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DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
Washington, D.C. 20523

PROJECT PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

THAILAND - AGRICULTURAL EXTENSION OUTREACH

AID-DLC/P-2216

UNCLASSIFIED

DEPARTMENT OF STATE
AGENCY FOR INTERNATIONAL DEVELOPMENT
WASHINGTON, D.C. 20523

UNCLASSIFIED

AID-DLC/P-2216

February 24, 1977

MEMORANDUM FOR THE DEVELOPMENT LOAN COMMITTEE

SUBJECT: Thailand - Agricultural Extension Outreach

Attached for your review are recommendations for authorization of a loan to the Kingdom of Thailand in an amount not to exceed Three Million United States Dollars ($3,000,000) to help in financing certain foreign exchange and local currency costs of goods and services required for the Project.

No meeting is scheduled for this loan proposal. However, please advise us of your concurrence or objections as early as possible, but in no event later than close of business on Wednesday, March 2, 1977. If you are a voting member, a poll sheet has been enclosed for your response.

Development Loan Committee
Office of Development Program
Review

Attachments:
Summary and Recommendations
Project Analysis
Annexes B-5, C, D, E, G, H, I, J

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THAILAND

AGRICULTURAL EXTENSION OUTREACH PROJECT

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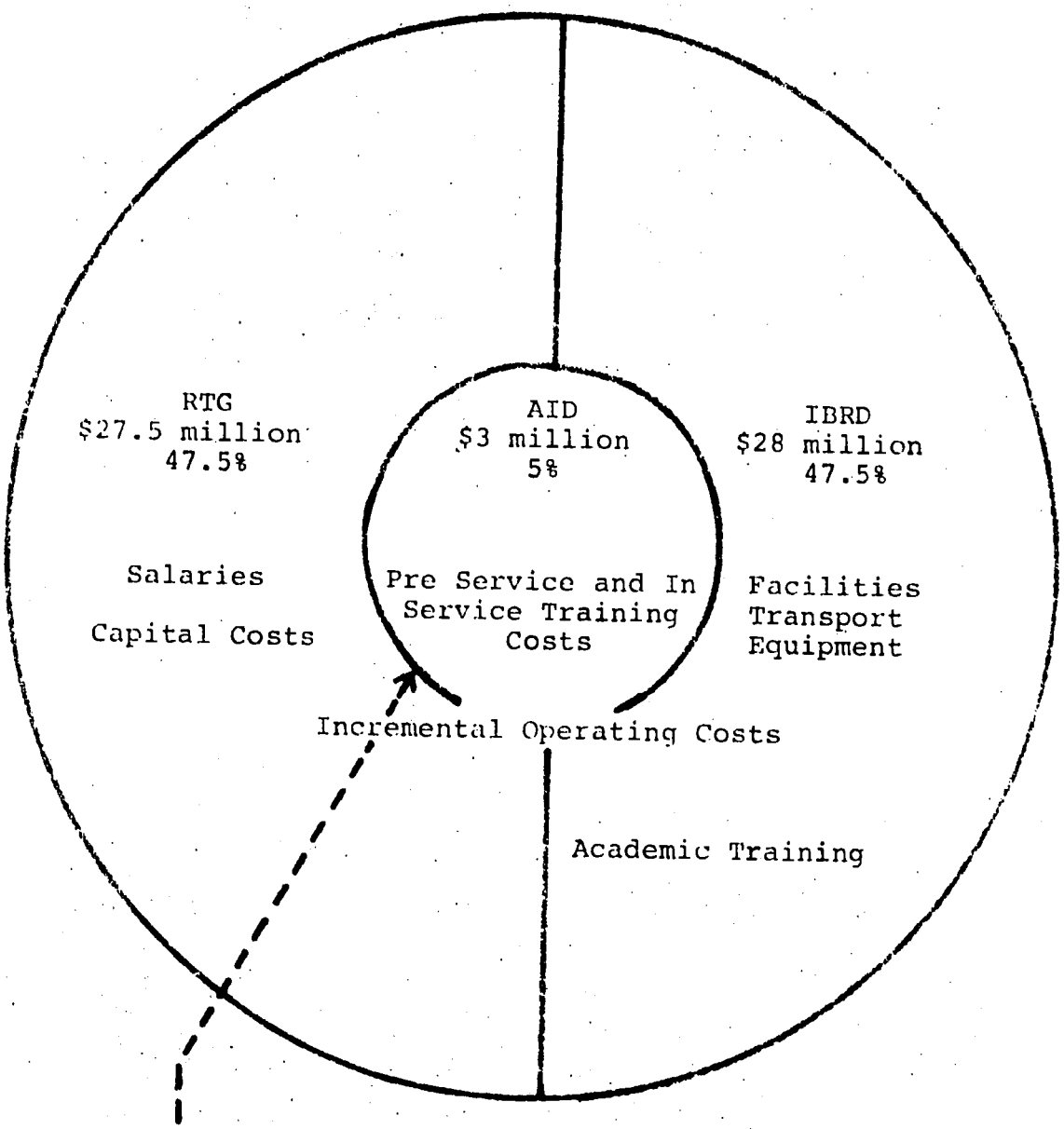
THAILAND NATIONAL EXTENSION IMPROVEMENT PROJECT

RTG - AID - IBRD FUNDED

$58.5 million total cost



THE CORE ELEMENT

Agricultural Extension Outreach Project

THAILAND

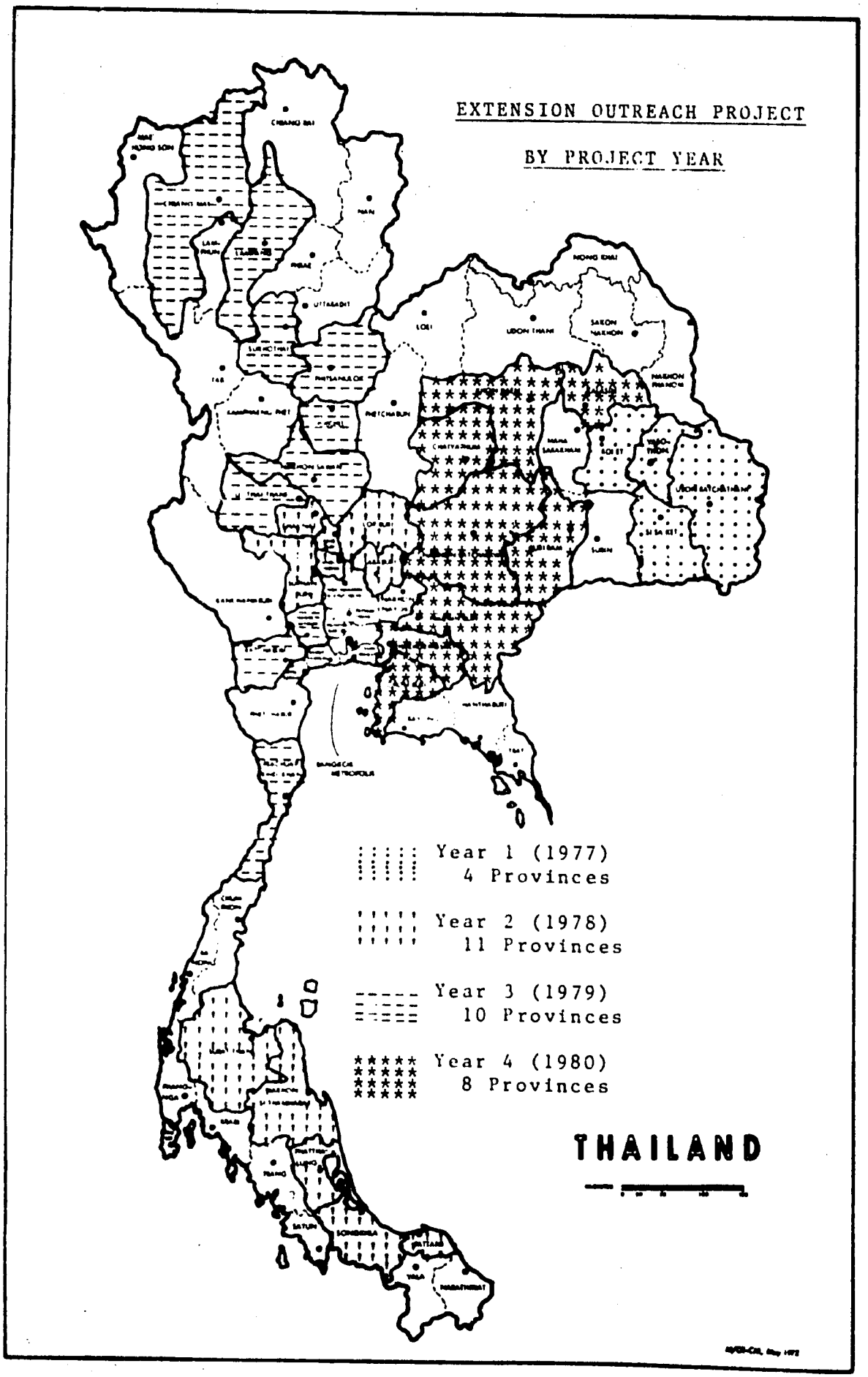
NATIONAL EXTENSION IMPROVEMENT PROJECT

Provincial Distribution of Project Beneficiaries

Region and Province	Agro-Ec. Zone /1	Number Districts	Number Tambons	Number Villages	Approx. No. Farms /2 ('000)
Northeast					
1. Ubon Ratchathani	2	18	192	2,011	137
2. Yasothon	2	6	60	612	41
3. Roi Et	3	13	131	1,561	127
4. Kalasin	3	13	74	804	87
5. Khon Kaen	3	14	135	1,572	121
6. Si Sa Ket	4	10	140	1,395	104
7. Buri Ram	4	11	93	1,376	108
8. Chaiyaphum	5	11	78	843	91
9. Nakhon Ratchasima	5	19	174	2,253	167
Subtotal		115	1,077	12,427	983
North					
10. Nakhon Sawan	6	12	108	1,009	79
11. Uthai Thani	6	6	57	390	33
12. Phitsanulok	8	8	77	684	55
13. Phichit	8	6	70	565	56
14. Lampang	9	11	79	584	47
15. Sukhothai	9	8	67	504	53
16. Chiang Mai	10	19	170	1,323	100
Subtotal		70	628	5,059	423
Central					
17. Saraburi	7	11	108	898	26
18. Lop Buri	7	6	85	801	48
19. Sing Buri	11	6	46	331	15
20. Chai Nat	11	6	44	375	34
21. Ang Thong	11	7	68	467	19
Subtotal		36	351	2,872	142
West					
22. Suphan Buri	11	9	96	665	73
23. Nakhon Pathom	11	6	98	775	43
24. Ratchaburi	12	9	98	783	44
25. Prachuap Khiri Khan	12	7	35	251	28
Subtotal		31	327	2,474	188
East					
26. Prachin Buri	13	11	86	802	48
27. Chachoengsao	13	7	88	739	36
28. Chon Buri	15	8	81	571	33
Subtotal		26	255	2,112	117
South					
29. Surat Thani	17	16	112	675	36
30. Phatthalung	17	4	51	435	38
31. Songkhla	17	10	114	891	77
32. Nakhon Si Thammarat	17	15	139	1,012	89
33. Pattani	19	9	109	552	55
Subtotal		54	525	3,565	295
Total		332	3,163	28,509	2,148
Total Thailand (71 Provinces)					3,600

/1 For agricultural development planning purposes, the country has been divided along provincial boundaries into 19 Agro-Economic Zones based on similarities in soil type, rainfall, temperature, type of farm and principle farm income.

/2 Office of Agricultural Statistics, MOAC, DAE.


