMPLEMENT BILATERAL APP AND ASEAN ADPC PROJECTS SIMULTANEOUSLY (REF (C), PARA 3). FURTHER, APAC REQUESTED MORE THOROUGH ASSESSMENT OF RELATIONSHIP BETWEEN OAE'S RESPONSIBILITY/STAFF COMMITMENT TOWARDS BOTH PROJECTS AND POSSIBLE ISSUES ASSOCIATED WITH THIS JOINT RESPONSIBILITY.
2. USAID PROVIDED INTERIM ASSESSMENT PER REF (A). PROJECT APPRAISAL/DESIGN TEAM FOR APP WAS ASKED TO MAKE THEIR OWN ASSESSMENT OF THESE RELATIONSHIPS, AND HAS CONCLUDED THAT TWO PROJECTS ARE LIKELY TO BE COMPLEMENTARY AND MUTUALLY REINFORCING. PURPOSE THIS CABLE IS TO PROVIDE FURTHER DISCUSSION OF PROBABLE INTERACTION BETWEEN APP AND ADPC, TO SUPPLEMENT INFORMATION ALREADY SUPPLIED REF (A).
3. OAE RESPONSIBILITY FOR ADPC, PER REF (B), PARA 1B-- UNTIL ADPC ACHIEVES FULLY AUTONOMOUS STATUS, WITH RECURRENT BUDGET ASSURED BY ASEAN CONTRIBUTIONS AND FOREIGN DONOR RESOURCES, OAE HAS ACCEPTED AT LEAST PARTIAL RESPONSIBILITY FOR SUPPORT TO FLEDGLING ADPC, IMPLYING BUDGET, STAFF, AND PROBABLY INFORMAL SUPERVISION. SOME OF STAFF CAPACITY OF OAE WILL UNDENIABLY BE DIVERTED TO ADPC OPERATIONS. HOWEVER, ON BASIS OF JOINT ANALYSIS BY USAID/OAE, SUCH DIVERSION WILL BE KEPT TO MODEST LEVEL.
4. CURRENT PLANS CALL FOR OAE STAFF PERSON (DIVISION HEAD) TO BE NAMED FULL TIME DIRECTOR OF ADPC AND FOR OAE TO SUPPLY 3-4 SENIOR STAFF ON PART TIME BASIS (NO MORE THAN THREE MONTHS EACH) TO CONDUCT TRAINING AND PARTICIPATE IN PLANNING/RESEARCH ACTIVITIES OF ADPC. TOTAL REDUCTION IN SENIOR OAE STAFF CAPACITY DUE TO ADPC INVOLVEMENT LIKELY TO BE NO MORE THAN TWO PERSON YEARS PER YEAR. OAE STAFF WILL

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ALSO BE INVITED TO GIVE LECTURES AS PART OF M.S. PROGRAM OFFERED BY KASETSART UNIVERSITY (KU) IN COLLABORATION WITH ADPC. HOWEVER, SINCE SAME STAFF HAVE SERVED AS GUEST LECTURERS AT KU FOR SOME TIME, THIS WILL NOT BE NET REDUCTION IN OAE STAFF CAPACITY. BUTCHER REPORT DISCUSSES DISTRIBUTION OF STAFF RESPONSIBILITIES AMONG OAF, KU AND OTHER ASEAN COUNTRIES MORE SPECIFICALLY. ON PAGE 8, HE NOTES THAT KU FACULTY WILL HANDLE ROUGHLY TWO-THIRDS OF TEACHING LOAD IN M.S. COURSE. ON PAGE 11, HE NOTES THAT ONE-HALF OF ADPC CORE PROFESSIONAL STAFF WILL COME FROM OTHER ASEAN COUNTRIES AND EACH OF THE FOUR OTHER COUNTRIES WILL BE ASKED TO SUPPLY ONE VISITING STAFF MEMBER FOR SIX MONTHS EACH YEAR.

5. REF (A), PARA 2B, DESCRIBES EXPECTED INCREASES IN OAE STAFF THROUGH ADDITION OF TEN RETURNING PH.D'S FINANCED BY USAID UNDER EARLIER AGRICULTURAL ECONOMICS PROJECT AND THROUGH BUDGET INCREASES AND ALLOCATION OF NEW POSITIONS, WHERE OAE SEEMS TO ENJOY COMPARATIVELY FAVORED POSITION WITHIN RTG SYSTEM. OVERALL, BOTH USAID AND PP DESIGN TEAM ARE CONVINCED THAT OAE'S RESPONSIBILITIES FOR ADPC WILL NOT UNDERMINE ITS ABILITY TO CARRY OUT APP. TO THE CONTRARY, APP IS PRECISELY DIRECTED TOWARDS FURTHER UPGRADING OAE INSTITUTIONAL CAPABILITY, PRIMARILY QUALITATIVE, BUT WITH A SMALL COMPONENT OF PH.D TRAINING, TAKING INTO CONSIDERATION THE FULL RANGE OF OAE RESPONSIBILITIES INCLUDING ADPC.

6. THERE ARE WAYS IN WHICH ADPC MAY ACTUALLY BE HELPFUL TO OBJECTIVES OF APP. FOR EXAMPLE, OAE MAY BE ABLE TO RECRUIT SOME OF THAI STUDENTS ENROLLED IN ADPC M.S. PROGRAM, CURRENT OAE STAFF MIGHT RECEIVE FURTHER UPGRADING THROUGH PARTICIPATION IN ADPC TRAINING COURSES, THAI STUDENTS ENROLLED IN SUCH COURSES WOULD BE ENCOURAGED TO PURSUE RESEARCH ON TOPICS/ISSUES OF IMPORTANCE TO OAE AND MOAC IN GENERAL, AND ADPC PLANNING AND RESEARCH STAFF WILL PROBABLY EXPLORE POLICY QUESTIONS RELATING TO INTRA-REGIONAL TRADE WHICH ARE STRONG INTEREST TO OAE AND RTG.

7. PERHAPS MORE IMPORTANT THAN ALL CONSIDERATIONS DISCUSSED ABOVE, WITHOUT PROJECT LIKE APP, RELEVANCE AND EVENTUAL IMPACT OF ADPC ARE MUCH MORE PROBLEMATIC. DESIGN OF ADPC DRAWS HEAVILY ON RECENT DEVELOPMENT OF OAE CAPABILITY IN QUANTITATIVE ECONOMIC ANALYSIS, AND THEREFORE ADPC LIKELY TO HAVE SAME BIAS TOWARDS QUANTITATIVE METHODS. APP WILL ASSIST OAE TO BROADEN RANGE OF ACTIVI-

TIES, TO EXERT MORE INFLUENCE ON POLICY FORMULATION AND IMPLEMENTATION PARTICULARLY THROUGH EMPHASIS ON DEVELOPING SOUND PROJECTS ALIGNED WITH OVERALL POLICY. QUOTING FROM VARIOUS SECTIONS OF EUTCHER REPORT: IT APPEARS THAT ADPC DOES NOT INTEND TO BECOME INVOLVED IN POLICY IMPLEMENTATION AND PROJECT MANAGEMENT ISSUES. ADMITTEDLY, THESE ARE AREAS IN WHICH MOST DEVELOPING COUNTRIES NEED CONSIDERABLE IMPROVEMENT (PAGE 3). OAE HAS GOOD FOUNDATION IN QUANTITATIVE ECONOMIC ANALYSIS. HOWEVER, SOME ADDITIONAL STRENGTHENING OF THEIR POLICY APPLICATION WOULD BE HELPFUL FOR THE (ADPC) TRAINING PROJECT (PAGE 4). FINALLY, HE CONCLUDES (PAGE 13): ADDITIONAL ASSISTANCE TO OAE IN FORM OF AGRICULTURAL PLANNING PROJECT WOULD ENHANCE ADPC'S CAPABILITY FOR GIVING TRAINEES INSIDE GLIMPSE OF STRONG POLICY ANALYSIS PROGRAM. ALSO, EXISTENCE OF ADPC WOULD PROVIDE MEANS FOR IMMEDIATELY TRANSFERRING APPROACHES DEVELOPED IN APP TO KEY PERSONNEL FROM OTHER ASEAN COUNTRIES UNQUOTE.

E. IN SUM, USAID CONCLUDES THAT COMPETITION BETWEEN ADPC AND APP FOR OAE STAFF RESOURCES WILL BE MINIMAL AND THAT MUTUALLY REINFORCING, COMPLEMENTARY ASPECTS OF TWO PROJECTS ARE MUCH MORE COMPELLING THAN ANY POSSIBLE CONFLICTS. FINALLY, EMPHASIS OF APP ON GOING BEYOND QUANTITATIVE METHODS TO ENCOMPASS POLICY ANALYSIS AND IMPLEMENTATION, PROJECT DEVELOPMENT AND EVALUATION, ETC. WILL GREATLY STRENGTHEN OAE CAPABILITY TO IMBUE ADPC PROGRAM WITH BALANCED RESULTS-ORIENTED AGRICULTURAL PLANNING PROGRAM.

G. PLEASE ADVISE IF FURTHER CLARIFICATION DESIRED.

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ANNEX D

AGRICULTURAL ECONOMICS ACT OF B.E. 2522

BHUMIBOL ADULYADEJ, REX.

Given on the 25th Day of February, B.E. 2522

Being the 34th Year of the Present Reign

His Majesty King Bhumibol Adulyadej is graciously pleased to proclaim that:

Whereas it is expedient to have a law on agricultural economics;

THEREFORE, be it enacted by the King, by and with the advice and consent of the National Legislative Assembly acting as the National Assembly as follows:

Section 1. This Act is called the "Agricultural Economics Act of B.E. 2522".

Section 2. This Act shall come into force as from the date of its publication in the Government Gazette.

Section 3. In this Act,

"Agricultural Economics" means classification description and priority establishment of economic problems in the part concerning agricultural and action to solve such problems;

"Agricultural Development" means intensification of efforts in and increase of agricultural production, improvement of investment, production and marketing conditions as well as prices of farm products, farm income, nutrition and other welfare activities of farmers including the related operations hereto;

"Agricultural Economic Area" means area of agricultural production inclusive of livestock production and tree farming promoted in accord with the national marketing and agricultural economic statuses, taking into account the similarity of major factors, e.g. climate, water sources, crops and livestock to be raised, types of farming, principal sources of farm income;

"Agriculture Policy" means direction for agriculture development with definite objective, target and period of operation;

"Committee" means the Committee on Agriculture and Cooperative Development Policy and Planning;

"Minister" means the Minister who have charge and control of the execution of this Act.

Section 4. There shall be a committee called the "Committee on Agriculture and Cooperative Development Policy and Planning" composed of the Minister of Agriculture and Cooperatives as Chairman, Under Secretary of Agriculture and Cooperatives as Vice Chairman and Under Secretary of Commerce, Under Secretary of Industry, Secretary-General of the Office of the National Economic and Social Development Committee, Director of the Bureau of the Budget, Secretary-General of the Office of National Statistics, one deputy under secretary of agriculture and cooperatives, Secretary-General of the Office of Land Reform for Agriculture as committee members and not more than eight other members appointed by the Cabinet whereof four from qualified persons and four from representatives of farmer groups and agricultural cooperatives.

The Secretary-General, Office of Agricultural Economics, shall serve as member and secretary.

Section 5. The Committee shall have the power and duty:

(1) to consider formulating agriculture policy and agriculture and cooperative development plans in agreement with the national economic and social development plan,

(2) to consider designating the agricultural economics areas,

(3) to follow up and accelerate implementation of the agriculture and cooperative development plans of work units under the direction of the Ministry of Agriculture and Cooperatives,

(4) to consider attacking problems and obstacles including constraints that hinder implementation of the agriculture policy and agriculture development plans,

(5) to propose recommendations and opinions to the Cabinet on agriculture and cooperative development planning policy and measure,

(6) to consider and offer opinions to the Cabinet in regard to improvement and relief of the national agricultural economics situations, and

(7) to consider any matter concerning agriculture or cooperative as assigned by the Cabinet.

In performing the above-stated duties the Committee may authorize the Office of Agricultural Economics to take action or prepare proposals for submittal to the Committee for consideration to act further.

Section 6. Term of office of members of the Committee appointed by the Cabinet shall be three years. The terminated members may be re-elected.

Section 7. In addition to termination upon expiration of term of office per Section 6 the member appointed by the Cabinet shall be terminated from office upon:

- (1) death,
- (2) resignation,
- (3) being a bankrupt,
- (4) being the person incapable or as if incapable of managing his own affairs,
- (5) being a convict by the final decision of the court or a legal order to imprisonment except for the case of crime being committed with carelessness or minor offense, or
- (6) being terminated by the Cabinet.

In case the office of a member shall become vacant before expiration of his term of office, the vacancy may be filled by a new member appointed by the Cabinet, and such successor member shall hold office for the remainder of the term of office of his predecessor.

If the Cabinet shall appoint an additional member while the members already appointed still hold office, the new member shall hold office for the remainder of the term of office of such already-appointed members.

Section 8. At the Committee meeting if the Chairman of the Committee is absent or is not at the meeting, the Vice Chairman shall preside over the meeting. In case the Chairman and Vice Chairman of the Committee are absent or are not at the meeting, the committee members present elect one member to preside over the meeting.

No less than half the total number of committee members present shall constitute a quorum.

The meeting decision shall be pursuant to majority of the votes. If the votes casted are equal, the Chairman of the meeting shall cast one decisive vote.

Section 9. The Office of Agricultural Economics shall be established to perform the following duties;

(1) analyze the agriculture policy and agriculture and cooperative development plans for submission to the Committee;

(2) study and analyze agricultural production planning and sources of cultivation and livestock production according to climatic conditions, types of farming, major income of farmers and internal market demands and report to the Committee for consideration to designate the agricultural economics areas;

(3) study and analyze the formulation of marketing and transport system and development of farm products markets in an efficient manner as well as analyze the prices of and demand for farm products;

(4) study and analyze sources of agricultural resources, analyze utilization of resources as well as study and analyze production economics and formulate crop cultivation and livestock production systems in an efficient manner;

(5) compile statistical information of all kinds-- crop and livestock production, agricultural production situations, farm income and expenses, farmers indebtedness conditions, market situations of farm products and other agricultural economics information necessary for analysis of agriculture policy and agriculture and cooperative plans and publication of statistics papers concerning agricultural economic for distribution and publicity of agricultural statistics information;

(6) analyze and evaluate outcome of investment made in agricultural projects including follow-up and evaluation of success and progress of the projects and operating plans of work units under the direction of the Ministry of Agriculture and Cooperatives as well as propose to the Committee recommendations on guidelines for boiling down the problems and obstacles which require urgent action;

(7) analyze other sector of economic development including international agricultural economics conditions required for formulation of agriculture and cooperative development plans;

(8) develop register in regard to agricultural enterprises, by categories, types or groups of each sector;

(9) coordinate work with the various, related government agencies and state enterprises in establishing agriculture policy and agriculture and cooperative development plans, as well as maintain contact with the Office of the National Economic and Social Development Committee; and

(10) perform any other action specified by law as function of the committee or of the Office of Agricultural Economics.

Section 10. In performing duties under this Act the Committee is authorized:

(1) To require agencies and state enterprises under the direction of the Ministry of Agriculture and Cooperatives to submit agriculture and cooperative programs and plans, inclusive of technical and financial details as well as statistics and information necessary for the study of the national agricultural economics situations, and to submit agriculture and cooperative development programs and projects for which foreign assistance is requested including information necessary for the study of the national agricultural economics conditions prior to submission to the Office of the National Economic and Social Development Committee for consideration;

(2) to require agencies and state enterprises per (1) of submit factual information required for assessment of success, progress on obstacles of the various projects and programs; and

(3) to establish farmers registration in regard to agricultural enterprises.

Section 11. The Office of Agricultural Economics shall have the power and duty to deal with statistics according to the law on statistics in respect of agricultural economics and agriculture development.

Section 12. The Secretary-General, Office of Agricultural Economics, shall be charged with duty to supervise and look after the general affairs of the Office of Agricultural Economics.

Section 13. The Committee or the Office of Agricultural Economics may invite any person to render factual information, explanation, opinions or recommendations.

Section 14. The Committee may appoint a subcommittee to make consideration or take any action as assigned by the Committee.

With regard to meeting of the subcommittee per the first paragraph the provisions of Section 8 shall be enforced mutatis mutandis.

Section 15. The Minister shall have the power to announce designation of an agricultural economics area in accord with the decision of the Committee.

Within the agricultural economics area under the first paragraph the Minister may promulgate a measure to be taken in promoting agriculture and providing assistance for agriculture development inclusive of assistance in terms of price guarantee or price support for agricultural products and organization of cooperative or such other agricultural institution in order to elevate farm income.

Section 16. The Minister of Agriculture and Cooperatives shall have charge and control of the executive of this Act.

Countersigned by:

S. Hotrakit

Deputy Prime Minister

Translated by Khun Anan, EXO, 9-26-79

ANNEX E

INITIAL ENVIRONMENTAL EXAMINATION

Project Location : Thailand

Project Title : Agricultural Planning Project

Funding : FY 81 \$3.0 million Grant

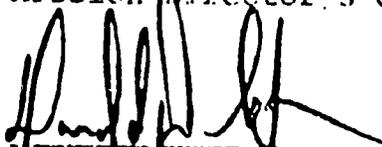
Life of Project : 4 Years

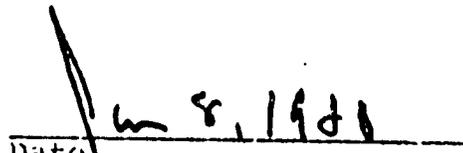
IEE Prepared by : Jane Stanley  
Asia Bureau Environmental  
Officer

Date : November 21, 1979

Environmental Action Recommended: Negative Determination

Mission Director's Concurrence:

  
Donald D. Cohen  
Director

  
Date Nov 8, 1980

Assistant Administrator's Decision:

Approve: \_\_\_\_\_

Disapproved: \_\_\_\_\_

Date: \_\_\_\_\_

ANNEX F

List of People and Organizations Contacted, Meeting Held, and Material Reviewed

I. People and Organizations Contracted

A. Briefing Session, ASIA/TECH, AID/W

Douglas Caton	- AID
Tom Cooper	- AID
Herbert H. Fullerton	- Utah State University, Economics
William Carlson	- PID, Team Leader
Robert D. Parr	- USDA, ESCS
Margrerite C. Burk	- USDA, OICD, Nutrition Economics
Roberta VAN Hoeften	- PID, Member
Richard Suttor	- PID, Member
Garrett Argento	- AID

B. MOAC, Director-Generals and Heads of Planning and Budget Divisions

Office of Agricultural Economics:

Dr. Somnuk Sriplung, Secretary-General

Cooperative Promotion Department:

Colonel Surin Cholpraserd, Director-General

Mr. Peerarat Aungwarat, Planning Division

Royal Irrigation Department:

Capt. Sunthorn Ruanglek, Director-General

Mr. Suthem Tingsabhat, Director, Coordination & Budget Div.

Mr. Chamroon, Deputy Director, Coordination & Budget Div.

Office of Agricultural Land Reform:

Mr. Charin Athayodhin, Secretary-General

Mr. Pitipong Pungbun Na Ayudhya, Director, Land Reform  
Management Division

Mr. Pachern Yimniam, Director, Fund Service Division

Mr. Lap Tantasri, Deputy Secretary-General

Mr. Danai Sooksri, Secretary of the Office

Dr. Suthiporn Jeeraphan, Director, Technical and  
Planning Division

Department of Cooperative Auditing:

Mr. Sumruay Uden-suth, Director-General  
Mr. Anan Chamnankit, Secretary to the Department

Department of Fisheries:

Commander Swang Charoenpol, RTN, Director-General  
Mr. Ariya Sidthimunka, Deputy Director-General  
Mr. Sumon Swegwan, Chief, Economics & Planning Sub-Division

Department of Agriculture:

Mr. Phaderm Titatan, Director-General  
Mr. Chern Chinnupatam, Planning Division  
Mr. Sommart Thammanuwong, Planning Division

Department of Agricultural Extension:

Mr. Yookti Sarikaphuti, Director-General  
Mr. Vorasak Pakdee, Director, Planning & Special Projects  
Division  
Mr. Chareon Sukhanantapong, Chief, planning and Special  
Project Division

Department of Livestock Development:

Dr. Tim Bhannasiri, Director-General  
Dr. Vises Prasert, International Coordinator  
Ms. Lamai Chartiniyom, Chief of Accountancy  
Mr. Theera Nukroysin, Director, Division of Finance

Department of Land Development:

Dr. Bancherd Balangkura, Director-General  
Mr. Samarn Panichayapong, Soil Survey Division  
Ms. Promchit, Land Classification Division  
Mr. Sitilarp Vasuvat, Director, Land Planning and  
Policy Division  
Mr. Sompong Pongkasem, Director, Finance Division  
Dr. Wance Samphantharak, Finance Division

Royal Forest Department:

Mr. Thanom Premrasmi, Director-General  
Dr. Sathi Chaipetch, Director, Planning Division

C. Other RTG Agencies

1. Bureau of the Budget

Mrs. Prachitt Kamphu, Director, Division of Budget Analysis 5  
Mr. Melburn M. Coombs, Leader, Public Administration  
Services Team  
Mr. Stuart Stienberg, Systems Specialist, PAS Team

2. NESDB

Dr. Rungruang Isarangkura, Director, Agricultural  
Planning Sector, Economic Project Division  
Mr. Vithya Siripongse, Director, Regional Planning Div.