EXTENSION OUTREACH PROJECT
BY PROJECT YEAR
Year 1 (1977)
4 Provinces
Year 2 (1978)
11 Provinces
Year 3 (1979)
10 Provinces
Year 4 (1980)
8 Provinces
THAILAND

NATIONAL AGRICULTURAL EXTENSION OUTREACH PROJECT

Implementation Schedule:

1st year (1977)	1.	Si Sa Ket	Northeast
	2.	Roi Et	"
	3.	Ubon Ratchathani	"
	4.	Yasothon	"
2nd year (1978)	1.	Chai Nat	Central
	2.	Sing Buri	"
	3.	Lop Buri	"
	4.	Saraburi	"
	5.	Ang Thong	"
	6.	Suphan Buri	Western
	7.	Phatthalung	Southern
	8.	Surat Thani	"
	9.	Pattani	"
	10.	Songkhla	"
	11.	Nakhon Si Thammarat	"
3rd year (1979)	1.	Chiang Mai	Northern
	2.	Lampang	"
	3.	Phichit	"
	4.	Nakhon Sawan	"
	5.	Sukhothai	"
	6.	Uthai Thani	"
	7.	Phitsanulok	"
	8.	Prachuap Khiri Khan	Western
	9.	Ratchaburi	"
	10.	Nakhon Pathom	"
4th year (1980)	1.	Nakhon Ratchasima	Northeast
	2.	Khon Kaen	"
	3.	Kalasin	"
	4.	Buri Ram	"
	5.	Chaiyaphum	"
	6.	Prachin Buri	Eastern
	7.	Chon Buri	"
	8.	Chachoengsao	"

ABBREVIATIONS, TERMS AND EQUIVALENTS

Abbreviations - Acronyms

AID	Agency for International Development
BAAC	Bank for Agriculture and Agricultural Cooperatives
DA	Department of Agriculture, RTG Ministry of Agriculture and Cooperatives
DAE	Division of Agricultural Economics, RTG Ministry of Agriculture and Cooperatives
DOAE	Department of Agricultural Extension, RTG Ministry of Agriculture and Cooperatives
DSCS	Development Support Communications Services, Program of the UNDP.
DTEC	Department of Technical and Economic Cooperation. RTG element, located in Office of Prime Minister, responsible for coordination with foreign grant technical and economic assistance.
IBRD	International Bank for Reconstruction and Development, usually called the World Bank.
MOAC	Ministry of Agriculture and Cooperatives
MOF	Ministry of Finance
NESDB	National Economic and Social Development Board. Responsible for planning and evaluating the level and direction of economic and social development in Thailand.
NIDA	National Institute of Development Administration
RTG	Royal Thai Government
USOM	United States Operations Mission to Thailand. Represents AID in Thailand.
VTR	Video-tape Recording

Thai Geographic Entities

Changwat	Province. 71 throughout the Country.
Amphoe	District. Sub-division of a Province.
Tambon	Sub-division of a District.
Village	Sub-division of a Tambon.

Currency Equivalents

U.S. $ 1.00 = Baht (฿) 20.00

Baht 1.00 = U.S. $ 0.05

Area Equivalents

1 rai = 0.16 hectare (40 x 40 meters)
0.40 acre

1 hectare (ha.) = 6.25 rai
2.47 acres

1 acre = 2.5 rai

RTG Fourth Five-Year Development Plan
Period 1977 through 1981

A. Face Sheet Data

AGENCY FOR INTERNATIONAL DEVELOPMENT

PROJECT PAPER FACESHEET

1. TRANSACTION CODE: A (A ADD, C CHANGE, D DELETE)

PP

2. DOCUMENT CODE: 3

3. COUNTRY ENTITY: Thailand

4. DOCUMENT REVISION NUMBER:

5. PROJECT NUMBER (7 digits): 493-0280

6. BUREAU OFFICE: A. SYMBOL: ASIA; B. CODE: 02

7. PROJECT TITLE (Maximum 40 characters): Agricultural Extension Outreach

8. ESTIMATED FY OF PROJECT COMPLETION: FY 80

9. ESTIMATED DATE OF OBLIGATION: A. INITIAL FY 77; B. QUARTER 1 (Enter 1, 2, 3, or 4); C. FINAL FY 78

10. ESTIMATED COSTS ($000 OR EQUIVALENT $1 = ฿20)

A. FUNDING SOURCE	FIRST FY B. FX	FIRST FY C. L/C	FIRST FY D. TOTAL	LIFE OF PROJECT E. FX	LIFE OF PROJECT F. L/C	LIFE OF PROJECT G. TOTAL
AID APPROPRIATED TOTAL	172	274	446	590	2,510	3,100
GRANT	(50)	( )	(50)	(100)	( )	(100)
LOAN	(122)	(274)	(396)	(490)	(2,510)	(3,000)
OTHER U.S. 1.						
OTHER U.S. 2.						
HOST COUNTRY						27,500
OTHER DONORS (IBRD)						28,000
TOTALS						58,600

11. PROPOSED BUDGET APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	PRIMARY TECH. CODE D. LOAN	E. 1ST FY 77 F. GRANT	E. 1ST FY 77 G. LOAN	H. 2ND FY 78 I. GRANT	H. 2ND FY 78 J. LOAN	K. 3RD FY 79 L. GRANT	K. 3RD FY 79 M. LOAN
(1) FN	120	012	012	50	3,000	50	–	–	–
(2)									
(3)									
(4)									
TOTALS									

A. APPROPRIATION	N. 4TH FY 80 O. GRANT	N. 4TH FY 80 P. LOAN	Q. 5TH FY ___ R. GRANT	Q. 5TH FY ___ S. LOAN	LIFE OF PROJECT T. GRANT	LIFE OF PROJECT U. LOAN
(1)	–	–	–	–	100	3,000
(2)						
(3)						
(4)						
TOTALS						

12. IN-DEPTH EVALUATION SCHEDULED: MM 06 YY 78

13. DATA CHANGE INDICATOR. WERE CHANGES MADE IN THE PID FACESHEET DATA, BLOCKS 12, 13, 14, OR 15 OR IN PRP FACESHEET DATA, BLOCK 12? IF YES, ATTACH CHANGED PID FACESHEET.

2 (1 NO, 2 YES)

BEST AVAILABLE COPY

14. ORIGINATING OFFICE CLEARANCE

SIGNATURE

TITLE: Director, USOM/Thailand

DATE SIGNED: MM 10 DD 20 YY 76

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

AID 1330-4 (3-76)

B. Recommendations:

It is recommended that funds be approved for the Agricultural Extension Outreach Project as follows:

Grant	$ 100,000
Loan*	$3,000,000
Total New AID Obligation	$3,100,000

* Terms of the Loan will be 40 years, 10 year grace period with interest 2% during the grace period and 3% thereafter.

C. Description of the Project

This Project is one element of a joint Royal Thai Government, IBRD, and AID effort to strengthen and expand the Department of Agricultural Extension (DOAE) services to farmers in rural Thailand. The total Project is called the National Extension Improvement Project. The AID element is called, by AID, the Agricultural Extension Outreach Project. Over a four-year period extension services will be expanded and upgraded in thirty-three Provinces to meet the needs of 2,200,000 farm families, 60% of Thailand's rural population that till 54% of the land. The DOAE will be reorganized to move responsibility with commensurate authority to the field; office, housing and training facilities will be constructed; transportation will be provided to extension personnel; and at least one Agent will be recruited, trained and placed in each of 3,200 sub-districts (Tambons) in the Project area. At least one Model Farmer will be selected in each of 29,000 villages as the focal point for extension activities in that village.

Training, aimed at increasing the capability of the DOAE and development of its staff, is a central feature of the Project. New and existing staff will be trained in extension methodology and relevant agricultural knowledge for their job location. Through the AID financed element of the Project, extension personnel at all levels will be trained and made to understand their responsibilities. Training emphasis will be on making the trainee responsive to the rural farmer; helping the farmer solve specific local production problems, improve his welfare, minimize his risks and/or make greater profit. Training programs and Project plans will be designed to satisfy these objectives. The Project is developed on the premise that the future of agricultural development in Thailand will be largely determined by the skills, knowledge and problem solving capabilities of the rural Thai farmers themselves.

The purpose of the Project then is to improve the flow of information to, and from, the poor, small farmer which will:

- enable him to make better informed decisions on crop selection, necessary inputs, marketing channels, etc.,

- improve his farming techniques, and

- enable him to convey his views and needs back to the "bureaucracy".

Achievement of the Project purpose will contribute to a higher goal; that is to increase the productivity and income of people who live in the rural areas of Thailand, with emphasis on the poorer small farmer.

It is expected that at the end of this Project the following conditions will exist:

- A system of pre-service and in-service training for extension personnel operating effectively in 33 Provinces.

- Effective coverage of Villages in 33 participating Provinces by Extension Agents.

  - Ratio of Extension Agents to farm families is at least 1:800.

  - Average frequency of Agent visits per Village will be at least twice a month.

- Routine interaction between researchers, extension personnel, and farmers established at Village and District levels.

- Increasing degree of adoption of improved farming techniques.

- Reduction of the gap between current and potential farm yields of at least 50%.

- Farmers' views and needs influence RTG decisions and plans for extension programs.

- RTG decision to expand Project coverage to remaining 38 Provinces.

To bring about these expected conditions new personnel will be recruited; new and existing personnel will be trained; and a farmer-responsive organizational framework will be established that is linked with research activities, and which allows feedback of information from small farmers to government for action.

1. People to be Involved

The Project will link extension personnel to the rural farmer. At least one unpaid Model Farmer will be selected from each village. These farmers will be the focal point for the activities of the Tambon Extension Agent; e.g. site of new cropping practice demonstrations, on-farm research trials, farmer training sites, etc. Model Farmers will be selected on the basis on their progressive attitude, leadership, respect of peers, etc. Over the life of the Project approximately 29,000 Model Farmers will be selected and their farms will be used to prove the benefits of new cropping techniques.

At least one Agent will be placed at the next higher administrative level, the Tambon. These Agents will be full time RTG civil servants and will be recruited mainly from Vocational Agriculture Schools. Priority will be given to those graduates with agricultural backgrounds, who are from the area to which they will be assigned and have the ability to relate easily to farmers. Over the life of the Project approximately 3,200 Tambon Agents will be recruited, trained, and placed.

At the District level approximately three Extension Agents, including one chief, will be responsible for extension activities in that District. Although some recruitment will be necessary, most of these people are available from existing staff. Limited numbers of new recruits will also be necessary to staff the Provincial, Regional, and National levels.

2. Training Project Personnel

Training will be provided to personnel at all administrative levels including Regional Subject Matter Specialists and Training Officers, Provincial Agents, District Agents, Tambon Agents.

Training modules will be developed for each crop to be emphasized under the Project. The segments of the module, fitted to each level of training, will vary in complexity, e.g. extensive information in the Regional Subject Matter Specialist segment and a relatively simple segment for the Tambon Agent. Following training, the appropriate segment of the module will be used by the Extension Officers as their information handbook on that crop. (Emphasis at all levels will be on providing technical information relevant to the farmers' needs and on training that will make the Extension Officer better able to effectively serve the Thai farmer.)

No formal training sessions are planned for the farmers. Rather the emphasis will be on face to face contacts of Agents and farmers and observations and practical training on the Model Farmers' farms. After the farmers have made the decision to "risk" adopting new cropping techniques, the Agents will assist them with their production, credit, and marketing problems.

Training at the higher levels will be based on "real" farm production problems and in addition to introducing new cropping technology will include training on credit access, marketing sources, establishing rapport with farmers, etc.

3. The Organizational Framework

The DOAE extension network will be reorganized and responsibility with commensurate authority delegated to focus the activities of extension personnel at all levels toward the rural farmer and his family. New working procedures will be developed to link the DOAE more closely with the farmer (See Parts III-A & B).

An Inter-Ministerial level National Extension Committee will be formed to coordinate Project implementation and extension activities of the DOAE with other related elements, e.g. agricultural input supply, irrigation, credit, marketing, etc. Provincial Extension Working Groups will coordinate Provincial Agricultural Extension Services with other related activities in the Provinces. Provincial Technical Working Groups will determine research needs for the Province.