3. National Research Council

Dr. Sanga Sabhasri, Secretary-General  
Mr. Suvit Vibulsresth, Director, Remote Sensing Division

4. Royal Thai Survey Department (Military)

Col. Chitra  
Lt. Col. Supee  
Lt. Col. Kaw

5. National Statistical Office

Ms. Isaraporn, Thailand I/O Joint Project

6. Bank for Agriculture and Agricultural Cooperatives

Mr. Prapai Vongmata, Agricultural Loan Appraisal

7. Bank of Thailand

Mr. Wirote Manopimoke, Agricultural Research Division

D. OAE Division Directors

Mr. Narong Chuprakob, Director, Division of Policy and  
Agricultural Development Plan  
Mr. Thavach Leelasuwanich, Director, Division of Economic  
Project and Program Evaluation  
Mr. Apichai Kulawanich, Director, Division of Implementation Plan  
Dr. Supote Dechates, Director, Division of Agricultural  
Economics Research  
Mr. Klun Chaisang, Director, Agricultural Statistics Center

E. DTEC

Mr. Kittipan Kanjanapipatkul, Director, AID Assistance Program

F. USAID/Thailand

Donald Cohen, Mission  
Robert Queener, Director, Office of Rural Development  
Mrs. Thongkorn Hiranraks, O/RD

G. IBRD

William Panton, Project Officer

II. List of Publications, Reports and Materials Reviewed

1. Dr. Thalerng's Letter dated January 12, 1979 which attached the "outline of the Proposed Expansion of the DAE Agricultural Sector Analysis.Capability".
2. Project Identification Document on "Agricultural Planning Project", USAID/Thailand, December 1, 1979.
3. Project Paper Standard Format.
4. The Translation of the duties and responsibilities of each Division under the OAE.
5. The translation of the "Goals and Development Guidelines for Elevating Income of Farmers in the North. eastern Region", July 1979.
6. OAE, "Thailand, Agricultural Economic Production Zones Project", Summary and Conclusion.
7. OAE, "Agricultural Economic Zonal Planning and Implementing Project". (Paper proposed to IBRD for financial assistance).
8. Terms of Reference requested for a Budget Analyst Advisor to work with the Implementation Planning Division of OAE.
9. Terms of Reference requested for Social Accounting Consultant to work with the Agricultural Economics Research Division, OAE.
10. The translation of the Agricultural Product Price Support Policy.
11. The translation of the first meeting agenda of the Committee on Accelerated Agricultural Productivity, May 28, 1978 .
12. U.S. Assistance to Thai Agriculture and the Role of each Department under the MOAC, published in American Chamber of Commerce, Vol. 11 No. 6 November - December 1979.
13. Meeting Agenda for the Committee on Policy and Agricultural Development and Cooperatives Plan, No. 1-4 for CY 79 and No. 1-4 for CY 80.
14. Budget Appropriation for FY 1981 (Guideline).
15. A review of the Work of the Division of Agricultural Economics with Suggestions for Widening and Strengthening its Work, Preliminary Draft by Willard W. Cochrane.

16. Translation of the Justification Attached to a Request for Reorganization and Staffing of OAE, MOAC.
17. Project Proposal on Analysis of Agricultural Sector, Submitted by Iowa State University to USAID for Extending and Expanding the Scope of Work and Implementation of Project Activities Initiated under Contract No. AID/CM/SA-C-73-19, Thailand.
18. DAE, Agro-Economic Zones for Agricultural Extension and Development.
19. DAE, "National Crop Model of Thailand", prepared by Dr. Arthur Stoecker and Kanok Khatikarn, August B.E. 2519.
20. DAE/IOWA, "Agricultural Sector Analysis in Thailand", Series 1-2, 5-6, 11-16.
21. Thongchai Petcharatana, "Agricultural Demand Analysis" presented to the Seminar on Agricultural Development Planning in Thailand, Bangkok, 29-30 July 1975.
22. Annual Report, "Agricultural Sector Analysis in Thailand" 1974, 1976.
23. The Regional Agricultural Development Planning in Thailand, the Setting and Overview, March 1975.
24. The Agricultural Sector Analysis in Thailand: 1978 Evaluation of the Five-Year Report, Bangkok, Thailand, October 1978.
25. Project Paper on "Remote Sensing for Agriculture", April 5, 1979.
26. Project Proposal on "Asean Agricultural Development Planning Center", Phuket, Thailand, 17-25 May 1979.
27. Contract No. 274-900-70023 Between the Department of Technical and Economic Cooperation of the Royal Thai Government and Public Administration Service, April 10, 1980.
28. Asia Projects Advisory Committee (APAC): Issues Paper, February 1, 1980.
29. Cable Traffic re the Agricultural Planning Project (493-0317) BANGKOK 05128.

30. Cable Traffic re ASEAN Agricultural Development Planning Center  
MANILA 01977, STATE 023475, BANGKOK 4068
31. Project Evaluation - Agricultural Economics Project  
(493-11-190-180.4), October, 1978.
32. Sumon Swegwan - Brief on Fisheries Situation in Thailand,  
Fisheries Department, MOAC, Bangkok, 1980
33. World Bank - Thailand: Appraisal of the National Agricultural  
Extension Project, Report No. 1256a-TH, March 10, 1977.
34. Chung C., M. Cox, J. English and I.C. Porter - Selected Issues  
in Rural Development - Working Paper No. 4, Report No. 2059-TH,  
September 1, 1978.
35. World Bank - Thailand: Appraisal of the Northeast Thailand  
Rural Development Project, Report No. 721-TH, December 31, 1975.
36. Narongchai Akrasnee, et al - Thailand's Industrial Sector:  
The Changing Role of Policies, Background Paper for Report No.  
2059-TH, September 1, 1978.
37. World Bank - Institutional Aspects of Development in Thailand,  
Background Paper No. 8 for Report No. 2059-TH, September 1, 1978.
38. United States General Accounting Office - Training and Related  
Efforts Needed to Improve Financial Management in the Third  
World, Report No. ID-79-46, September 20, 1979.
39. Crop-area Estimates from Landsat; Transition from Research and  
Development to timely Results. Report from IEE Transactions  
on Geoscience and Remote Sensing, Vol. GE-18, No. 2 April 1980.

Draft Project Authorization

Country : Kingdom of Thailand  
Project : Agricultural Planning  
Number : 493-0317

1. Pursuant to Section 106 of the Foreign Assistance Act of 1961, as amended, I hereby authorize the Agricultural Planning Project for the Kingdom of Thailand involving planned obligations of not to exceed Three Million Two Hundred Thousand United States Dollars (\$3,200,000) in grant funds over a four year period from date of authorization to help in financing foreign exchange and local currency costs for the project.

2. The project consists of support for strengthening the Royal Thai Government's Office of Agricultural Economics in its policy advisory, planning and project preparation functions.

The project will fund technical assistance advisors, short and long term training, and a limited amount of program-relevant commodities.

3. The Project Agreement which may be negotiated and executed by the officer to whom such authority is delegated in accordance with A.I.D. regulations and Delegations of Authority shall be subject to the following essential terms and covenants and major conditions, together with such other terms and conditions as AID may deem appropriate.

a. Source and Origin of Goods and Services

Goods and services, except for ocean shipping, financed by A.I.D. under the project shall have their source and origin in the Cooperating Country or in the United States except as A.I.D. may otherwise agree in writing. Ocean shipping financed by A.I.D. under the project shall, except as A.I.D. may otherwise agree in writing, be financed only on flag vessels of the United States.

b. Blanket Waiver to Code 941

The following waiver to A.I.D. regulations is hereby approved:

On the basis that certain services and training will most effectively be procured in other developing countries particularly Asia Regional International Institutions, goods (except vehicles) and services financed under the project may be procured from countries included in A.I.D. Geographic Code 941.

## ANNEX H

### A Modeling Strategy for Linking Linear Programming Models of Agricultural Production with I/O Activities Modeling Economic Outcomes in the Non-Farm Sector

#### Introduction

Estimation of input-output transaction matrices with intended spatial and sectoral detail, using the method now envisioned, will be a difficult research task. Present plans call for an estimation strategy based upon a sample of firms from each sector, supplemented by secondary data as they may be available. Clearly, this can be done, but results will be subject to large survey errors, including both sampling and non-sampling errors unless very large amounts of resources, including high quality TA inputs, are committed. Large survey errors are due to the relatively small sub-populations for which estimates must be provided, while the relatively sensitive information which must be obtained from firms in the non-farm sector increases problems with non-sampling error.

The kinds of information sought from this effort could be produced more expediently from existing linear program models and without the necessity of constructing full input-output tables. This might be done by adding variables to the LP models which define employment and earnings in agricultural processing sectors and in sectors supplying agricultural inputs. By adding equations defining off-farm employment and earnings in agriculture-related business in terms of agricultural production variables, the major non-farm employment and income impacts could be captured rather simply. Indirect effects on employment and income via induced activity in other parts of a provincial economy would not be estimates, but experience with these applications in similar circumstances suggests that this is not a severe omission. Such a procedure would require estimation of employment and earnings per unit of farm inputs purchased and per unit of farm output processed, but this is much simpler and less costly than estimation of full input-output tables by the methods now envisioned.

Should estimation of full changwat-level input-output tables proceed, consideration should be given to modifications in work plans to improve the chances for a successful, cost-effective research program. Such modification should follow along these lines. First, a more highly aggregated sectoring plan than the one now envisioned would be required. Sectors making significant direct purchases from or sales to agriculture should be separate and identifiable, but remaining sectors should be treated in a very aggregative fashion. If carefully researched, this would result in virtually no loss of significant information. Second, more extensive use of secondary data should be considered,

especially the regionally and sectorally disaggregated information from the national accounts, and the national input-output table, supplemented as required with an engineering-economic approach to estimation. The Agro-industries Branch also is charged with estimating production costs in agricultural processing plants. An engineering-economic approach might be an effective way to meet this need as well as some of the requirement for the input-output tables. Third, consistency with the national input-output study should be maintained. If a consistent sectoral plan were specified, work should proceed so that it is possible to reconstruct from the changwat tables to the nation by aggregation. Finally, if work on the regional input-output is to proceed successfully, the assistance of TA (TDY basis unless otherwise available) with experience in estimating subnational input-output transaction tables in developing countries is highly desirable. Simple exposure and work with regional and social accounting in developing countries is not sufficient experience for addressing this TDY need.

While there is not a great deal of precedent for linking linear programming modeling of output in one sector with input-output modeling of output and other variables in other sectors of a regional economy, no insurmountable technical problems are foreseen. Clearly, there is no single correct formulation, but adherence to a few principles would add to the certainty that useful results would be obtained. First, models should be formulated in such a way that solutions can be interpreted as predictive of the results of private decision-making in Thailand's economy, given the economic and physical environment posited in the model. Most existing linear programming models of agricultural production are set up this way. The most straightforward way to preserve this feature in a linked input-output and linear programming instruction is to append the input-output structure to an existing LP model of agriculture as a set of accounting equations which "define" income, employment, and outputs in on-farm sectors, but which do not constrain the agricultural model solution in any real sense. Further, the non-farm income, employment and output variables would then have zero coefficients in the objective function.

## Modeling Strategy

The task of accomplishing an input/output-linear programming linkage can be approached in a variety of ways. The approach used here adopts a level of detail in social accounting similar to that in the prototype effort now in progress within CAE, and the input structure is similar to that in Clive Bell and Peter Hazel's November, 1978 paper, "Measuring the Indirect Effects of an Agricultural Investment Project on Its Surrounding Region". The approach differs from OAE's prototype effort in important ways, however. It envisions beginning with a complete, self-contained linear programming model of agricultural production, and appending an input-output structure to it as a set of "accounting" relationships. These serve to determine some major associated variables in the non-farm and total economy, but they do not constrain the solution to the agricultural model in any way. The self-contained linear programming model of agricultural production described below is one which minimizes production costs subject to minimum demands for agricultural products, but other formulations could also be used. Capital formation and government demands are treated as exogenous variables, as are exports of all non-farm products.

The discussion below presumes that we begin with "free-standing" linear programming and input-output models. We assume that the input-output model has been constructed using the convention of "producer's value" accounting, and that the complete input-output structure models output of the agricultural sector as well the non-farm sector.

Certain features of the input-output structure are either assumed, or will be created through preliminary operations on the input-output model prior to linking with the linear programming model. We assume that the input-output structure has at least one processing sector for each distinct agricultural output modeled in the linear programming structure. If any processing sector has direct requirements for two outputs from agriculture, we assume that at least one other input-output activity also uses at least one of the agricultural outputs directly. If the direct use of 2 agricultural inputs by a single processing sector is the result of aggregating 2 "single raw product input" sectors, then the 2 should be disaggregated if possible.

If more than one input-output activity produces the same output (for example, small rice mills and large rice mills), we combine the 2 commodity accounting equations in the input-output model into a single equation by simply adding the appropriate equations from the set,

(I-A)  $X = C$ . However, the 2 activities need not be aggregated, and the mix of output from the 2 can be controlled by adding balance constraints (which may be readily altered if one wishes to examine the implications of changing the mix). Thus, for example, if ML is value of output of large rice mills and MS is value of output by small rice mills, and if we wish to require that at least (or exactly)  $2/3$  of milled rice output come from small mills, we add the constraint  $(-1/3) MS + (2/3) ML \leq 0$  (or  $= 0$ ).

Finally, when actually merging the input-output model and the linear programming model, the commodity value accounting equations in the input-output model corresponding to raw agricultural products are dropped and new ones are developed, and an identical number of agricultural output variables are dropped from the input-output model and their function is taken over by the agricultural production variables in the linear programming model.

Certain new or replacement coefficients and constraints must be specified to accomplish the linkage. First, coefficients expressing agriculture's purchases from remaining input-output activities per unit of agricultural activities must be developed. For example, if P1 and P2 are 2 paddy producing activities in the linear programming model,  $f_{p1}$  and  $f_{p2}$  are fertilizer requirements per unit of these activities, and  $p_f$  is the producer's price of fertilizer used in specifying value flows in the input-output table, then  $p_f f_{p1} P1 + p_f f_{p2} P2$  defines producer's value of fertilizer purchased from a fertilizer producing activity. Here,  $p_f$ ,  $f_{p1}$  and  $f_{p2}$  are treated as constants for purposes of model construction, while P1 and P2 are treated as variables. If the economy under study contains an endogenous fertilizer producing sector, and purchases are from that sector, the above expression becomes a component of intermediate demand for the fertilizer producing sector's output. If no endogenous sector is present, it becomes a component of import demand. More precisely speaking, e.g.  $p_f f_{p1}$  and  $p_f f_{p2}$  become components of the coefficients of P1 and P2 in an import demand equation.

Trade and transportation margins on fertilizer purchases per unit of activities P1 and P2 must also be determined. In practice, these will be combined with all other margins associated with input use by activities P1 and P2 to define purchases from indigenous wholesale and retail trade and from transportation services sectors and/or from the import sector, depending upon where those margins are earned. Thus, if  $M_{p1}$  and  $M_{p2}$  are total margins earned by indigenous wholesale and retail trade sectors per unit of P1 and P2, respectively, then  $M_{p1} P1 + M_{p2} P2$  defines a component of interindustry demand for the trade sector's output. Trade margins earned outside the economy under study per unit of activities P1 and P2 appear as components of import coefficients on those variables. Demands for transportation services by agriculture are determined analogously.

Total payments to various groups of primary factor owners by agriculture must also be stated in terms of the activities appearing in the linear programming model of agricultural production. Here it is necessary

to determine total primary factor payments to each class of earners per unit of the agricultural producing activities. Among these components are both farm wages as well as farm proprietors' income, including value of home consumption. Capital consumption allowances should probably not be shown as payments to the class of earners owning the capital items, though they may be if consistent definitions of savings and total income are employed.

This presents some conceptual difficulties that are inherent in nearly all input-output work when income generation is modeled. In fact, there are income payments which are properly determined as a residual after paying cash costs (i.e., proprietor income), and these components are not proportional to output, either on an aggregate basis or in terms of individual activities. However, applied input-output analysis generally states these components as a linear function of the production activities as an expedient because more realistic approaches involve high costs. The same approach is taken here, and for the same reasons.

As replacements for the agricultural commodity accounting equations in the input-output model, equations are introduced which require that the amount of each agricultural product produced be equal to the amount used. For example, suppose that  $Y_1$  and  $Y_2$  are yields of paddy per unit of 2 paddy producing activities P1 and P2, and that paddy may be either milled in large or small mills (ML or MS), or exported as paddy rice through the variable XP. Also, let  $Q_L$  and  $Q_S$  be the amounts of paddy purchased from farms per unit of ML and MS, respectively. The desired equation is then  $Y_1 P1 + Y_2 P2 = Q_L ML + Q_S MS + XP$ . In this instance, the equation can be defined in terms of physical units of paddy if desired. Monetary units are not necessary. More generally, monetary units will be required, and the demands will also include household consumption. Here, XP (and other variables like it) should have no direct upper bounds placed on them. However, it will be noted later that both export of the raw product (paddy) and of the processed product (the output of ML and MS) will be variables with no direct upper bounds on them. If nothing more is done there will be an indeterminacy as to whether exports should take the form of raw or processed product. To resolve this, balance equations are added to specify the relative mix of the two. For example, if XR is value of exports of milled rice, one might specify that for each unit of XP, solutions must contain at least 25 units of XR. This leads to the constraint  $25 XP - XR \leq 0$ . As will be seen later, this has the effect of placing no direct limit on export of rice and rice products, as desired, but at the same time it controls the mix of processed and unprocessed product in any exports that do occur.

One final preliminary needs to be discussed before considering the formal structure of the IO-LP model. The treatment of total income, disposable income, savings, taxes, and private consumption adopted here follows closely that in Bell and Hazell. Except for consumption, all of these variables appear explicitly in the model that follows, as opposed to Bell and Hazell's treatment where all but total income appear only

implicitly. However, as in Bell and Hazell, consumption functions are used to eliminate the consumption variables in this presentation, and for this reason the consumption, savings, personal tax and total income relationships used in the model will be considered before proceeding.

Three classes of income earners are identified. Each consumes four classes of consumer goods and imports, and the consumption functions are linear functions of income, equations 1 and 2 (Table 1 defines all variables appearing here

$$(1) D_{ij}^k = a_{ij}^{kd} + a_{ij}^{kh} Y_j^d \quad ; \quad k = c, p, s, o; j = 1, 2, 3:$$

$$(2) M_j = g_j^d + g_j^h Y_j^d \quad ; \quad j = 1, 2, 3$$

and later, while table 2 defines all constants.) Taxes of each group are a linear function of total income, while savings are proportional to disposable income, equations 3 and 4. Finally, disposable income of each group of consumers

$$(3) T_i = t_i^d + t_i^h Y_i \quad ; \quad i = 1, 2, 3$$

$$(4) S_i = - \left[ \sum_k \sum_j a_{ij}^{kd} + g_j^d \right] + \left[ 1 - \sum_k \sum_j a_{ij}^{kh} - g_j^h \right] Y_j^d \quad ; \quad j = 1, 2, 3$$

is equal to its total income minus tax paid, equation 5.

$$(5) Y_i^d = Y_i - T_i \quad ; \quad i = 1, 2, 3$$

The model itself can now be stated. The objective function, equation 6, is to minimize production cost associated with agricultural production variables ( $C_j$ ) and related activities in the linear programming model of agricultural production such as, labor hiring, capital borrowing, etc. ( $Z_j$ ).

$$(6) \text{ Minimize } \sum_i^m c_i C_i + \sum_i^n z_i Z_i$$

This is subject to a number of constraints. The first set, equation 7, are resource constraints on agricultural production.

$$(7) \sum_j^m a_{ij}^c C_j + \sum_j^n a_{ij}^z Z_j \leq b_i \quad ; \quad i = 1, 2, \dots, u$$

Minimum production requirements are specified for each commodity, equation. Here, the summation is over all values of the index  $j$ .

$$(8) \sum_{\substack{j \text{ in} \\ \text{group } g}} y_j C_j \geq d_g \quad g = 1, 2, \dots, s$$

corresponding to activities that produce a given commodity (the one numbered  $g$ ). Equations 6, 7, and 8, plus the requirement that all variables be non-negative, constitute the self-contained linear programming model of agricultural production. The following are added to append the input-output structure;

value of  
 First is equation 9, a set of requirements that production be equal to value of use for each of the agricultural products produced.

$$(9) \sum_{\substack{j \text{ in} \\ \text{group } g}} a_{gj}^{cc} C_j - \sum_{\substack{j \text{ in} \\ \text{group } g}} a_{gj}^{cp} O_j^p - \sum_j a_{gj}^{ch} Y_j^d - X_g^c \\ = \sum_j a_{gj}^{cd} ; g = 1, 2, \dots, s$$

The next set of constraints, equation 10, are a set of commodity (value) balance equations for processed agricultural products. Both the levels of

$$(10) - \sum_{\substack{j \text{ in} \\ \text{group } g}} a_{gj}^{pc} C_j - \sum_j a_{gj}^{pz} Z_j + \sum_{\substack{j \text{ in} \\ \text{group } v}} (1 - a_{gj}^{pp}) O_j^p \\ - \sum_{\substack{j \text{ in} \\ \text{group } g}} a_{gj}^{pp} O_j^p \\ - \sum_j a_{gj}^{ps} O_j^s - \sum_j a_{gj}^{po} O_j^o - \sum_j a_{gj}^{ph} Y_j^d - X_g^p \\ = \sum_j a_{gj}^{pd} + K_g^p ; g = 1, 2, \dots, s$$

exports of processed agricultural products  $X_g^p$ , and of unprocessed products,  $X_g^c$ , are to have no direct bounds on them. It is intended that the only real bounds on agricultural production be those in equations 7 and 8. However, balance relationships are later set between  $X_g^p$  and  $X_g^c$  as well as among the members of the set of activities  $O_j$  which produce the same processed agricultural product as an output.

Next is a set of commodity balance equations for goods purchased by agriculture from the non-farm sector, equation 11.

$$(11) - \sum_j a_{ij}^{sc} C_j - \sum_j a_{ij}^{sz} Z_j - \sum_j a_{ij}^{sp} O_j^p + (1 - a_{ii}^{ss}) O_i^s \\ - \sum_j a_{ij}^{ss} O_j^s \\ - \sum_j a_{ij}^{so} O_j^o - \sum_j a_{ij}^{sh} Y_j^d = \sum_j a_{ij}^{sd} + K_i^s + X_i^s ; \\ i = 1, 2, \dots, q$$

Here, exports are exogenous and fixed.