The Project design recognizes that reorganization is not the solution-(but reorganization accompanied by authority delegated to the lower levels is needed to increase services to the rural farmer.)

The Project further recognizes the extensive gap between research and extension. Systems will be developed and incorporated into the Project to eliminate this gap through on-farm research trials, exchange of research and extension personnel, local committees (District - Tambon) voicing research needs to the National Extension and Provincial Extension Committees directing activities of researchers. The feedback of information from the farmer level to all the higher levels will be encouraged and promoted by evaluating Extension Agents at all levels on their responsiveness to farmers.

D. Summary Findings

All of the analyses are complete. Results of these analyses indicate that the AID portion of the Thai National Extension Improvement Project is ready for immediate implementation.

The Project is already being implemented by the RTG. The first of the Train-the-Trainers Workshops is being organized using RTG funds. Authorization has been obtained from the IBRD to use funds from the Northeast Rural Development Loan for this Project. AID has provided two short-term Extension Training Specialists to assist with this training. (See Part II-C)

1. Technical Analysis

The AID assisted component of Project will provide in-country training for extension personnel at all levels, with special emphasis on the Tambon Agent. The modular concept for the development of course material and conducting training has already been used in Thailand, on a lesser scale, in the Public Health Sector and has proven to be feasible and effective. A pilot training session held in August, 1976, provided an indication of the present competency levels of the staff and elicited the implementors input into initial training design. Training, spread over the 4-year span of the Project, has been broken into manageable segments. Training facilities adequate for the initial training planned under this Project are already in existence, and expansion plans are adequate to cover total training needs. The technical talent to accomplish the training is not lacking in Thailand. See Part III-A, Technical Analysis.

2. Social Analysis

From the Social Soundness standpoint there are no insurmountable obstacles to the successful implementation of the Project. Project design assures that expected benefits can easily be extended to 80% of the farmers in the participating Provinces. This includes a large number of small, low-income farmers. Somewhat unique to this Project is the participation of the rural population in decisions affecting their lives. See Part III-C, Social Analysis.

3. Economic Analysis

This Project is one for which it is impossible to precisely quantify the economic benefits. Therefore, the calculations in Part III-D, Economic Analysis, should be

considered illustrative of the economic impact the Project can have. Potential increases in income, roughly proportional to size of farm, are about ฿100-฿150 per rai. The illustrative Internal Rate of Return computed out to 20 years is 53%. It is high because it puts to use unutilized or underutilized land with very small investment and capital inputs. Through the Project substantial increases in farmer income can be achieved without substantial increased inputs or credit. See Part III-D, Economic Analysis.

4. Statutory Criteria

This Project meets all applicable statutory criteria. See the Statutory Checklist, Annex F.

F. Project Issues

A number of issues have been raised during design of the Project. Some by AID/W in the PRP approval message (see Annex A), and others by USOM and the RTG. All have been addressed in this Project Paper. A short discussion of each issue with references indicating where detailed discussion can be found in the PP follows:

1. Justification for the Project

The Project will reach farm families who make up 60% of the rural population. It provides for major expansion of the Extension Service to place Tambon level Extension Agents in daily contact with farmers at the Village level, and is a direct effort to improve the income and welfare of the small farmers at the lowest levels. See Parts II-A-1, 2 and 3 for detailed justification for the Project.

The USOM decision to support an expanded extension program rather than other development projects was made after extensive discussions and evaluations of possible alternatives. Among the alternatives considered were research, marketing, and credit. USOM has supported research efforts in Thailand since initiation of AID support. Considerable progress has been made in this area, particularly in the Northeast, to the point where available research exceeds RTG capability to transmit it to farmers. Also, other donors, e.g., Rockefeller, Ford, UNDP, Japan, etc., are actively involved in further development of the RTG research capability.

In the credit field, significant assistance is already being provided to the BAAC by USOM through the Agriculture Development Loan. The New Zealand Government and Japan are also providing assistance.

Marketing is an area that needs support; however, the primary agency responsible, the recently established Marketing Organizations for Farmers, is plagued by political interference and lack of clear determination of role. While a new Director was recently appointed and is taking steps to get the organization sorted out, at the time this project was developed, assistance in the marketing area was judged to be inappropriate.

The transmission of available new technology to the rural areas was identified by the RTG as a priority effort to be pursued in the Fourth Five Year Plan. Given this RTG priority on extension and the quality of leadership and motivated staff in the DOAE, as well as U.S. expertise in the extension area, the decision was made to support the expansion of the DOAE.

2. Organization and Management

Parts IV-A (Organization and Management) and B (Administrative Arrangements) provide detail regarding the new organization of the DOAE and how the Project will be administered. As is noted in these sections, significant reorganization and delegation of authority will be carried out through the Project. A series of organization and responsibility charts have been developed by the RTG and USOM to assist in this effort, particularly regarding coordination with other agencies such as the Department of Agriculture, BAAC, etc.

3. Role of the IBRD

The IBRD will be the major donor to the extension improvement effort. Their role is discussed in the Logical Framework narrative (Part II-B), the Financial Plan (Part III-B) and in Annex E (Proposed IBRD Loan) to this proposal. There has been close coordination between USOM and the IBRD during the entire Project design stage.

4. Selection Criteria and Incentives for Tambon Agents

Adequate numbers of trained personnel with qualifications necessary to become Tambon Agents are availible from Vocational Agricultural Schools in the areas where the Agents will work. Part III-A-3 provides detail regarding the recruitment of personnel and incentives. Part III-C-3 provides details regarding the Tambon Agent qualifications. The role of Model Farmers, the village level contacts for the Tambon Agents, is also discussed in this section.

5. Feedback Systems

Considerable effort has been expended during design of the Project to develop provisions to assure that the RTG is responsive to farmer needs and that a system is formalized to assure continued responsiveness. A significant part of this effort is a more direct linkage of extension and research activities. Parts III-A-2-h, III-A-4, III-C-3, and IV-B-1 of the Paper address this critical issue.

6. Evaluation

Evaluation will be an integral part of the management process with major evaluations planned in 1978 and 1980. The logic of evaluation will be based on the number of Tambons covered by the Project, the number of successful demonstration within the Tambon, the rate of adoption of new techniques by farmers in the Tambon and finally the increase in income of the Tambon farmers. Part IV-D provides the details of this issue.

6 A. RTG Evaluation Support

The evaluation capability of the MDAC is adequate to support this project and is expanding rapidly. Within the DOAE, a Planning and Evaluation Section was recently established and will be responsible for all DOAE evaluation activities. This group is familiar with the logical framework concept, PERT and other design techniques and is aware of its importance and is utilizing proper evaluation techniques.

The Projects Division of the MOAC is responsible for evaluations of all MOAC projects. This group is well trained in proper project design and evaluation techniques. USOM is furnishing a full time U. S. technician to assist this Division with further development of this design and evaluation capability.

In addition to USOM assistance, the UNDP Development Support Communications Service has been assisting the DOAE with development of their evaluation capability.

7. AID Participation

The RTG request for AID assistance is based on a long standing respect for the U. S. Extension Service and prior AID assistance to the Thai Extension Service. Details are provided in Part II-A-4.

8. Reaching Poor Farmers

The magnitude of this Project assures that large numbers of Thai farmers including lower income farmers will be reached. Part III-A-2-g and Parts III-C-1 and 2 address this issue directly.

9. Beneficiaries Participation

Special efforts have been and will continue to be made to assure maximum participation of farmers in design of the programs that will impact upon them. These efforts are discussed in Part IV-B.

10. Responsive Management

The DOAE is reorganizing to be more responsive to the personnel problems of their lower level employees as is discussed in Part IV-A. Part III-A-3 discusses the personnel systems as it affects District and Tambon Agents.

11. Cost Breakdown and Analysis

Part III-B provides detailed discussion of this issue.

12. Role of Women

Women are already well represented in the DOAE and their role will expand through this Project. See Part III-C-4 for details.

13. Environmental Impact

This critical issue will be addressed by AID/W.

14. Pressure to Expand

Pressure to expand the scope of the Project beyond the present 33 Provinces and 1 to 4 crops per Province may come about. The RTG understands the implementation and training problems associated with any departure from present plans. A sound implementation plan will be used as evidence to convince those who wish to expand that it is not advisable. See Part IV-C.

15. Crop Emphasis

Crops to emphasized will be selected on the basis of local farmer desires, as well as economic and market considerations. Part IV-B discusses administrative

arrangements to cope with this issue in detail. The MOAC Division of Agricultural Economics will be a key agency in determining potential crops to emphasize.

16. Availability of Personnel

Adequate personnel are available. Part III-A-1-f explains the situation regarding their availability.

17. Dropout/Turnover Rate

The dropout/turnover rate is not expected to be excessive. All paid personnel will be full time Civil Servants and applicants will be carefully screened. Work incentives (see Part III-A-3-c) are planned to maintain employee interest. The available personnel far out-number openings so any dropout positions can be easily filled. Attendance at training sessions is sufficiently flexible to cover training requirements for recruits filling any vacated positions.

18. Farmer Credit

The credit situation is discussed in detail in Part III-D-4. For maximum Project impact on farmer income it is estimated that ฿5,120 million is required for credit over a nine year period. By 1981 the annual lending capacity of the BAAC alone is expected to be ฿13,600 million, thus the credit required for this Project can easily be supplied. The sensitivity analysis (Part III-D-5) illustrates that even if credit is not forthcoming, the Project has a substantial economic return, although the potential increased farmer income will be lower.

Even though extension without credit is a sound investment (Part III-D-5), special efforts will be made to make credit an integral part of the Tambon Agents activities and assure a close relationship between them and the BAAC field representatives.

19. Marketing

Part III-A-5 discusses this issue in detail and illustrates that marketing of production increases should not be a problem.

20. Other Agricultural Inputs

The administrative arrangements of the Project are set up at the Provincial and National levels to assure that

any needed off-farm inputs such as seed, small amounts of pesticide and fertilizer will be available on a timely basis. Seed and pesticides will be available from existing DOAE activities and fertilizer from the Marketing Organization for Farmers. In addition the RTG is discussing an expansion in its fertilizer production capability through a joint venture with Agrico*. Parts IV-A and B discuss administrative arrangements to plan for and to assure input availability. Part III-A-2-f discusses the Project's technical validity versus available inputs.

21. Adequate Space for Training

Detailed discussion of this issue is in Part III-A-1-e. Training facility construction financed by the IBRD is scheduled to meet training space needs. To allow for immediate construction starts IBRD has made funds available from their Northeast Rural Development Loan.

22. Effect of an IBRD Loan Delay

The IBRD has allowed the RTG to finance immediate needs for the Extension Project from the existing Northeast Rural Development (NERD) Loan. Vehicles and equipment needed for the AID element of the Project are now being ordered using the NERD Loan. Any unexpected delay in the IBRD Loan will therefore not affect the AID element.

*U.S. based fertilizer company.

PART II: PROJECT BACKGROUND AND DETAILED DESCRIPTION

A. Project Justification

1. Background

Over the past ten years the RTG has been allocating resources to agriculture at an accelerating rate. Agricultural credit available to farmers has increased over ten-fold, to a present level of about $256 million (see Part III-D-4). The budget for agricultural research and extension has been rising at a rate of 30% a year, accelerating in recent years to a level of about $25 million. While considerable research has been misdirected and not relevant to farmer needs, a significant repertoire of profitable new technology for the average farmer has been developed (see Table III-A-2). Typically however this new technology is not being used by the average farmer.

The Thai Agricultural Officials are confident that the present gap between available research and actual farm yields can be significantly reduced. Action is needed to expand and improve the quality of the Extension Service. Extension activities must be streamlined and systematized. Numbers of extension personnel must be increased and they must be better trained. This means an improvement in training activities and extension methodology. The National Extension Improvement Project is a major step in this direction.

The Project will reach 2,200,000 farm families who make up 60% of the rural population and cultivate 54% of Thailand's rice, 75% of the corn, 92% of the kenaf, 77% of the mungbeans and 70% of the cassava. In all cases yields are relatively low. The opportunities for increasing production through the opening of new lands have been exhausted. Past and present projects in Thailand with accompanying surveys have shown that a regular systematic extension service which focuses on a few of the major yield or production constraints can provide a major contribution to increased production and incomes from individual farmers. AID has had similar experiences in other countries.

There is still considerable opportunity to increase the productivity of crops in all the Project provinces, even without the increase of agri-inputs such as fertilizer and pesticides. The design of this Project is based on the premise that, even if all other inputs remain static, it is still possible, through extension efforts as envisaged in this Project, to increase production.

2. Problem Definition

The task of reaching Thailand's 3.6 million farm families with agricultural technology currently falls upon approximately 2,365 Extension Agents--a ratio of one Extension Agent to about 1,700 rural families (about 10,000 people). The number effectively reaching farmers raises the ratio to 1:4,000. With highly sophisticated farming operations and an efficient extension service, this ratio might be adequate to maintain continuous communication between the knowledge sources (research) and the implementers (farm families). Although the Department of Agricultural Extension (DOAE) has made significant progress in the past five years it is still enduring the growing pains from its creation, in 1968, by combining extension activities of several Departments of the Ministry of Agriculture and Cooperatives (MOAC) into one entity.

The DOAE is headed by a Director General, who is assisted by two Deputies. The Department is divided at the headquarters level into nine Divisions with extension, technical and administrative responsibilities. The Divisions have not been grouped functionally, and the Deputy Directors General have not been allocated formal responsibility over specific Divisions. Consequently the headquarters Divisions lack proper guidance and direction. In the field DOAE is loosely organized into six geographic regions which are subdivided by the boundaries of the political jurisdictions, including 71 Provinces (Changwats) and 620 Districts (Amphoes). Here too lines of command are not clearly drawn. The Regional Extension Officer has no direct supervisory responsibilities over the Provincial Extension Officers in his region, who report directly to the Director General.

In each provincial office there are about ten extension and administrative personnel and one Subject Matter Specialist. There are usually one District Extension Officer and two Extension Agents in each District. Within the 33 Project Provinces there are 332 Districts with 396 District Extension Officers and 624 Extension Agents, or a total of 1,020 extension personnel of all grades to serve 2.2 million farm families giving a District Extension Officer-farmer ratio of 1:2,150. Due to the administrative and regulatory tasks of extension personnel the effective ratio becomes about 1:4,000.

Extension personnel are usually appointed from urban areas and are mostly inexperienced, inadequately trained, and lack confidence in dealing with farmers. There is no system of regular visits to farmer groups and there is

no provision for regular staff training. Only a limited number of demonstration trials are laid out and extension staff members are excessively involved with regulatory and administrative duties.

Agricultural research is mostly carried out by the Department of Agriculture, but universities, Regional Agricultural Centers, the Tobacco Monopoly and a few other organizations also conduct basic and applied research. There is little or no liaison, formal or informal between extension and research in most provinces. Because extension staff members are not always informed about the latest research findings applicable to their areas of responsibility, outdated techniques are often recommended to farmers.

An acute shortage of Subject Matter Specialists exists at the field level; only one Subject Matter Specialist is stationed in each Province and three to five Subject Matter Specialists at the Regional Headquarters. This very small pool of Subject Matter Specialists is unable to provide adequate technical support to the District Extension personnel, particularly in view of their lack of access to vehicles. The Subject Matter Specialists also rarely have sufficient time to mount training programs or to establish the regular contact with research personnel required to keep them informed of new developments. The shortage of Subject Matter Specialist staff is not due to a lack of trained Thai manpower, but rather to a lack of funds for DOAE staffing.

Extension personnel are inadequately accommodated in the Provincial and District offices, where they all usually occupy a single office. This office also serves as a storage for seeds, pesticides, spray equipment, etc. Staff members are not sufficiently mobile to pay regular visits to farmers, farmer groups or other agricultural organizations, and they lack implements and agricultural equipment for field demonstrations and audio-visual aids for group meetings.

The total professional staff complement of DOAE is 2,365 in six salary grades. Less than half of these officers have direct contact with farmers. The total extension budget of DOAE has increased from US$7.9 million in the 1974 Thai fiscal year to US$11.9 million in 1975 and to US$12.5 million in 1976. In the 1976 fiscal year this amounted to about US$2.70 per farm family and about US$0.70 per hectare of cultivated land (18 million hectares). Although budgetary allocations have been increasing in recent years, inadequate funding is still a contributing factor to the specific shortcomings described above.

3. Responsiveness of the National Extension Improvement Project

The technical talent necessary to vitalize the National Extension Service is not lacking in Thailand. The missing ingredients which have precluded spontaneous development of the service have been:

(i) A clear-cut objective and people dedicated to achieving it;

(ii) The budget to pay for a greatly expanded field staff;

(iii) A budget adequate to provide mobility for the field staff;

(iv) A system of in-service training to motivate staff and to keep them up-to-date in their fields.

These impediments are being addressed by the RTG as it seeks financial and technical assistance from the IBRD and from A.I.D. in tripling the number of Extension Agents over a four-year period and in upgrading its staff through an extensive system in in-service training.

The Royal Thai Government is asking the IBRD's assistance in the form of a $28 million loan to provide physical facilities (regional training centers, provincial office space and meeting rooms, District and Tambon offices and some residences), vehicles and other commodity support, overseas scholarships, five technical advisors, and budgetary support. Details of the IBRD role are included as Annex E to this Project Paper.

The RTG has asked A.I.D. to assist in the "software" element of the overall project, i.e. the planning and conducting of the various training courses to be provided at the different levels within the country's extension service. A loan of $3 million will provide about 50 work-months of full-time technical assistance (extension training advisor), about 15 work-months of consultant services (short-term U.S.), intermittent consultant services from sources within Thailand such as the UNDP Development Support Communication Service (DSCS) and internal travel and training costs.

Presently available training facilities, previously provided under AID, FAO and other projects, can be utilized for the early training operations. As the Project accelerates

in ensuing years the new facilities provided through the IBRD loan will accommodate the expanding efforts.

To enable Project personnel to grow into the rather ambitious training and extension program, the first year's activities will be restricted to only four provinces in Northeastern Thailand. This is considered to be one of the neediest areas for the Project objectives and will provide a relatively small "bite" for the Project's first step. After the initial year's effort, the Project will expand into about 10 additional provinces each year.

The Project will have a four-year life and will concern 33 of the country's 71 provinces. (Although less than half of the total provinces, this will involve about 60% of the farm population of Thailand). It is estimated that the present staff of about 1,300 workers will require initial and annual in-service training of from 3 to 5 weeks. Upwards of 2,900 additional extension workers will be engaged during the first four years. They will probably require from 5 to 8 weeks of pre-service training, to be followed by fortnightly one-day sessions and annual refresher training of 3 to 5 weeks.

This expansion and improvement of the Thai Agricultural Extension Service in the first 33 Provinces is planned to coincide with the Kingdom's Fourth Five-Year Development Plan. The determination of the degree and rate of continued expansion of the Project throughout the country will be made by the RTG during the latter years of the Project.

4. <u>The Value of AID Participation</u>

The RTG has a strong preference for U.S. assistance with the critical training component of the National Project. The RTG has high respect for the achievements of the U.S. Extension Service and would like to build on the close working relationships developed in past years through the training of Thai officials in the U.S. and through U.S. advisory services in Thailand.

USOM has been involved for over 20 years in assistance to extension in Thailand. Within the Department of Agricultural Extension alone, there are over 140 officers who have had training in the U.S. Much of the present District-level staffing was initiated with USOM-assisted projects. The Ministry of Agriculture and Cooperatives is looking to the U.S. not only for financing but for guidance--on how to make the critical component, the training from

bottom to top, effective in transmitting new technology from the research station to the farmer.

The DOAE initially approached USOM for financial assistance in all aspects of the Project, including building construction, equipment, and incremental operating costs. We advised the Thai officials that AID interests and budgetary constraints made this kind of assistance impossible. We did express a desire to help in the qualitative improvement aspects of the Project, i.e., activities that assure effective job performance by extension personnel at the lowest levels.

B. Detailed Project Description

The following is a description of the "total" Project, the National Extension Improvement Project, with RTG, AID, and IBRD inputs identified as necessary.

1. Goal

The Project goal is to increase the income of people living in the rural areas of Thailand, with special emphasis on the poorer small farmers.

It is projected that the Project will enable farm families in 33 participating Provinces to increase annual incomes by $125-$200 on the average by 1985. This benefit should extend to 1,760,000 of the 2,200,000 families in the Project area or 48% of the national total.

2. Purpose

The Project purpose is to establish an improved flow of information to and from the farm population in 33 provinces which will:

(i) enable the farmer to make better informed decisions;

(ii) cause him to use improved farming techniques; and

(iii) enable him to convey his views and needs to the "bureaucracy".

The Project is proposed for a four-year duration, with implementation to proceed progressively among the 33 Provinces as follows: Year I - 4 Northeastern Provinces; Year II - 5 Southern Provinces and 6 Central Provinces; Year III - 3 Central Provinces and 7 Northern Provinces; and Year IV - 3 Central Provinces and 5 Northeastern Provinces. By December 1980, the end of the four-year period, it is expected that the following conditions will prevail in each of the 33 participating Provinces:

a. An effective system of pre-service and in-service training will be in operation to maintain and upgrade the capabilities of existing extension personnel and to supply qualified new recruits as needed;

b. The Extension Service will have expanded to provide effective village-level coverage, with the ratio of Extension Agents to farm families served reduced from the present 1:1,700 (effectively 1:4,000) to 1:800 and the average frequency of Agent visits per village being at least twice a month;

c. Agricultural research personnel, Extension Agents, and Model Farmers will interact on a regular basis on field demonstrations at the village level;

d. The percentage of farmers who have adopted improved cultivation practices suggested by the Extension Service will average 75%;

e. In an average village, farm yields on 1 to 3 crops will have closed, by approximately 30%, the current gap between current and potential yields (see Table III-A-3, Major Crop Innovations).

f. Farmers' views and needs will be routinely conveyed to planners, researchers, and extension supervisors at the Provincial, Regional and National levels and will be an important factor in formulating annual agricultural development plans; and

g. The RTG will begin expansion of the Project to cover the remaining 38 provinces.

Assumptions for Goal Achievement

It is expected that the end-of-Project conditions will be sufficient to achieve the Project goal if the following assumptions remain valid:

(a) Present and planned marketing systems will absorb production increases at prices that assure a fair return to the farmer.

Marketing arrangements are discussed in the Technical Analysis (Part III-A-5). Basically, we expect that existing marketing arrangements reinforced by the expanding role of the Marketing Organization for Farmers can effectively handle the production increases projected.

(b) The delivery system for production inputs can adjust to and accommodate increased demand resulting from this Project.

The Thai delivery system for production inputs is discussed in the Technical Analysis (Part III-A-2-f). On the basis of this analysis, we do not believe that additional requirements for seed, pesticides, fertilizer, water, etc., will pose a constraint to goal achievement.

(c) The credit supply for agricultural development will continue to grow at least one-half as fast as projected by the RTG.

Credit availability and the operations of the Bank for Agriculture and Agricultural Cooperatives (BAAC) are discussed in the Economic Analysis (Part III-D-4).

The present rate of expansion of BAAC branch offices and staff and the progress of legislation to increase the BAAC's capital stock provide grounds for confidence that sufficient credit will be available for the needs of this Project.