The final set of commodity balance equations is that for other non-farm products, equation (12). Again, exports are fixed in this case.

$$(12) \quad - \sum_j^k a_{ij}^{op} O_j^p - \sum_j^q a_{ij}^{os} O_j^s + (1 - a_{ii}^{oo}) O_i^o - \sum_{j \neq i} a_{ij}^{oo} O_j^o \\ - \sum_j^3 a_{ij}^{oh} Y_j^d = \sum_j^3 a_{ij}^{od} + K_1^o + X_1^o; \quad i = 1, 2, \dots, r.$$

Next are 3 equations defining total pre-tax value of primary factor payments made to 3 classes of households, equation 13.

$$(13) \quad - \sum_j^m a_{ij}^{hc} C_j - \sum_j^n a_{ij}^{hz} Z_j - \sum_j^k a_{ij}^{hp} O_j^p - \sum_j^q a_{ij}^{hs} O_j^s \\ - \sum_j^r a_{ij}^{ho} O_j^o \\ + (1 - a_{ii}^{hh}) Y_i^d - \sum_{j \neq i}^3 a_{jj}^{hh} Y_j^d = R_i; \quad i = 1, 2, 3$$

Three other sets of equations that have been discussed earlier in another context are also part of the constraint structure. They are equations 3, 4, and 5; the definitions of personal taxes, savings and disposable income, respectively. The definition of total savings is added as equation (14).

$$(14) \quad S - S_1 - S_2 - S_3 = 0$$

Total business taxes are defined by equation (15), and total

$$(15) \quad - \sum_j^m t_j^c C_j - \sum_j^n t_j^z Z_j - \sum_j^k t_j^p O_j^p - \sum_j^q t_j^s O_j^s \\ - \sum_j^r t_j^o O_j^o + T_b = 0$$

taxes are defined by (16).

$$(16) \quad - T_1 - T_2 - T_3 - T_b + T = 0$$

Total imports are defined by equation (17).

$$(17) \quad - \sum_j^m g_j^c C_j - \sum_j^n g_j^z Z_j - \sum_j^k g_j^p O_j^p - \sum_j^q g_j^s O_j^s \\ - \sum_j^r g_j^o O_j^o \\ - \sum_j^3 g_j^h Y_j^d + M = \sum_j^3 g_j^d$$

Lastly, 2 sets of balance relationships are included in the constraint set. The first, equation (18), specifies proportionality between exports of raw and processed forms of each agricultural product. The second set establishes proportionality relationships

$$(18) \quad r_g^p x_g^p - r_g^c x_g^c = 0; \quad g = 1, 2, \dots, s.$$

between levels of different activities that produce the same processed product, equation (19). Here  $O_j^p$  is a "base" activity in a set of

$$(19) \quad v_{jg}^p O_{jg}^p - v_{jg+f}^p O_{jg+f}^p = 0; \quad f = 1, 2, \dots, N_g:$$

$$g = 1, 2, \dots, s$$

activities that produce the same processed agricultural product and  $O_{jg+f}^p$  is only other activity that processes the same product. Therefore, for each set of  $N_g$  activities that make a given processed agricultural product, there are  $N_g-1$  constraints of the type shown in (19).

The model described above could be modified in a variety of ways. More or fewer household groups can be defined, depending on data availability and objectives. Consumption functions may be specified without intercepts if necessary. More variables can be made explicit in the model if desired. On the other hand, though not all flows are explicit, a relatively complete social accounting matrix can be readily prepared from any solution by making use of equations that have been used to eliminate variables. Many equivalent and somewhat simpler formulations can be constructed by using any of the equality constraints appearing in the model to eliminate variables.

Table 1. Definitions of Variables Appearing in the  
Input/Output-linear Programming Model

<u>Symbol</u>	<u>Description</u>
$c$	
$D_{ij}^c$	Value of consumption of the i-th unprocessed agricultural product by the j-th consumer group.
$p$	
$D_{ij}^p$	Value of consumption of the i-th processed agricultural product by the j-th consumer group.
$s$	
$D_{ij}^s$	Value of consumption of the i-th product purchased by agriculture by the j-th consumer group.
$o$	
$D_{ij}^o$	Value of consumption of the i-th other non-farm commodity by the j-th consumer group.
$M_j$	Value of imports for consumption by the j-th consumer group.
$Y_j^c$	Personal disposable income of the j-th consumer group.
$Y_j$	Total income of the j-th consumer group.
$S_i$	Savings of the i-th consumer group.
$T_i$	Taxes paid by the i-th consumer group.
$C_i$	Level of the i-th agricultural production variable.
$Z_i$	Level of the i-th variable in the linear programming production model other than a production variable.
$O_j^p$	Value of output of the j-th agricultural processing activity.
$x_g^c$	Value of exports of the g-th unprocessed agricultural commodity.
$O_j^s$	Value of output of the j-th product purchased by agriculture.
$XP_g$	Value of exports of the g-th processed agricultural commodity.
$S$	Total savings.
$T_b$	Total business taxes.
$T$	Total taxes paid in the economy.
$M$	Total value of imports into the economy.

Table 2. Definitions of Constants Appearing in  
the Input/Output-linear Programming  
Model

<u>Symbol</u>	<u>Description</u>
$a_{ij}^{cd}$	Autonomous consumption of the i-th unprocessed agricultural product by consumer group j.
$a_{ij}^{pd}$	Autonomous consumption of the i-th processed agricultural product by consumer group j.
$a_{ij}^{sd}$	Autonomous consumption of the i-th product purchased by agriculture by consumer group j.
$a_{ij}^{od}$	Autonomous consumption of the i-th other non-farm commodity by consumer group j.
$a_{ij}^{ch}$	Marginal purchase of i-th unprocessed agricultural product per unit of disposal income earned by consumer group j.
$a_{ij}^{ph}$	Marginal purchase of i-th processed agricultural product per unit of disposable income earned by consumer group j.
$a_{ij}^{sh}$	Marginal purchase of i-th product purchased by agriculture per unit of disposable income earned by consumer group j.
$a_{ij}^{oh}$	Marginal purchase of i-th other non-farm commodity per unit of disposable income earned by consumer group j.
$g_j^d$	Autonomous imports for consumption by consumer group j.
$g_j^h$	Marginal purchase of imports for consumption per unit of disposable income earned by consumer group j.
$t_j^d$	Tax paid by consumer group j that is unrelated to income.
$t_j^h$	Marginal tax paid per unit of disposable income earned by consumer group j.
$c_i$	Contribution to production cost per unit of activity $C_i$ .
$z_i$	Contribution to production cost per unit of activity $Z_i$ .
$a_{ij}^c$	i-th resource requirement per unit of activity $C_j$ .
$a_{ij}^z$	i-th resource requirement per unit of activity $Z_j$ .
$b_i$	Amount of i-th resource available.
$y_j$	Commodity production per unit of activity $C_j$ .
$d_g$	Minimum production of commodity g.

<u>Symbol</u>	<u>Description</u>
$a_{gj}^{cc}$	Value of production of commodity $g$ produced per unit of activity $C_j$ .
$a_{gj}^{cp}$	Value of commodity $g$ required per unit of activity $O_j^p$ .
$a_{gj}^{pc}$	Value of processed agricultural product $g$ purchased per unit of $C_j$ .
$a_{gj}^{pz}$	Value of processed agricultural product $g$ purchased per unit of $Z_j$ .
$a_{gj}^{pp}$	Value of processed agricultural product $g$ purchased per unit of $O_j^p$ .
$a_{gj}^{ps}$	Value of processed agricultural product $g$ purchased per unit of $O_j^s$ .
$a_{gj}^{po}$	Value of processed agricultural product $g$ purchased per unit of $O_j^o$ .
$K_g^p$	Value of processed agricultural product $g$ used in capital formation.
$a_{ij}^{sc}$	Value of $i$ -th input used in agriculture bought per unit of $C_j$ .
$a_{ij}^{sz}$	Value of $i$ -th input used in agriculture bought per unit of $Z_j$ .
$a_{ij}^{sp}$	Value of $i$ -th input used in agriculture bought per unit of $O_j^p$ .
$a_{ij}^{ss}$	Value of $i$ -th input used in agriculture bought per unit of $O_j^s$ .
$a_{ij}^{so}$	Value of $i$ -th input used in agriculture bought per unit of $O_j^o$ .
$K_i^s$	Value of $i$ -th input used in agriculture used in capital formation.
$X_i^s$	Value of exports of the $i$ -th input used in agriculture.
$a_{ij}^{op}$	Value of $i$ -th other non-farm product bought per unit of $O_j^p$ .
$a_{ij}^{os}$	Value of $i$ -th other non-farm product bought per unit of $O_j^s$ .
$a_{ij}^{oo}$	Value of $i$ -th other non-farm product bought per unit of $O_j^o$ .

<u>Symbol</u>	<u>Description</u>
$K_i^O$	Value of $i$ -th other non-farm product used in capital formation.
$X_i^O$	Value of $i$ -th other non-farm product exported.
$a_{ij}^{hc}$	Income payments to household group $i$ per unit of $C_j$ .
$a_{ij}^{hz}$	Income payments to household group $i$ per unit of $Z_j$ .
$a_{ij}^{hp}$	Income payments to household group $i$ per unit of $O_j^P$ .
$a_{ij}^{hs}$	Income payments to household group $i$ per unit of $O_j^S$ .
$a_{ij}^{ho}$	Income payments to household group $i$ per unit of $O_j^O$ .
$R_i$	Income payments to household group $i$ from outside the economy.
$t_j^C$	Tax paid per unit of $C_j$ .
$t_j^Z$	Tax paid per unit of $Z_j$ .
$t_j^P$	Tax paid per unit of $O_j^P$ .
$t_j^S$	Tax paid per unit of $O_j^S$ .
$t_j^O$	Tax paid per unit of $O_j^O$ .
$e_j^C$	Value of imports per unit of $C_j$ .
$e_j^Z$	Value of imports per unit of $Z_j$ .
$g_j^P$	Value of imports per unit of $O_j^P$ .
$g_j^S$	Value of imports per unit of $O_j^S$ .
$g_j^O$	Value of imports per unit of $O_j^O$ .
$r_g^P, r_g^C$	Constants used to established proportionality constraints between $X_g^P$ and $X_g^C$ .
$v_{jg}$	Constant used to establish proportionality constraints among activities producing the same processed agricultural product.

## ANNEX 1

### New Data Requirements for OAE

The Secretary-General of OAE has very recently undertaken the task of supplying export crop statistics at periodic intervals in geographical detail, a task which is quite beyond the scope of OAE's present resource. Initial indications are that such disaggregated data are required to monitor crop conditions and thus achieve the best intelligence for converting Thailand's sometimes bountiful crop resources into foreign exchange. The amount of resources required to obtain acceptable statistical reliability is very large, probably larger than currently anticipated by OAE and their data users. A complete census would not serve this purpose. Rather a well-designed small sample survey is required to provide the degree of accuracy and reliability desired. Reliable national estimates are not obtained by aggregating sub-district level "estimates" to district, province, zone, region and nation levels. The appropriate process is just the reverse. When ASF is utilized correctly, accurate and reliable estimates can be achieved by selecting a random sample from the ASF stratified by farming intensities of land segments within "paper strata." The sample should be replicated to achieve acceptable sampling efficiency and flexibility for survey coverage and/or to respond to changing levels of survey resources. The replicated technique consists of drawing samples or replications, where  $r \geq 2$ , of size  $k$  from  $n$  units in the population using the same selection procedures for each replication. The  $r.k = m$ , where  $n$  is the total sample size.

The overall ASF survey sample size should be of sufficient size to provide estimates for crops of interest with coefficients of variation (CV) at, say, 5 percent at agro-economic zone level (a CV level most often used for major crops in developed countries). At this sampling rate, 2 CV of 1-2 percent at the national level is usually achieved. With this national survey result, disaggregation to smaller sub-regions, if required, might be done by having knowledgeable MOAC personnel working regularly in these areas make subjective estimates of crop area and production and "condition of crop". Typically, these are expressed in percentages relative to a full crop at 100 percent. With such repeated observations over time, these condition reports could be used to develop regression estimates of current crop condition and crop production for the given area of estimate. In all cases, the larger area estimate must be the total developed by the ASF sample survey. OAE may find that, in time, the estimates at province and/or district or sub-district level have only limited value relative to their costs.