3. Outputs

The Project is designed to produce the following specific outputs:

a. Development of crop-specific training modules that will be progressively condensed for use at each lower level of the Extension Service hierarchy and finally resulting in a practical field manual for the Extension Agent's use. Initially modules will be introduced for 1 or 2 crops per

District and as the Project progresses, modules for additional crops will be prepared.

b. Training of top-level administrators and trainers who will be responsible for preparation and presentation of training courses at all levels. The initial Train-the-Trainers Workshop will be held in December 1976, before loan implementation begins, for National and Regional personnel and for two trainers for each of the four North-eastern Provinces where first-year implementation has begun.

c. Pre-Service training of the 2,900 new personnel to be added to the Extension Service in the 33 participating Provinces, including 210 new Subject Matter Specialists and 2,500 Extension Agents. Also in-service training periodically throughout the implementation period of all Extension Service personnel.

d. Development of video-tape recording (VTR) and other audio-visual capabilities in each region and production of VTR/audio-visual materials for repetitive use.

e. Establishment of National and Provincial Coordinating Committees to coordinate multi-agency inputs into the Project, e.g., DOAE, Department of Agriculture, Division of Agricultural Economics, BAAC, etc. Also establishment of Provincial Technical Advisory Committees to recommend priorities for future work in agricultural research and extension.

f. Establishment of routine communication channels for farmer views. Farmers will be systematically consulted on the subject matter content and priorities of the Project for the coming year. This will be done on both an informal basis through the frequent contacts of the Extension Agent and on a formal basis through annual reports by the Extension Agents to the Provincial Committees. Farmers' Associations are or will be formed to represent farmer interests to the Technical and Coordinating Committees.

g. Completion of successful field demonstrations of improved farming techniques.

In addition, the following outputs are expected to result from the IBRD loan:

(i) Improved organization and management;

(ii) Expansion of the Extension Service in the 33 participating Provinces--addition of approximately 2,900 personnel.

(iii) Completion of new extension facilities:

- 3 Regional Training Centers
- 33 Provincial Extension Centers
- 332 District Extension Centers
- 630 houses for Extension Agents

4. Fundamental Project Methodology

In every Tambon there is or shortly will be a Farmers' Association. It is primarily an extension organization, not a supply-marketing-credit entity. It may, however, organize farmers for credit; the BAAC is funneling a small but rapidly increasing portion of its loans through these Farmers' Associations.

The Farmers' Association is divided into Small Farmer Units, one in each village. Each Small Farmer Unit elects one or two members to the executive committee of the Farmers' Association. Each Small Farmer Unit will be involved in selection of a Model Farmer, the primary extension contact and demonstrator in the village. The Tambon Extension Agent will thus work primarily with the Model Farmer. He will, in some measure, work with the Farmers' Association Executive Committee and be responsible to the Farmers' Association as well as to the DOAE.

In most Project Tambons there is already an organized Farmers' Association. In those where there is not, the present District Agents will call the necessary meetings and explain the benefits of a Farmers' Association under the proposed Project, encouraging the formation prior to the arrival of the new Tambon Agent. This process is scheduled in the Implementation Plan (See Part IV-C-6) to occur between the 13th and 32nd week. Ample time is allowed so the farmers can organize themselves and identify leaders with minimum outside assistance.

The Tambon Extension Agent will assist Model Farmers, providing very limited amounts of material, to set up demonstrations on one to three crops. This demonstration is the core of the whole operation. The Tambon Extension

Agent visits the village once every two weeks, making the full round of the villages in the Tambon roughly twice a month.

Tambon Extension Agent visits to the village take four forms:

- On some visits he only contacts the Model Farmer, assisting on the preparation and maintenance of the demonstration. He may pass on certain points of emphasis on practices for the current part of the season which the Model Farmer then may communicate to others in the Village.

- On some visits he assists in a full meeting of the Small Farmer Unit, preferably at the demonstration site, particularly when it is time for a practice or results demonstration. Some of the meetings are for organization and feedback, to organize borrower groups for the coming season or to get farmer views on the program for the coming season.

- On some visits he may visit the actual fields of farmers who are in the process of adopting new practices, to see how they are coming along and to provide follow-up guidance on adoption of practices. Such visits may be in the form of a walk-through of the fields of several farmers, with a group of neighboring farmers.

- Some visits may be for the purpose of collecting yield samples from some of the farmers at harvest time.

A basic assumption or key element in the logic of the total Project is that farmers will not adopt practices because an official has told them to do so, but only because they have seen a successful demonstration* of those practices with their own eyes. The Tambon Extension Agent communicates essentially through demonstration, through enabling the farmer to see how new crops and new practices can work and how they can earn, right in their own village on their field or that of one of his own friends and neighbors.

The Tambon Agent is to be selected from the same Region, preferably the same Province or even District or Tambon. Candidates for Tambon Agents positions will generally be graduates of Vocational Agricultural Schools, usually from farm families.

***See III-D-2 for a definition of a successful demonstration.**

A key concept of the Project is farmer participation. Individual farmers are systematically consulted on the subject matter content and priorities of the program for the coming year. In addition, the Tambon Extension Agent reports regularly to the Executive Committee of the Tambon Farmers' Association and, in a sense, works as a subordinate to the Tambon Farmers' Association.

Assumptions for Purpose Achievement

It is expected that the planned outputs will be sufficient to produce the end-of-Project conditions if the following assumptions remain valid:

(a) The DOAE will create a progressive career system to motivate extension personnel through advancement opportunities and other incentives.

The personnel plans of the DOAE are discussed in the Technical Analysis (Part III-A-3). Further work is necessary to structure a responsive personnel management system, but the DOAE accepts the principles underlying the assumption.

(b) Crops and practices demonstrated will represent sound innovations for specific conditions in various agro-economic zones.

Table III-A-3 delineates farming innovations on a zone-by-zone basis. The function of the newly-formed Technical Advisory Committees is to evaluate the relevance and success of field demonstrations and recommend modifications in the research/extension program accordingly. The MOAC Division of Agricultural Economics will also be involved, using their farm level modeling techniques.

(c) Innovations will be equally relevant to farmers with smallest land-holdings and lowest disposable incomes.

Many of the innovations that will be introduced require a change in practices with minimal requirement for additional inputs; these innovations are highly relevant to the poorest farmers. Per Part III-A-2-g, smaller farmers may actually have a comparative advantage in adopting some labor-intensive innovations since their labor/land ratio is higher.

(d) The increased availability of other inputs, including credit, is not critical to the Project success but

will influence, to some degree, the financial returns to the farmer.

This assumption is discussed in the Economic Analysis (Part III-D), and is considered to be valid.

(e) Project pacing assumptions used in the Economic Analysis (Part III-D) are roughly valid.

These assumptions are detailed and justified in the Economic Analysis section. They will be appraised periodically throughout project implementation.

5. Inputs

The AID loan will finance the following inputs:

a.	Advisory services (4 years of long-term services and 15 mm of short-term services)		$490,000
b.	Incremental training costs		2,183,000
	(1) Per Diem	752,000	
	(2) Travel	46,000	
	(3) Training courses	490,000	
	(4) Training Material, Supplies & Equipment	496,000	
	(5) Training Staff Salary	399,000	
c.	Contingency & Inflation Factors		327,000
	Total		$3,000,000

In addition, AID will provide $100,000 in grant funds for Project evaluation services ($75,000) and critical implementation events, e.g. contractor procurement ($25,000).

The RTG will provide $27.5 million, distributed as follows:

Construction costs	$3.25 million
Incremental operating costs	24.25 million
	$27.50 million

The IBRD loan will provide $28.0 million, distributed as follows:

Construction costs	$10.8 million
Equipment cost	10.9 million
Training	0.8 million
Technical assistance	3.0 million
Physical contingencies	2.5 million
	$28.0 million

Assumptions for Achieving Outputs

It is expected that the planned inputs will be sufficient to produce the outputs if the following assumptions remain valid:

(a) Extension Agents can be sensitized to the need to treat farmers as equals.

The importance of a proper attitude will be emphasized in the training program, in field visits by supervisory personnel, and evaluation of job performance by Extension Agents.

(b) Sufficient numbers of qualified personnel will be available to fill new positions in the Extension Service.

In 1974, Thai universities provided a total of 99 Masters and 816 Bachelor degrees in agriculture-related subjects. This level of qualification is suitable for Regional and Provincial Officers and Subject Matter Specialists. Vocational Schools annually award 850 certificates from five-year courses and 1,600 from three-year courses. These graduates are qualified candidates for Extension Agent positions.

(c) The cooperation of village leaders and model farmers can be obtained.

Satisfactory cooperation has been obtained in the past on pilot village-level extension schemes that involved "farmer foremen" who performed functions similar to the Model Farmer proposed under this Project (See Part III-C-3).

C. The Training Component

Training under the AID component of the National Project will cover 33 of Thailand's 71 Provinces and will impact on 2,200,000 farm families.

Training will be focused on all levels of the Extension hierarchy--Tambon, District, Province and Region.

The numbers of geographic entities to be affected by the training in each year of the Project are indicated on Table II-C-1. The numbers of training sessions to be held and the personnel to be trained are shown on Table II-C-2.

To be effective in their roles as communicators, DOAE personnel, who work at the lower levels, must understand not only the improved cultural practices to be imparted to the farmers but also the best ways and methods to impart them. Subject Matter Specialists responsible for teaching the Extension Agents the technical details must also know how to teach if they are to effectively get their points across. All concerned with the Project, from almost any aspect, must have a thorough understanding of the Project if they are to be motivated to contribute fully to its success.

1. Types of Training Envisioned

The training program delineates into four distinct types of subject matter: (1) project operations and management; (2) development of training compentency; (3) agricultural technology for two or three of the most important crops in each Province; and (4) extension methodology and communications.

These programs are discussed in further detail below.

a. Project Operations and Management (Project Leadership)

A prerequisite to the launching of activities in any region will be a thorough understanding of the Project by the chief implementers and decision makers at National, Regional, and Provincial levels, Directors General, Governors, etc. These initial top management meetings will be chaired by the DOAE Director General and will provide participants, at the onset, with a show of his firm support of and interest in the Project. He will explain the objectives of the Project and its relationship to the Nation's development plans.

TABLE II-C-1

Training Coverage By Geographic Entity

	Cumulative Number Covered by Fiscal Year			
	Year I (1977)	Year II (1978)	Year III (1979)	Year IV (1980)
Villages	6,275	14,050	20,920	29,000
Tambons	523	1,495	2,354	3,163
Districts	51	153	250	348
Provinces	4	15	25	33
Regions	1	3	4	4

TABLE II-C-2

Numbers of Training Sessions (S) and Personnel Involved (P)*

Personnel	1977		1978		1979		1980	
	(S)	(P)	(S)	(P)	(S)	(P)	(S)	(P)
Regional/Provincial Officers (2 weeks each session)	1	40	3	150	6	250	8	330
District Officers (4 weeks each session)	2	60	5	170	8	280	12	400
New Tambon Agents (5 weeks each session)	17	523	32	972	29	859	27	809
Existing Tambon Agents (2 weeks each session)	—	—	17	523	50	1495	79	2354
Totals	20	623	57	1815	93	2884	126	3893

* Table does not include regular fortnightly district courses to be held for Tambon extension agents at every district headquarters. These will be one, or possibly, two-day sessions primarily dealing with work to be undertaken during following two weeks. These sessions will also include a review of past activities with emphasis on how to deal with problems encountered by the extension agents during their regular work rounds. There will be 25 of these training sessions every year in each district, so the annual number of such sessions over the life of the project is projected as follows:

1977	1978	1979	1980	TOTAL
1,275	3,825	6,250	8,700	20,050

Other members of the National Extension Staff who will attend these sessions will include the Deputy Director General, who will outline the lines of communications between the National and Provincial levels; the National Project Manager, who will explain the implementation schedule and operations to be carried out at the District and Tambon levels; the National Training Officer, who will provide details of the training programs and responsibilities for training; and, the Planning and Evaluation Section Chief, who will discuss evaluation plans and procedures.