## CHECKLIST OF STATUTORY CRITERIA

## PROJECT CHECKLIST

A. GENERAL CRITERIA FOR PROJECT

1. FY 79 App. Unnumbered;  
FAA Sec. 653(b); Sec.  
634A.

- (a) Describe how Com )  
mittees on Appropri- )  
ation of Senate and )  
House have been or )  
will be notified )  
concerning the pro- )  
ject; )  
(b) Is assistance within )  
(Operational Year Bud- )  
get) country or interna- )  
tional organization al- )  
location reported to )  
Congress (or not more )  
than \$1 million over )  
that figure)? )

2. FAA Sec. 611(a)(1). Prior to  
obligation in excess of  
\$100,000, will there be (a)  
engineering, financial, and  
other plans necessary to carry  
out the assistance and (b)  
a reasonably firm estimate of  
the cost to the United States  
of the assistance?

3. FAA Sec. 611(a)(2). If fur-  
ther legislative action is  
required within recipient  
country, what is basis for  
reasonable expectation that  
such action will be com-  
pleted in time to permit  
orderly accomplishment of  
purpose of the assistance?

4. FAA Sec. 611(b); FY 79 App.  
Act, Sec. 101. If for water  
or water-related land re-  
source construction, has  
the project met the stan-  
dards and criteria as per  
the Principles and stan-  
dards for Planning Water

A. GENERAL CRITERIA FOR PROJECT

Congressional Notification  
will be presented as necessary.

- (a) N/A  
(b) Yes

No further legislative action  
is required.

N/A

and Related Land Revenue as  
dated October 25, 1971?

5. FAA Sec. 611(e). If project is capital assistance (e.g., construction), and all U.S. assistance for it will exceed \$1 million, has Mission Director certified and Regional Assistant Administrator taken into consideration the country's capability effectively to maintain and utilize the project? N/A
6. FAA Sec. 209. Is project susceptible of execution as part of a regional or multilateral project? If so why is project not so executed? Information and conclusion whether assistance will encourage regional development programs. No
7. FAA Sec. 601(a). Information and conclusions whether project will encourage efforts of the country to: (a) increase the flow of international trade; (b) foster private initiative and competition; (c) encourage development and use of cooperatives, credit unions, and savings and loan associations; (d) discourage monopolistic practices; (e) improve technical efficiency of industry, agriculture, and commerce; and (f) strengthen free labor unions. The project should have no significant short term effect on any of these items. However, in the long term agricultural production and possible produce export will be increased as a result of this project.
8. FAA Sec. 601(b). Information and conclusion on how project will encourage U.S. private trade and investment abroad and how it will encourage private U.S. participation in foreign assistance programs (including use of private trade channels and the services of U.S. private enterprise). Will have no effect on this.

production and the use of appropriate technology, spreading investment out from cities to small towns and rural areas, and insuring wide participation of the poor in the benefits of development on a sustained basis, using the appropriate U.S. institutions; (ii) help develop cooperatives, especially by technical assistance, to assist rural and urban poor to help themselves toward a better life, and otherwise encourage democratic private and local governmental institutions; (iii) support the self-help efforts of developing countries; (iv) promote the participation of women in the national economies of developing countries and the improvement of women's status; and (v) utilize and encourage regional cooperation by developing countries?

ii. Cooperatives will not be a part of this project.

iii. This project aims to increase the planning capabilities of the DAE to carry out the policy analysis, planning, project preparation and to improve the agricultural data base.

iv. Project strives to increase role and number of women professionals in DAE.

v. N/A except for U.S. and third country training.

b. FAA Sec. 103, 103A, 104, 105, 106, 107. Is assistance being made available: (include only applicable paragraph: e.g., 1, 2, etc., which corresponds to source of funds used. If more than one fund source is used for project, include relevant paragraph for each fund source).

(1)(103) for agriculture, rural development or nutrition; if so extent to which activity is specifically designed to increase productivity and income of rural poor; (103A) if for agricultural research, is full account taken of needs of small farmers;

(2)(104) for population planning under 104(b) or health under 104(c); if so, extent to which activity emphasizes low-cost, integrated delivery systems for

(1)(103) The increased planning and analysis capabilities of the DAE, will result in projects and activities that will increase the agricultural productivity and income of the rural poor.

9. FAA Sec. 612(b); Sec. 616(h). Describe steps taken to assure that, to the maximum extent possible, the country is contributing local currencies to meet the cost of contractual and other services, and foreign currencies owned by the United States are utilized to meet the cost of contractual and other services.

The Royal Thai Government contribution to this project will exceed 25 per cent. There are no U.S. owned local currencies available for the project.

10. FAA Sec. 612(d). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release?

No

11. FAA Sec. 601(c). Will the project utilize competitive selection procedures for the awarding of contracts, except where applicable procurement rules allow otherwise?

The project will utilize standard RTC procurement regulations which require at least three offers for small (less than \$25,000) sub-projects and formal bidding for large sub-projects.

12. FY 79 App. Act Sec. 608. If assistance is for the production of any commodity for export, is the commodity likely to be in surplus on world markets at the time the resulting productive capacity becomes operative, and is such assistance likely to cause substantial injury to U.S. producers of the same, similar or competing commodity?

This project is not for this purpose.

#### B. FUNDING CRITERIA FOR PROJECT

##### 1. Development Assistance Project Criteria

a. FAA Sec. 102(b); 111; 113; 231 (c). Extent to which a activity will: (1) effectively involve the poor in development, by extending access to economy at local level, in increasing labor intensive

#### FUNDING CRITERIA FOR PROJECT

1. The expected outcome of this project is to prepare the DAE to develop projects which will effectively involve the poor in development and the other activities of this section.

health, nutrition, and family planning for the poorest people with particular attention to the needs of mothers and young children, using paramedical and auxiliary medical personnel, clinics, and health posts, commercial distribution systems and other modes of community research;

(3)(105) for education, public administration, or human resources development; if so, extent to which activity strengthens nonformal education, makes formal education more relevant, especially for rural families and urban poor, or strengthens management capability of institutions enabling the poor to participate in development;

(4)(106) for technical assistance, energy, research, reconstruction, and selected development problems; if so, extent activity is:

(i) technical cooperation and development, especially with U.S. private and voluntary, or regional and international development, organizations;

(ii) to help alleviate energy problem;

(iii) research into, and evaluation of, economic development processes and techniques;

(iv) reconstruction after natural or manmade disaster;

(v) for special development problem, and to enable proper utilization of earlier U.S. infrastructure, etc., assistance;

(vi) for program of urban development, especially small labor-intensive enterprises, marketing systems, and financial or other institutions to help urban poor participate in economic and social development.

(5)(107) to appropriate effort

Yes, all required technology is

placed on use of appropriate technology?

suited to the rural Northeast of Thailand.

c. FAA Sec. 110(a). Will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the assistance is to be furnished (or has the latter cost-sharing requirement been waived under Sec. 124(d) for a "relatively least-developed" country)?

Yes, per the PP financial plan.

d. FAA Sec. 110(b). Will grant capital assistance be disbursed for project over more than 3 years? If no, has justification satisfactory to Congress been made, and efforts for other financing or its recipient country "relatively least developed?"

No major capital assistance is anticipated.

e. FAA Sec. 281(b). Does the extent to which program recognizes the particular needs, desires, and capacities of the people of the country; utilizes the country's intellectual development; and supports civic education and training in skills required for effective participation in governmental and political processes essential to self-government.

This project reflects the desires of DAE to acquire improved skills in data methods and economic analytical processes. This will be accomplished through both long term and short term training (both formal and informal). The component of this project were specifically requested by the RTG. As this project is designed to improve the planning capabilities of the DAE self government capacity of the RTG will be increased.

f. FAA Sec. 122(b). Does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities and self-sustaining economic growth?

Yes

2. Development Assistance Project Criteria (Loans Only)

(a) FAA Sec. 122(b). Information and conclusion on capacity

N/A

of the country to repay the loan, including reasonableness of repayment prospects.

- (b) FAA Sec. 620(d). If assistance is for any productive enterprise which will compete in the U.S. with U.S. enterprise, is there an agreement by the recipient country to prevent export to the U.S. of more than 20% of the enterprise's annual production during the life of the loan?

N/A

4. Project Criteria Solely for Economic Support Fund

- (a) FAA Sec. 531(a). Will this assistance support or promote economic or political stability? To the extent possible, does it reflect the policy directions of section 102?

N/A

- (b) FAA Sec. 533. Will assistance under this chapter be used for military, or paramilitary activities?

N/A

BEST AVAILABLE DOCUMENT

B. Other resident team members (family of four) arrive Jan 1981  
 (Agricultural Statistician - Economics-Social Science Analysis)

<u>Item</u>	<u>1980</u> <u>(2 mos)</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u> <u>(10 mos)</u>	<u>Total</u>
1. Salary (GS 14/5 equiv.)	7,016	42,095	45,042	48,195	42,973	185,321
2. Post Diff. 10%	702	4,210	4,504	4,820	4,297	18,533
3. Fringe Ben. 20%	1,403	8,419	9,008	9,639	8,595	37,064
4. Def. Base Act Insr. .8.75% (1+2)	675	4,052	4,335	4,639	4,136	17,837
5. Post Assignment						
a. Travel	5,300	-	-	-	6,800	12,100
b. Shipment HHE	4,400	-	-	-	4,800	9,200
c. Storage HHE	167	1,000	1,000	1,000	833	4,000
d. Car Shipment	2,200	-	-	-	2,200	4,400
6. Quarters Allow. and Supp. Post Allow.	292,800	189,200	208,120	228,932	251,825	1,170,877
US	\$ 14,190	7,060	8,006	9,047	10,591	48,894
RTG	\$ 450	2,400	2,400	2,400	2,000	9,650
7. Educational Allow.	3,700	5,500	1,000	6,600	6,050	27,850
8. Home Leave and R&R Travel	-	1,400	6,800	1,680	-	9,880
9. Medical and Passports	800	-	-	-	-	800
10. Contractor's OH 60%	4,210	25,257	27,025	33,895	25,784	116,171
US Total (one TA)	\$ 44,763	98,993	111,720	119,515	117,059	492,050
US Total (two ½ TA)	111,908	247,482	279,300	298,786	292,648	1,230,124
RTG Total @20=\$1.00	1,125	6,000	6,000	6,000	6,000	24,125
Total US					\$	1,787,656
Total RTG					\$	33,775

C. TDY Personnel to be used over life of Project

	Statisticians (Agric.)			Computer Systems	Econ-Social Science Analysis	Total
	Math	Survey	ASF			
Trips	4	4	4	2	16	30
Months	4	4	4	2	16	30
Salary <sup>1/</sup> (4661/mo)	\$18,644	\$18,644	\$18,644	\$ 9,322	\$ 74,576	\$139,830
Travel (2530/trip)	\$10,120	\$10,120	\$10,120	\$ 5,060	\$ 40,480	\$ 75,900
Per Diem (\$73/day)	\$ 8,760	\$ 8,760	\$ 8,760	\$ 4,380	\$ 35,040	\$ 65,700
Total						\$281,430
Rounded						\$282,000

<sup>1/</sup> Includes benefits, leave and H.O. costs

D. International Training and AIT

1. US-Ph.D. level 34 years each @\$1,250/mo + 10% inflation per year = \$54,648. International travel paid by RTG through DTEC funds.
2. USDA/Washington, D.C. short-term training for Area Sampling Frame Construction 1 month, per diem \$50 per day for 3 persons. Training cost for up to 3 participants \$3,617 per course.
3. AIT training for 5 terms cost \$13,000 per person. No travel costs required.

E. In-country seminars which are aimed to provide training on Agricultural Planning at the zonal level and for the monitoring and implementation of agricultural plan at the zonal level.