In addition to those already mentioned, others attending the sessions on Project Operations and Management will include Regional Extension Staff (Director, Assistants, Subject Matter Specialists, Training Officer), Provincial Governors, Provincial Extension Staff (Director, Assistants, Subject Matter Specialists, Training Officer) of the concerned areas. This will be a total of about 40 people in Year I and will increase somewhat in subsequent years.

The plenary session will require about a half-day and at least another half-day will be required to explain, in detail, the Project objectives, operations, lines of responsibility, implementation schedule, reporting system, evaluation, etc. About two more days will be needed by the Regional and Provincial staffs concerned for detailed planning for subsequent training programs to be carried out in their respective areas. Provincial Extension Officers will be responsible for relaying the pertinent information from this Project Operations and Management meeting.

As in all Project-related training presentations, a resume will be provided to each participant to assure that each has the salient facts presented during the session in written form for future reference. It is conceivable that changes may be necessary in the modus-operandi as the Project unfolds. Such alterations will be communicated in written form to the affected staff members.

Project Operation and Management sessions will be held each year in the Region being incorporated into the Project that year.

b. Train-the-Trainers Workshops

To ensure that those Extension Officers who have training responsibilities will have developed the pedagogical skills and competencies necessary for the success

of the Project, Train-the-Trainers Workshops are to be scheduled. The first of these, to be attended by the Trainers who will be responsible for training in the initial four Provinces in the Northeast is scheduled for December, 1976. Attending this initial Workshop will be the following Extension personnel:

National Project Training Officer
Assistant National Project Training Officer
Extension Subject Matter Specialist in National Training Office
Assistant Extension Subject Matter Specialist in National Training Office
Regional Training Officer
Regional Audio-Visual Specialist
Four Provincial Training Officers
Four Provincial Audio-Visual Specialists

As the attendees of this first Workshop will set the tone for almost all future training under the Project it is imperative that they receive the best training possible. Arrangements have been made (using grant funds) for two U.S. Extension Training Specialists to assist and advise in the design of the Workshop and its course content, to assist in conducting the Workshop, and to evaluate the materials prepared by the attendees. The National Institute of Development Administration (NIDA) which has the capabilities to conduct training in the field of project management and training trainers has indicated a willingness to assist and will be utilized.

The first week of the Workshop would serve to determine the principal emphases needed to enhance the teaching effectiveness of staff members at all levels. Model presentations will be made by and for the Workshop group for critique purposes. Use and development of visual and audio aids will be discussed and participants will gain practical experience in their use and preparation. Detailed lesson plans will also be developed.

Immediately following this Train-the-Trainers Workshop, all of these staff members will participate in the first one-week Extension and Communications Training Session for upper level Regional and Provincial Extension staff, i.e, those officials who will be conducting the first echelon of subject matter training. This should contribute to the teaching effectiveness of the upper level staff. The Training Officers will then assist in refining all training activities within their jurisdictions, including the presentation of the Extension and Communications Training to all Extension

Officers. (District and Tambon Extension Agents will be given the Extension and Communications Training after they receive subject matter training and before they start their activities with Model Farmers.)

Later groups of Trainers will be exposed to similar activities in subsequent Train-the-Trainers Workshops and Extension and Communications Training Sessions.

Annex B-1, "Train-the-Trainers Workshops", provides detailed information on what is to be included and what will happen in the Workshop.

The number of training personnel to eventually be named under the Project is shown on Table II-C-3.

c. Technical Training--Transferring Technology

The development of recommendations for various crops will require a search of existing resources in the Ministry, in universities and in other agricultural institutions in order to compile the best current cultural practices for a given crop in a given area. This activity is underway. At the same time a search will be made for the best teaching talent for each technical area. The composite of these two will provide the technical training for the Subject Matter Specialists (SMS's). The composite course might well involve several top researchers, or teachers, in crop varieties, pathology, weed control, entomology, cultural practices, cropping systems, etc. New SMS's at the Regional and Provincial levels will receive an intensive course on their areas of expertise. Other SMS's will be given about one week of refresher, up-date training on each crop or farming activity.

SMS's will also be given an insight into on-going research on crops. Discussions will be held to determine the possibilities for field trials of recent promising findings on farmers' land. Annual SMS refresher courses, to be held in ensuing years, will include a rundown of field trials with farmers during the previous season. Researchers will assist with the designing of each year's field trials so the observations will be meaningful and of benefit to them as well as to the farmers. Researchers will be encouraged to visit as many of the trial plots as possible during the growing season, especially at the more crucial stages. In addition to providing the expertise of the researchers, it will also allow for an interfacing between them and the farmers.

The Regional and Provincial SMS's, thus armed with the latest recommendations on a crop, will digest this technology into proportions assimilable and meaningful to District SMS's and District Extension Officers. This training will involve considerably more field practice because the District staff will be in frequent contact with farmers to explain the technology. This training course will require about one-week's time, would be given in advance of the cropping season.

The material presented to the District Officers then becomes the basis for the next more simplified training for Tambon Agents, again requiring a large proportion of actual field practice. They will in turn pass the information on to the Model Farmers for eventual dissemination to the rest of the village.

2. The Trainees

There are four categories of personnel targeted for the training:

(i) Administrative and Supporting Personnel,

(ii) Training and Training Aids Specialists,

(iii) Subject Matter Specialists, and

(iv) Extension Agents who are in direct and frequent contact with farmers.

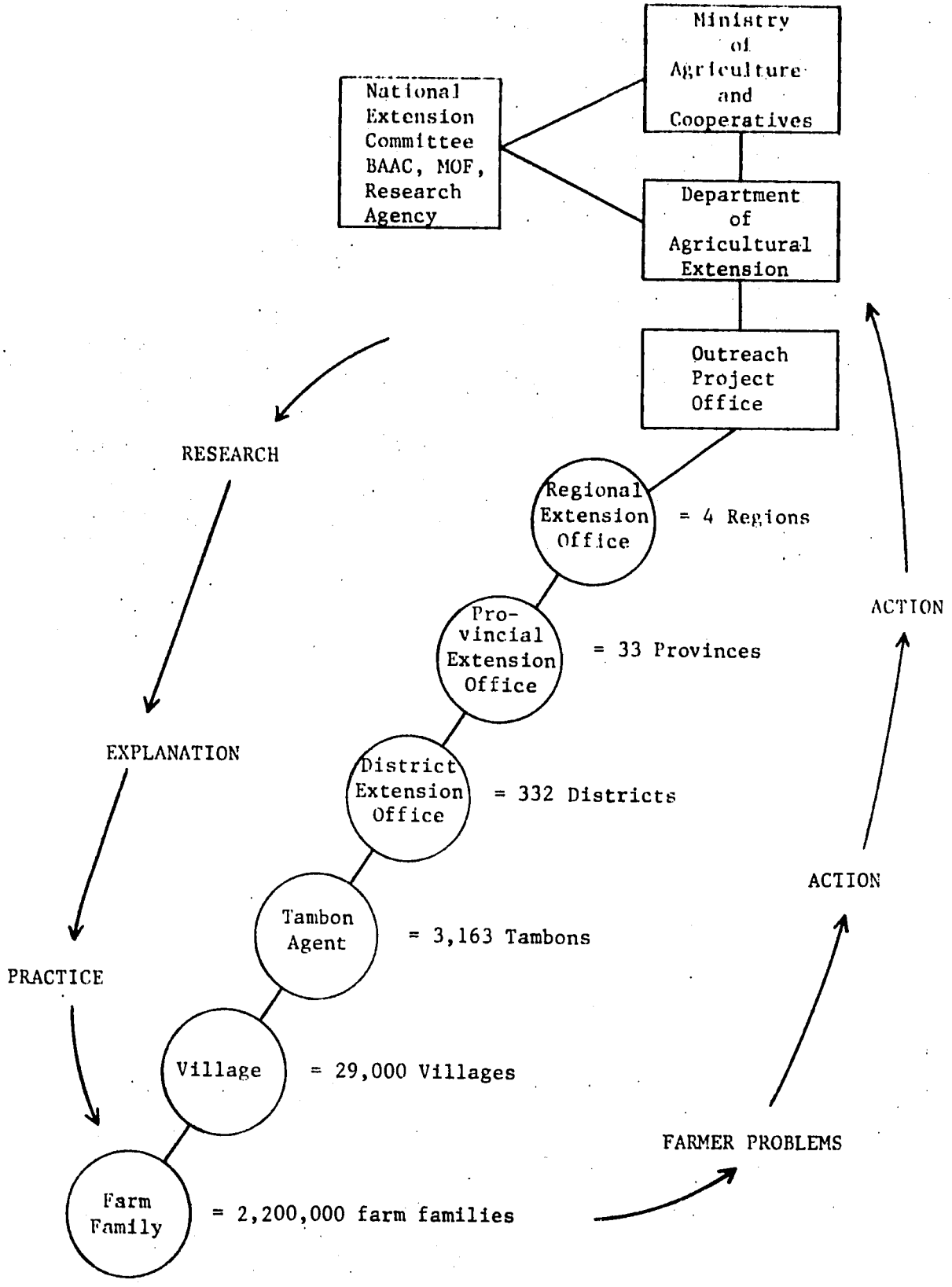
The depth of training in each field, required by each category of personnel is indicated in the following Table as being extensive (ext), moderate (mod) or low:

Type of Personnel	Proj. Opn. & Mgmt.	Training Competence	Agri. Tech.	Ext.Meth. & Comm.
Administrative & Support	mod	-	low	low
Extension Trng. Specialists	mod	ext	low	ext
Subject Matter Specialists	low	low	ext	low
Extension Agents	low	low	mod	ext

The magnitude of the numbers of people to be trained, the relationships of the personnel involved and the flow of information to and from the farm family is illustrated in Table II-C-6.

Table II-C-6

PROJECT MAGNITUDE, RELATIONSHIPS, AND INFORMATION FLOW



PART III. PROJECT ANALYSES

A. Technical Analysis

1. The Training Methodology

The AID assisted component of this Project is directly concerned with the content/system/methodology of training--focusing on the village farmer but with specific training for Extension Agents planned at the Tambon, District, Province, Region and National level. The magnitude and intensity of this training is great, however all essential elements are at hand to assure success of the Project. The concept is technically sound and employs a logical approach for reaching large numbers of rural families, principally by capitalizing on Thailand's own expertise.

a. The Module Concept

The modular approach for the development of course material and the conduct of training at different Extension Agent levels, e.g. Tambon, District, Provi ces, etc. has already been employed by the RTG, with AID assistance, in the Public Health Sector in the DEIDS Project in Lampang. Initial efforts in this Project illustrate that the concept is feasible and effective.

An MOAC pilot training session for key Provincial Agricultural Extension Officers, monitored by the Extension Outreach Design Team members, was held in August 1976 to pretest teaching methodology, provide an indication of present competency levels of staff, and provide implementing agent input into the training design. The translation of "module" into Thai language presented some difficulty, as did the actual preparation of crop modules by the working groups. Nonetheless, the 32 officers involved agreed that the approach is feasible for transferring technology from specialists to District and Tambon Agents and ultimately the farmer. See Part II-C-1 and Annex B-2 for details of the module concept to be employed.

b. The Use of Video Tape Recording and Other Visual Aids

The actual training operations will utilize a medium which is quite innovative to developing countries in achieving the accuracy, scale, and timeliness required. This is the use of color video tape recorders (VTR). In producing training materials in the quantity required.

Monochrome VTR has been used in Thailand on a relatively small scale by many RTG agencies and regular broadcast television is common throughout the country. The use of capsulated training material on video tape will permit the expanded use of the best teaching talent on tape cartridges duplicated and distributed as needed in the various training courses.

The DOAE presently has an audio visual unit in the headquarters office that has staff with limited experience in VTR and other visual aids. The DOAE has been working closely with the UNDP Development Support Communication Services (DSCS) that has extensive VTR and other visual aid production and training capability. This capability will be utilized by the DOAE in implementation of the Project.

At each Regional Training facility a VTR/Visual Aids production facility will be developed (IBRD financed) and staffed with an Audio-Visual Specialist, an Electronics Specialist, VTR Operator and a Cameraman and other personnel necessary for materials production. These people will work under the supervision of the Regional Training Officer. In addition each Province will have two Audio-Visual Specialists to handle the VTR/Audio-Visual equipment at that level and will have additional staff available for materials production.

All VTR/Audio-Visual equipment will be purchased using IBRD loan funds with equipment required for the initial four Provinces purchased from the existing IBRD Northeast Rural Developmant Loan. Procurement of additional VTR and Audio-Visual equipment will depend on adaptibility and effective utilization of equipment purchased for the Northeast. If determined successful, the additional equipment will be funded under the forth coming IBRD Extension Loan.

Training of personnel involved with VTR and visual aids will be provided to the DOAE's existing and new staff with external assistance from DSCS or possibly U.S. short term consultants.

See Annex B-4 for additional information on the use of VTR in training.

c. <u>The Appropriateness of the Training</u>

Training can consist of many things--it can treat the techniques of crop production, or farm record keeping, or how to motivate farm people, sources of credit and markets, etc. It can also teach personnel supervision,

evaluation of progress, and program planning. It can assist in the attitude changes which will be necessary in developing a cooperative spirit between Extension Agents and rural families. The first year's cycle of training will be concerned with crop production technology and extension methods. Using a Train-the-Trainers approach, cadre will be developed at National, Regional and Provincial levels to relay the subject matter to their jurisdictional areas. The system is designed to accept changes in emphasis or changes in subject matter in the future, e.g. more emphasis on credit, marketing, etc.

The effectiveness of the training component must be evaluated in the greater context of the entire extension program. The Tambon Extension Agents may earn a high final grade in their crop technology course--which could indicate that that training was effective. But until the Agents succeed in inducing positive changes among their farmers--the training has not contributed to the Project objectives. Extension training, then, must be concerned with Extension operations for a true evaluation, for a feedback on efforts to date, and for clues as to future needs in training.

d. The Phasing of Training

The Project has been broken into reasonably manageable "bites" over a four year period. The smallest bite in Year I will cover the training effort in four Northeast provinces, with subsequent bites of about 10 additional provinces each year. The Thai Project "managers" can thus grow into the responsibilities as they increase over the life of the Project.

An initial 6 week "Train-the-Trainers Workshop" is scheduled for December 1976 to prepare the fourteen key personnel involved with the training element of the Project in the first four Northeast Provinces. Training will focus on one or two technology packages the first year taking into account management of the training and the absorptive capacity of the trainees.

e. Training Facilities

Presently available training facilities are adequate for initial training planned under the Project.

In the Northeast the Northeast Agricultural Research Center at Tha Phra, Kalasin Irrigated Agriculture Center, and Khon Kaen University can be utilized.

In the North the Northern Development Center, Chiang Mai University, and Mae Joe Agriculture College can be utilized.

In the Central Region the Central Research Center at Chai Nat, Kasetsart University and Farm Suwan, NIDA, and miscellaneous training facilities around Bangkok can be utilized.

In the South the Rubber Research Institute, and Prince of Songkla University, can be utilized.

In addition to the specific facilities noted above, the numerous research stations, vocational agricultural schools, and other Ministry facilities such as the Ministry of Interior's Community Development Department Training Centers can be utilized.

These existing facilities plus the three new Regional training centers at Songkla, Chon Buri, and Nakorn Pathom, thirty Provincial Extension Centers, and 285 District Extension Centers, all funded under the proposed Extension Loan by IBRD will provide adequate facilities for training existing and new staff. IBRD will fund construction of facilities in the initial four Provinces from the on-going Northeast Rural Development Loan.

Table III-A-1 indicates the schedule for completion of training facility construction (financed by IBRD) and planned staff training requirements.

f. Availability of Trainers

The reservoir of Ministry staff members who have earned agricultural college degrees, either in Thailand or abroad, or both, is of great significance. RTG records show that there are presently 500 staff in the DOAE who have reached at least the baccalaureate level, 85 who have Master's Degrees, and 3 Ph.D's. There are 144 members who have earned at least one degree in the United States and 500 participants have studied agricultural extension in the U.S. and other countries. As of July 1976, there were 16 Thais undergoing extension training abroad. The number of people and the diversity of the universities which have provided this training gives a broad base for the diffusion of this technology to junior members of the extension staff. Existing talent will be transferred or loaned temporarily to this Project for its training functions. University staff, foreign agricultural experts currently stationed in Thailand,

TABLE III-A-1

Schedule for Staff Appointment and
Completed Training Facility Construction by Project Year
Status by Project Year

	1977	1978	1979	1980	1981	Total
New Training Facilities	11	82	91	92	42	318
Reg. Trng. Centers	-	2	-	1	-	3
Prov. Ext. Centers	1	8	9	8	4	30
Dist. Ext. Centers	10	72	82	83	38	285
No. of Trainees	623	1,815	2,884	3,893	3,363	12,578
No. New Trainees	623	1,292	1,389	1,539	200	5,043
No. for Retraining	0	523	1,495	2,354	3,163	7,535

It is important to note that although training facilities are needed for parts of the training planned at least 50% of the training will be practical non-classroom training in the field.

and members of U.N. agencies have given assurances of support. The technical talent to accomplish the envisioned training is not lacking in Thailand.

As noted in Part II-C (Description of the Training Component) the first group of Training Officers will have a vital role in the success of the Project. It is therefore critical that the DOAE's qualified staff move into these vital positions on a permanent basis to assure that the foundation for future training activities is sound. Selection is underway and progress thus far indicates the DOAE's sincere effort to fill the Training Officer positions with its top staff. All three of the DOAE's present Ph.D level staff will become a part of this core group; Dr. Adisak Sreesunpagit, Ph.D in Extension Education from University of the Philippines; Dr. Chulhathep Pongsroypech, Ph.D in Agronomy from University of Missouri, Columbia; and Dr. Thanya Terasart, Ph.D in Extension Education from Cornell University. In addition Mr. Kasem Jarinto, Masters Degree in Agriculture Education from Oklahoma State University will be involved. The two Regional and four Provincial level staff for this core group have not been selected yet.

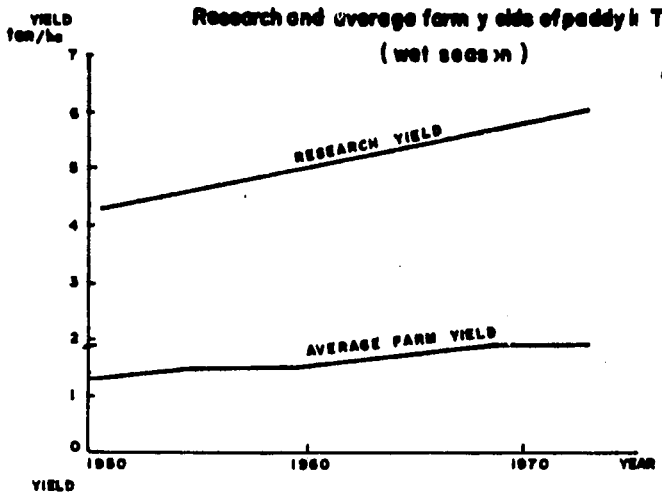
2. The Transfer of Technology

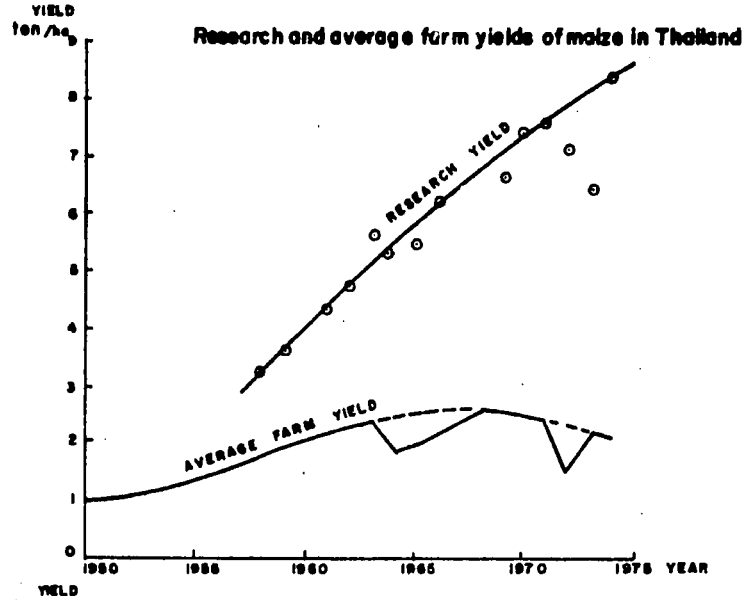
a. Summary

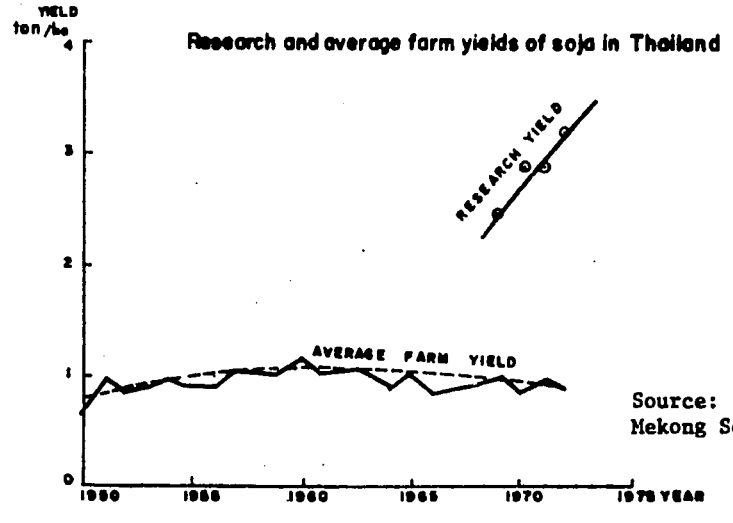
Current yields of most crops are low and substantial increases could be achieved if farmers would use available knowledge and inputs. Table III-A-2 illustrates the gap between available research and average farm yields for three important crops in Thailand. This does not mean average farm yields will in fact reach those attained in research, however, Thai and Foreign specialists agree that farm yields could easily be 50% of present research yields. These increases would far exceed those indicated in Table III-A-3 used in project benefit calculations. Yields indicated on these tables are yields attainable by the average farmer and are not yields achieved under ideal conditions at research stations.

The available technology for seven major crops is summarized on Table III-A-3, in terms of present and potential increases in yields, in numbers of growers, and in area planted (in rai, 6.25 to the hectare), in the 12 zones covered by the Project. There is a substantial repertoire of improved varieties and improved practices available. The most important are on rainfed rice. There are also new, short season varieties of upland field crops

Table III-A-2







Source:
Mekong Secretariat

MAJOR CROP INNOVATIONS

Table III-A-2

major crops	key new features & key practices	region & zone	present % of farms	present avRai grown	present avg yield	potential % of farms	potential avRai grown	potential avg yield
RICE	on rainfed rice, introduction of new Deep-Water-Tolerant Dwarf varieties, proper cultural practices, fertilizer	Northeast						
		2-4	93%	18	175*	93%	18	380
	on irrigated rice, in the Central Delta and the North, where High-Yielding Varieties are already being used, realizing the full potential through proper cultural practices and application of fertilizer	C Delta						
		11	70%	35**	330	70%	35	500
		C Fringe						
		7	90%	21	300	90%	21	450
		12	54%	20	225	54%	20	400
		13	83%	37	230	83%	37	400
	The DWTDVs have a potential of 400-480 kg/rai with fertilizer, depending on the degree of water control. The HYVs have a potential of 550-600 kg/rai.	North						
		6	91%	20	300	91%	20	450
		8	92%	33	300	92%	33	450
		9	90%	9	400	90%	9	550
		10	86%	7½	430	86%	7½	550
		South						
		17	85%	14	200	85%	14	400
MAIZE	New varieties have a potential 20% increase with proper cultural practices without fertilizer. Where the rainfall is reasonably certain (zones 6 & 7), application of fertilizer will bring yields up by at least 50% and into the 450-550 kg/rai range.	C Fringe						
		7	60%	40	183	60%	40	360
		12	18%	10	300	25%	10	360
		North						
		6	6%	24	350	6%	24	500
		8	23%	9	267	30%	7	320
		9	30%	6	200	30%	6	320
KENAF	Improved seed, proper cultural practices, and particularly proper retting. Note that kenaf-growing is declining in competition with more profitable new crops.	Northeast						
		2-4	56%	6	160	50%	5	200
CASSAVA	A rapidly spreading crop in the Northeast, on which proper varieties, cultural practices and fertilizer can raise and maintain yields.	Northeast						
		2-4	7%	6½	1400	25%	3	3000

* All average yields are in kilos per rai of planted (not harvested) area.