F. AID Costs (with voltage stabilizer where appropriate)  
(All items to be granted in aid to RTG upon arrival)

1. Area Sampling Frames (ASF) Hardware

Color Additive Viewer	\$30,000
Zoom Transfer Scope-large base	6,500
Linear Measuring Set and TV monitor plus power supply for 100V 60 herts(2)*	20,500
Camera and mount for hard copy photo prints and supplies	1,500
Supplies for ASF construction	10,000
Mirror Steroscopes (4)	4,000
Diazo Printer and Developer and supplies	3,500
Sub-total	<u>76,000</u>

2. Collection, Editing, Coding and Publication Section

Clerical Calculators--220V charges (24)	1,000
IBM (type) Electric Typewriter--220V 50 cycles(2)	3,000
Electronic Data Processing Machine	18,000
Rotary Duplication Machine for questionnaires and publications--plus supplies	5,000
Sub-total	<u>27,000</u>

\*See attached Annex \_\_\_\_\_ for description. TV monitor and power source available from various supplies. Suggest Sony TV since Tube curves in one directorily making hard copy photos less subject to distortion.

3. Computer Center

SAS* Computer systems--installation	\$6,000
(used to support software--4 year maintenance)	6,000
Remote terminals--hard copy/CRT (4)	8,000
Sub-total	<u>\$20,000</u>

4. Other (used in Statistics and other Divisions)

Vehicles (2)**	\$25,000
HP 33E type calculators--220V charges (12)	2,000
Sub-total	<u>27,000</u>
Total Itemized Procurement	150,000
Contingency for as yet unidentified procurement***	40,000
Shipping costs	26,000
DTEC and/or AID/W Procurement cost 10%***	15,000
Maintenance costs 4 years***	<u>15,000</u>
Total	<u><u>\$246,000</u></u>

G. Work Space and Facilities

By means of counterpart funds allocated to the project, OAE will provide the following office space, office facilities, and assistance:

1. Office Space

	<u>No.</u>	<u>Value</u>
(a) Four (4) 12x12 windowed offices for resident advisors	4	2,800
(b) One (1) 15x15 windowed conference room	1	1,200
(c) Two (2) 12x12 windowed offices for TDY advisors	2	<u>1,000</u>
Sub-total	<u>7</u>	<u>\$5,000</u>

\*Dependent upon what type new computer is installed.

\*\*One will be used for Agricultural Statistics advisor to help counterparts in improving data collection systems and ASF construction and land use strata varification. The another one will be used for incoming seminar which will be held up-country.

\*\*\*To be financed by RTG.

2. Equipment

	<u>No.</u>	<u>Value /per unit</u>
(a) Office desks	6	฿ 2,500
(b) Conference table	1	6,000
(c) Desk chairs	6	500
(d) Plain chairs (conference room)	20	150
(e) File cabinets, 4 drawer	7	1,800
(f) Typewriters: Electric	2	15,000
Standard	2	15,000
(g) Typewriter desks	2	1,500
(h) Air-conditions	7	20,000
(i) Floor fans	7	1,600
(j) Storage cabinet (for supplies)/lock	2	2,500
(k) Desk lamp	8	325
(l) Map drawer cabinet, 4 drawers	2	1,200
(m) Blackboard/stand	2	฿ <u>500</u>
Sub-total		\$ 15,000

3. Office Supplies

	<u>\$ per year</u>
(a) Paper, pads, pencils, pen, etc.	\$5,000
(b) Copying, printing, photographing	<u>5,000</u>
Sub-total	\$10,000

4. Assistants\*

	<u>\$ per year</u>
(a) Admin. Assistant (1 person) ฿6,000/M	\$3,600
(b) Clerical (4 persons) ฿2,500/M	6,000
(c) Secretarial (3 persons) ฿4,000/M	7,200
(d) Technical (4 persons) ฿4,000/M	<u>9,600</u>
Sub-total	\$26,400

5. Training in Thai (Optional)

- (a) Resident Advisors
- (b) Families

All resident advisors will received training in Thai, at the 1 or 2 verbalization level. Wives should also be encouraged to receive training to the same verbal level.

\*All personnel must have Thai/English language capability.

Commitment by CY - Expressed in US \$ Equivalents 1/

Item	Total No.	US dollars											
		Year 1 <u>3/</u>		Year 2		Year 3		Year 4		Total Rounded (000 dollars)			
		US	RTG	US	RTG	US	RTG	US	RTG	US (1)	RTG (2)	Counter Part	Total (1+2)
1. Technical Assistance													
a. Resident	14.0 PY	585,385	8,575	362,479	8,400	408,147	8,400	431,645	8,400	1,788	34	34	1,822
b. Short Term <u>4/</u>	30.0 PM	70,500	0	77,500	0	85,305	0	93,835	0	327	0	0	327
c. Local Assistance <u>8/</u>	48.0 PY	0	26,400	0	29,040	0	31,944	0	35,138	0	122	0	122
d. Local Office Support		0	30,000	0	0	0	0	0	0	0	30	0	30
2. Counterpart	64.0 PY	0	38,400	0	42,240	0	46,464	0	51,110	0	178	0	178
3. Training (DTEC pays inter-travel costs and the US pays for training costs, books and per diem)													
a. In-country (9 person/y for 2.5Y) at AIT	9 PY	46,800	27,000 <u>6/</u>	51,480	29,700 <u>6/</u>	28,314	16,335 <u>6/</u>	0	0	127	73	0	200
b. USA University (Ph.D) (5 persons for 3.5 Yrs.)	5 PY	75,000	21,325 <u>5/</u>	82,500	16,500 <u>2/</u>	90,750	18,150 <u>2/</u>	49,912	18,401 <u>5/</u>	298	74	15	372
c. USDA-ESCS & US Bureau of Census arranges Courses in Thailand for about 20 persons each time.	40 PM	50,000	48,000 <u>2/</u>	55,000	52,800 <u>2/</u>	0	0	0	0	105	101	0	206
d. USDA-ESCS (3 ea.)	3 PM	8,117	8,790 <u>5/</u>	8,929	9,669 <u>5/</u>	0	0	0	0	17	18	15	35
e. Individual grants or research studies in country.	10 P	0	5,500 <u>7/</u>	0	5,500 <u>7/</u>	0	5,500 <u>7/</u>	0	5,500 <u>7/</u>	0	22	10	22
4. Travel													
a. In-country TA & OAE													
- Per Diem 10 persons (฿200 x 5 d/month)		0	6,000	0	6,600	0	7,260	0	7,986	0	28	28	28
- Transport 10 persons (฿2,000/mon. for 10 mon.)		0	1,000	0	1,100	0	1,210	0	1,331	0	5	5	5
b. International Meeting US(TA) + OAE		19,000	25,000	19,000	25,000	19,000	25,000	19,000	25,000	76	100	0	176
c. In-country Seminar US(TA) + OAE + MOAC		10,000	10,000	10,000	10,000	10,000	10,000	10,000	10,000	40	40	0	80

Item	Total No.	Year 1		Year 2		Year 3		Year 4		Total Rounded (000 dollars)			
		US	RTG	US	RTG	US	RTG	US	RTG	US (1)	RTG (2)	Counter Part	Total (1+2)
5. Materials and equipment (to be granted in and to RTG upon arrival in Thailand)													
a. Area Sampling Frame		76,000	0	0	0	0	0	0	0	76	0	0	76
b. Coll., Codly, Eding and Pub.		27,000	0	0	0	0	0	0	0	27	0	0	27
c. Computer Center		20,000	0	0	0	0	0	0	0	20	0	0	20
d. Other plus Shipping		53,000	0	0	0	0	0	0	0	53	0	0	53
e. Procurement & maintenance cost		0	58,000	0	4,000	0	4,000	0	4,000	0	70	0	70
6. Evaluation		0	0	10,000	10,000	0	0	10,000	20,000	20	30	30	50
Sub-Total		1,040,802	313,990	676,938	250,549	641,516	174,263	614,392	186,866	2,974	925	137	3,899
7. Contingency (12%) <u>9/</u>		72,480	37,679	23,575	30,066	45,270	20,912	73,727	22,424	215	111	16	326
Grand Total		1,113,282	351,669	700,513	280,615	686,786	195,175	688,119	209,290	3,189	1,036	153	4,225

FOOTNOTES:

- 1/ See Tables A, B, C, D for details of U.S. Contribution.
- 2/ Local salary costs (OAE) which based on B5,000 per month for the participants at AIT and Ph.D trainings and B4,000/month for USDA and ESCS training.
- 3/ Includes 2 months in 1980 & 10 months for 1984.
- 4/ Includes salary @ \$35,000/year plus 24% Benefit & O.H. @ 7% increase per year plus Int. Travel @ 10% increase per year - one month TDYs.
- 5/ Salary plus international travel.
- 6/ Salary plus AIT training cost.
- 7/ Salary plus research studying cost.
- 8/ Assume that 4 counterparts will work with one consultant for 4 years period. The salary is based on B4,000 per month and increased at 10% per annum.
- 9/ Contingency under U.S. financing will not come to 12% of the Sub-Total cost because some amount was put to finance the AIT training cost under item 3.a above.

Table 1. Current Authorized Staff Strength of OAE by Division, Grade, and Education Qualification  
(As of June 24, 1980)

Office	Classification (c)											Total	Below Voc. School	Voc. School	2nd School	Dip.	BA	a/ MA	b/ Ph.D	Total		
	Vacancy	No Funds	1	2	3	4	5	6	7	8	9										10	
Office of the Secretary	15	12	15	7	20	5	7	1			1	1	57	1	31	2	6	13	3	1	57	
Division of Policy and Agricultural Development Plan	22	12	7		27	6	24	2	1				67		10			42	14	1	67	
Division of Economics Project and Program Evaluation	77	63	44	11	63	11	11	9	1				150		66		8	68	7	1	150	
Division of Implementation Plan	30	21	10	2	30	3	9	6	1				61		16		1	38	6		61	
Division of Agricultural Economics Research	30	19	14	6	55	14	50	9					148		43		5	79	20	1	148	
Agricultural Statistics Center	109	81	113	24	59	24	20	8	1				249	2	150		13	71	13		249	
<b>Total</b>	<b>283</b>	<b>208</b>	<b>203</b>	<b>50</b>	<b>254</b>	<b>63</b>	<b>121</b>	<b>35</b>	<b>4</b>			<b>1</b>	<b>1</b>	<b>732</b>	<b>3</b>	<b>316</b>	<b>2</b>	<b>33</b>	<b>311</b>	<b>63</b>	<b>4</b>	<b>732</b>

a/ Seven officers are currently studying for M.A. degrees outside Thailand.

b/ Eight officers are currently studying for Ph.D. degrees in the U.S.

## ANNEX K

Table 2. Current staff of Office of the Secretary  
by Branch, Grade, and Education Qualification

	Classification (C)										Total	Below Voc. Schl.	Voc.	2nd Schl.	Dip.	BA	MA	Ph.D.	Total
	1	2	3	4	5	6	7	8	9	10									
Office of the Secretary		1			1	1			1	1	2						1	1	2
Correspondence Branch	2	2	4								8	1	7						8
Personnel Branch			6	2							8		2	1		4	1		8
Financial Branch	10	2	4	1	1						18		14			4			18
Property & Purchasing Branch	1		4		1						6		4		1	1			6
Publication & Training Branch	2	2	2	2	4						12		3		5	4			12
<b>Total</b>	<b>15</b>	<b>7</b>	<b>20</b>	<b>5</b>	<b>7</b>	<b>1</b>			<b>1</b>	<b>1</b>	<b>57</b>	<b>1</b>	<b>31</b>	<b>2</b>	<b>6</b>	<b>13</b>	<b>3</b>	<b>1</b>	<b>57</b>

Total does not include 15 positions which are currently unfilled. Twelve of these positions are authorized by the Civil Service Commission(CSC) without funding from Bureau of Budget(BOB) and 3 are unfilled for other reasons.

Table 3. Current Staff of Division of Policy and Agricultural Development Planning  
by Branch, Grade and Education Qualification

Office	Classification (c)										Total	Below Voc. School	Voc. School	2nd Dip. School	Dip. BA	MA	Ph.D	/a Total
	1	2	3	4	5	6	7	8	9	10								
Director							1					1					1	1
Correspondence Branch	1		2		1							4	3			1		4
Policy Analysis Branch			2		4	1						7			4	3		7
National Crop Development Model Branch	1		2	2	2	1						8	1		6	1		6
National Livestock Development Model Branch			4	1	2							7	1		5	1		7
National Tree Crop and Vegetable Development Model Branch	1		4		2							7	1		5	1		7
Regional Agricultural Development Model Branch	1		4		3							8	1		6	1		8
Rural Agricultural Development Model Branch	2		4		2							8	2		4	2		8
Agricultural Sector and Non-Agricultural Sector Coordination Model Branch			1	2	2							5			3	2		5
Feasibility Study Branch	1		3		3							7	1		4	1	1	7
Agricultural Planning Coordination Meeting Branch			1	1	3							5			4	1		5
<b>Total</b>	<b>7</b>		<b>27</b>	<b>6</b>	<b>24</b>	<b>2</b>	<b>1</b>					<b>67</b>	<b>10</b>		<b>42</b>	<b>14</b>	<b>1</b>	<b>67</b>

/a Total does not include 22 positions which are currently unfilled. Twelve of these are authorized by the CSC without funding from BOB and 10 are unfilled for other reasons.

/b Three officials from this Division are studying for the Ph.D. who are expected to return to OAE within six months to bring total Ph.D.'s to 4 persons by January 1, 1981.

Table 4. Current Staff of Division of Project and Program Evaluation  
by Branch, Grade and Education Qualification

Office	Classification (c)										Total	Below Voc. School	Voc. School	2nd School	Dip.	BA	MA	Ph.D	Total
	1	2	3	4	5	6	7	8	9	10									
Director							1					1							
Correspondence Branch	2	1	1		1							5		4		1			
Agro-Economic Zone Branch	37	10	38	5	3	6						99		56	8	31	4		9
Inspection and Project Evaluation Branch	1		5	3	1							10		1		8	1		10
Rural Development Coordina- tion Branch	1		7	1	1	1						11		1		10			11
Agricultural Investment Evaluation Branch	2		8	2	2	1						15		3		10	1	1	15
Price Stabilization and Special Project Branch	1		4		3	1						9		1		7	1		9
<b>Total</b>	<b>44</b>	<b>11</b>	<b>63</b>	<b>11</b>	<b>11</b>	<b>9</b>	<b>1</b>					<b>150</b>		<b>66</b>	<b>8</b>	<b>68</b>	<b>7</b>	<b>1</b>	<b>150</b>

/a Total does not include 77 positions which are currently unfilled. Sixty-three of these are authorized by CSC without funding from BOB and 14 are unfilled for other reasons.

Table 5. Current - staff of Division of Implementation Plan by Branch, Grade, and Education (ordinary)

Office	Classification (c)										Total	Below Voc. School	Voc. School	2nd School	Bsp. BA	MA	Ph.D	Total a/
	1	2	3	4	5	6	7	8	9	10								
Division of Implementation Plan							1					1					1	1
1. Implementation Plan and Budget (IPB) 1			4	2	-	1						7	1		5	1		7
2. IPB 2	1	1	4	-	1	1						8	3		4	1		8
3. IPB 3			4	1	1	1						7	1		6			7
4. IPB 4	1		4		2	1						8	2		5	1		8
5. IPB 5		1	4		2	1						8	1		6	1		8
6. IPB 6			4		2	1						7		1	5	1		7
7. IPB 7			6		1							7			6	1		7
8. Correspondence B	8											8	8					8
<b>Total</b>	<b>10</b>	<b>2</b>	<b>30</b>	<b>3</b>	<b>9</b>	<b>6</b>	<b>1</b>					<b>61</b>	<b>16</b>	<b>1</b>	<b>38</b>	<b>6</b>		<b>61</b>

a) Total does not include 30 positions which are currently unfilled. Timely one of these are authorized by CSC without funding from BOB and 9 are unfilled for other reasons.

Table 6. Current staff of Division of Agr. Economic Research by Branch, Grade and Education qualification

Branch	Classification (c)										Total	Below Voc. School	Voc. School	2nd School	Dip.	BA	MA	Ph.D	a/ Total
	1	2	3	4	5	6	7	8	9	10									
<u>Division of Agr. Economic Research</u>						1						1					1	1	
1. Correspondence Branch	3	2	2		1							8		7		1			8
2. Crop Economic Research	3		3	1	5							12		4		7	1		12
3. Livestock & Economic Research		1	7	1	2							11		4		5	2		11
4. Input Production Research	2	1	3		7	1						14		2		1	10	1	14
5. Farm Management Research	2	1	14	3	7	1						28		11		2	13	2	28
6. Institution Development Research	1		3		8	1						13		4		7	2		13
7. Agro-industry Economics Research			4		7							11		1		8	1	1	11
8. Research Development and Management Research				1	3							4				2	2		4
9. Income Expenditure and Debt of Farmer	1	1	2		1	1						6		2		1	3		6
10. Farm Bookkeeping	1		4	2	1	1						9		4		1	3	1	9
11. Agr. Demand Analysis			2	3	1	1						7				6	1		7

Table 6. (Continued)

Branch	Classification (c)										Total	Below Voc. School	Voc. School	2nd School	Dip.	BA	MA	Ph.D	Tot.
	1	2	3	4	5	6	7	8	9	10									
1. Crop Marketing Research			4	2	2	1						9	1			6	2		
2. Livestock & Marketing Research			3	1	1							5	1			2	2		
4. Price Analysis and Market Information	1		4		4	1						10	2				2		10
Total	14	6	55	14	50	9						148	43		5	79	20	1	b/ 148

a/ Total does not include 30 positions which are currently unfilled. Nineteen of these are authorized by CSC without funding from BOB and 11 are unfilled for other reasons.

b/ Four officials from this division are studying for the Ph.D who are expected to return bringing total Ph.Ds to 5 by June, 1981.

Table 7. Current Staff of Agr. Statistics Center by Branch, Grade and Education Qualification

Branch	Classification (c)										Total	Below Voc. School	Voc. School	2nd School	Dip.	BA	MA	Ph.D a/	Total b/
	1	2	3	4	5	6	7	8	9	10									
<u>Agr. Statistics Center</u>																			
1. Correspondence										1	1						1	1	
2. Statistical Technique & Plan	4	6	4	1	1						16	1	9		5	1			16
3. Agr. Data Survey	3		4	5	2						14		5		6	3			14
4. Data Collection & Code Interpretation	61	1	23	4	6	4					108		77		2	28	1		108
5. Computer	19	4	12	5	2	1					43		26		6	10	1		43
6. Crop Analyst & Estimating	15	3	7	3	2	1					31	1	20		8	2			31
7. Farmer's Registration & Agri-business	5	1	8	2	2	1					19		7		10	2			19
8. Remote Sensing Application	4			1	3	1					9		4		4	1			9
	2		1	3	2						8		2		4	2			8
<b>Total</b>	<b>113</b>	<b>24</b>	<b>59</b>	<b>24</b>	<b>20</b>	<b>8</b>	<b>1</b>				<b>249</b>	<b>2</b>	<b>150</b>		<b>13</b>	<b>71</b>	<b>13</b>	<b>249</b>	

a. Two officials studying for the Ph.D from this division who are expected to return to OAE within 6 months bringing total Ph.Ds to 2 by January 1, 1981.

b/ Total does not include 109 positions which are currently unfilled. Eighty-one of these are authorized by CSC without funding from BOB and 28 are unfilled for other reasons.

## ANNEX L

Detailed Financial Tables

## A. Project Team Leader (Family of four) - arrive Nov. 1980

<u>Item</u>	<u>1980</u> <u>(2 mos)</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u> <u>(10 mos)</u>	<u>Total</u>
1. Salary (GS 16/3 equiv.)	8,352	50,113	53,621	57,374	51,159	220,619
2. Post Diff. 10%	835	5,011	5,362	5,737	5,116	22,061
3. Fringe Ben. 20%	1,670	10,022	10,724	11,475	10,232	44,123
4. Def. Base Act Insur. 8.75% (1+2)	804	4,823	5,161	5,522	4,924	21,234
5. Post Assignment						
a. Travel	5,300	-	-	-	6,800	12,100
b. Shipment HHE	4,400	-	-	-	4,800	9,200
c. Storage HHE	167	1,000	1,000	1,000	833	4,000
d. Car shipment	2,200	-	-	-	2,200	4,400
6. Quarter Allow. & supp. Post Allow.	∅292,800	189,200	208,120	228,932	251,825	1,170,877
US	\$ 14,190	7,060	8,006	9,047	10,591	48,894
RTG	\$ 450	2,400	2,400	2,400	2,000	9,650
7. Educational Allow.	3,700	5,500	6,000	6,600	6,050	27,850
8. Home Leave and R&R Travel		1,400	6,800	1,680	-	9,880
9. Medical and Passport	800					800
10. Contractors O.H. 60%	5,011	30,068	32,173	34,424	30,695	132,371
U.S. Totals	\$ 47,429	114,997	128,847	132,859	133,400	557,532
RTG Totals	\$ 450	2,400	2,400	2,400	2,000	9,650

Note: ∅20 = \$1.00

ANNEX M

PROJ: 493-317

DEPARTMENT OF TECHNICAL AND ECONOMIC COOPERATION  
 Krung Kasem Road, Bangkok, Thailand  
 Cable: DTEC.  
 TEL. 817555

No. 1803(1)/173053

August 18, B.E. 2523

Mr. Donald D. Cohen,  
 Director,  
 USAID/Thailand.

Dear Mr. Cohen,

DISTRIBUTION

ACT	INFO
D	<input checked="" type="checkbox"/>
EXO	<input type="checkbox"/>
O/FIN	<input checked="" type="checkbox"/>
O/PPD	<input checked="" type="checkbox"/>
O/LST	<input type="checkbox"/>
O/HUD	<input type="checkbox"/>
O/HD	<input checked="" type="checkbox"/>
G/HPN	<input type="checkbox"/>
G/HRT	<input type="checkbox"/>
TIG	<input type="checkbox"/>
EMB	<input type="checkbox"/>
C&R	<input checked="" type="checkbox"/>

Subject: Project Paper  
Agricultural Planning Project

Please refer to Mr. Queener's letter dated July 10, 1980 requesting for RTG approval of the Subject Project Paper.

Having reviewed the mentioned Project Paper with the Office of Agricultural Economics (OAE), we are pleased to inform you that we desire to undertake the project.

Thank you for your kind cooperation.

Yours sincerely,

*K. Urasavan*

Kasem Urasavan  
 Deputy Director-General

ACTION TO:	
DATE:	8-25-80
ACTION:	
BY:	

USAID/Sub-Division  
 DEC-I  
 Tel. 2810966, 2813963