** About 20% of the Central Delta is irrigated and growing a second crops. Yields average 300 kgs. on rainfed lands and 420 kgs. on irrigated lands.

major crops	key new features & key practices	region & zone	present % of farms	'avRai' grown	avg yield	potential % of farms	'avRai' grown	avg yield
PEANUTS	New varieties, proper seed, fairly intensive cultural practices suited only to small plots, and fertilizer can produce yields in the 400-500 range.	Northeast						
		2-4	3%	2	150	30%	2	400
		North						
		9	27%	2	300	30%	2	450
		10	17%	1½	240	25%	1½	450
MUNG BEANS	A new fast, 60-day variety can be planted before cotton or after maize. It can yield 145 kgs. without fertilizer and 170 kgs. with fertilizer, where sufficiently regular.	C Fringe						
		7	12%	15	75	25%	12	170
		North						
		6	12%	15	100	15%	15	170
		8	30%	11	90	40%	9	145
		9	11%	9	85	20%	6	145
SOYBEANS	A new variety and proper cultural practices can yield about 150-200 kgs. in the dry season and 200-250 kgs. in the rainy season, or with irrigation.	North						
		6	10%	12	90	20	8	170
		9	10%	10	150	20	6	200
		10	30	5	120	30	5	200

available for diversification. Thus some of the gains will be from higher yields, some will be from greater crop diversification and some from second season cropping. Other crops will enter into localized programs, notably rubber, sugar, and vegetables.

b. Agricultural Regions and Zones

Annex B-5 gives a general description of the major regions and crops used for the purposes of the Technical Analysis in this paper. Additional detail can be found in IBRD August 31, 1976 Appraisal of the National Agricultural Extension Project, Annex 3, "Agriculture in Project Provinces".

c. Table and Data Sources

The data on Table III-A-3 on the present farm systems were taken from the 1975 crop survey of the Division of Agricultural Economics.

- % of farms means those reported as growing some of the crop, both early and late.

- Av Rai Grown is the average area planted by those reporting growing the crops.

- Yield, as reported, is per rai planted.

The data on yield potentials are estimates derived largely from discussions with experts, both Thai and foreign, in charge of research on upland field crops for the Department of Agriculture. Note that in some cases potential average rai are lower than present average rai grown; this reflects expected expansion of the crop into smaller farms.

d. Rice Innovations

In recent years the attention of IRRI and other rice research has turned to rainfed rice cultivation. One problem was uncertainty of the water level. An adaptable variety was needed; the High Yielding Varieties require excellent water control. Now some Deep-Water-Tolerant Dwarf Varieties (DWTDVs) have been developed which will grow to whatever height the water level reaches.

It should be noted that the high price of fertilizer makes application uneconomical unless (1) all complementary practices are followed to achieve yield increases worth at least 180% of the cost of fertilizer, and

(2) the risk of a poor crop is minimized. The new DWTDVs minimize that risk sufficiently to make investment in fertilizer economical in spite of poor water control.

The availability of this new technology is an assumption on the Project. It should be ready for widespread distribution for the second year of the Project. If it is delayed a few years, however, the Projec will still be economical (see III-D).

e. Upland Crop Innovations

As shown on Table III-A-3, new varieties are available which can increase yields 20-30% without fertilizer but with good cultural practices, and up to 100% over traditional yields with fertilizer. Again, the economics of fertilizer use depends on the availability and assured supply of water and good cultural practices.

f. Dependence of the Technical Validity on Availability of Inputs

The Project will depend to some extent on an adequate supply and distribution of seed. The U.S. assisted Thailand Seed Development Project will assure adequate supplies of seed on the key crops well in advance of the requirements of the targetted farmers of this Project. The Tambon Extension Agents and the Farmers' Associations, working with the Marketing Organization for Farmers, can provide an adequate means of distribution of the required improved seed. The physical quantities are such that distribution will be fairly simple to arrange.

Similarly, the quantities of pesticide needed for purposes of this Project are small, principally disinfectant for rice seeds. Only on rare crops in rare areas are farmers recommended to use pesticides regularly; in other cases they will be distributed on an emergency basis through the DOAE Pest Control Division when there is a specific pest outbreak.

Seed and pesticides can be fairly easily distributed with or without credit.

Fertilizer presents a more complicated picture. One Tambon might need up to 1,000 tons, worth perhaps ฿5,000,000. Some temporary storage capacity may be needed, at least at the District level. If the District does not have a warehouse, the District Extension staff may have to

utilize commercial storage facilities. This should not be difficult since at that time of the year warehouse space is available in almost every District. In addition, the BAAC has an expanding program for providing long-term credit for Cooperatives and Farmers' Association storage facilities.

The credit problem is discussed more fully in III-D-4. Fertilizer will generally require credit. Present BAAC plans indicate they will have ample funds and ample staff available for crop production requirements of this Project well in advance of specific project requirements. This is explained further in III-D-4.

g. Suitability of the Technology to the Small Farmer

The technological packages planned for this Project are more suited to the small farmer than to the larger farmer.

As in many countries, smaller farmers have been getting higher yields than larger farmers. In the Northeast for example, the 1963 Census of Agriculture showed the following average rice yields on planted area:

For farmers with holdings of 2 - 5.9 rai, 364.8 kg/ha.
For farmers with holdings of 6 - 14.9 rai, 239.9 kg/ha.
For farmers with holdings of 15 - 29.9 rai, 175.7 kg/ha.
For farmers with holdings of 30 - 44.9 rai, 146.5 kg/ha.
For farmers with holdings of 45 - 59.9 rai, 135.0 kg/ha.
For farmers with holdings of 60 -139.9 rai, 125.3 kg/ha.
For farmers with holdings of 140 rai & over,113.5 kg/ha.

The reason is that most farmers with less land apply more labor per hectare. Also farmers with more land often have their extra holdings in more marginal lands.

The yield targets of this Project require additional labor, in modest amounts, as well as limited purchased inputs. If the labor is unemployed or under-employed at that season and within the family, then the application of the family labor to the recommended practices is profitable. If the farmer must hire and pay outside labor to apply practices, they may not be profitable. Each farmer will be guided accordingly.

h. Extension-Research Coordination

Thailand agriculture and rural development projects in the past have been constrained by lack of coordination between research and extension. This Project has a number of elements included to assure closer research-extension coordination, for example:

- A National Coordinating Committee will be established including all RTG agencies involved in the Project including research agencies.

- A Technical Advisory Group including Extension and Research personnel at the Province level will evaluate results from research, extension trials and demonstrations and prepare recommendations for the next cropping season (See Part IV-A, Administrative Arrangements for details regarding these committees).

- Research personnel from RTG agencies and universities will participate in development of training modules.

- The increased number of Subject Matter Specialists will maintain liaison with research agencies as part of their normal job responsibility.

- Researchers and Extension Agents will collaborate in village-level demonstrations.

3. The Extension Personnel System

a. Recruitment of Personnel

Adequate candidates are available from a long waiting list of applicants for all extension positions and from graduates of universities and vocational schools. In 1974 universities in Thailand provided a total of 99 Masters and 816 Bachelor degrees in agriculture-related subjects. In addition to these, a considerable number of overseas trained graduates are expected to return in the next few years. This level of qualification will be suitable for the Regional Extension Officers, Provincial Extension Officers, and Subject Matter Specialists to be recruited under the Project. Vocational schools with a five-year

course provide about 850 graduates per annum, and those with a three-year course about 1,600. These graduates will qualify for positions as Tambon Agents. Training Officers will be generalists, and will usually be college graduates in non-technical subjects.

b. The Working Environment

Tambon Agents will be recruited from Vocational Agricultural Schools in areas of the Project. They will normally be assigned to work in their home provinces so will be familiar with the local dialect and customs. Housing for the Tambon Agents will either be constructed or rented and will be of a type similar to that of the average village farmer. All Agents will be relieved of the traditional statistical and regulatory duties thereby enabling them to concentrate on assigned crop specific extension tasks. The training system will produce field-manuals and other information required by the agents and their farmer-clients. Extension Officers at the District level will be required to devote a major portion of their time supervising Tambon Agents and reassuring the Agents that their work is important, evaluating performance, and correcting work deficiencies. Motorcycles provided by the IBRD loan will assure adequate mobility for all Agents.

c. Career Incentives

Extension Agents at the Tambon and District levels will be the key to a successful Project. It is planned therefore that special incentives will be made available. For example, they will have a clear understanding that exceptional performance will be rewarded by such things as; a two step increase in salary, a study tour to a foreign country (100 financed by IBRD loan), an opportunity for advancing their academic studies (also under the IBRD loan 30 undergraduate fellowships will be awarded annually and 60 Post-Graduate fellowships, 50 in Thailand and 19 abroad, will be awarded during the four year Project), opportunities to move into higher level positions at the District, Province or Regional/National level, etc.

Personnel turnover is expected both from advancements and "washouts" and is allowed for in the training workload calculations.

4. Farmer Feedback

A number of channels for expression of farmer views have been built into the Project to encourage and

facilitate farmer feedback. Many have been discussed in other sections of this Project Paper. Additional elements include substantial sensitivity training for the District and Tambon Agents to enable them to relate effectively to farmers and elicit and interpret their views. Part of the Agents' performance evaluation will be based on this ability. As noted previosly Agents will be assigned to their home Provinces, if possible, to allow them to relate more effectively to farmers in a familiar environment. Farmers' Associations and Model Farmers will be encouraged to relay farmer views to higher levels. Farmer views will be formally solicited by means of questionnaires, meetings and discussions and submitted to the Provincial Extension Working Group or Technical Advisory Group.

5. Marketing of Production Increases

The RTG recognizes the importance of planning for marketing of expected production increases. They look to the Marketing Organization for Farmers (MOF), a relatively new but already functioning organization. See Table III-A-4 for the organizational detail. The RTG has plans for development and expansion of the MOF to better serve the Thai farmers.

The MOF is in the process of establishing Branch Offices in all 71 Provinces of the Kingdom. These offices will vary in size and scope depending on the potential volume of inputs and produce to be marketed and will be characterized as follows:

First Class Branch Offices will carry out a variety of business, i.e., price support paddy purchase, purchase of other cash crops, rice milling, warehouse and silo operation, distribution of agricultural supplies, fertilizer, etc.

Second Class Branch Offices will carry out a variety of business similar to the First Class Branch Offices in Provinces where the volume will be lower than Provinces where First Class Branches are located.

Unit Offices will be located in Provinces where only essential operations are required, i.e., price support paddy purchases, purchase of cash crops, and distribution of agricultural inputs. The Unit Office will not carry out rice milling or warehouse and silo operations.

Table III-A-5 provides the schedule for establishing these MOF Branch Offices. These Offices will be staffed and equipped to serve all farmers in the Province.

Table III-A-4

MARKETING ORGANIZATION FOR FARMERS

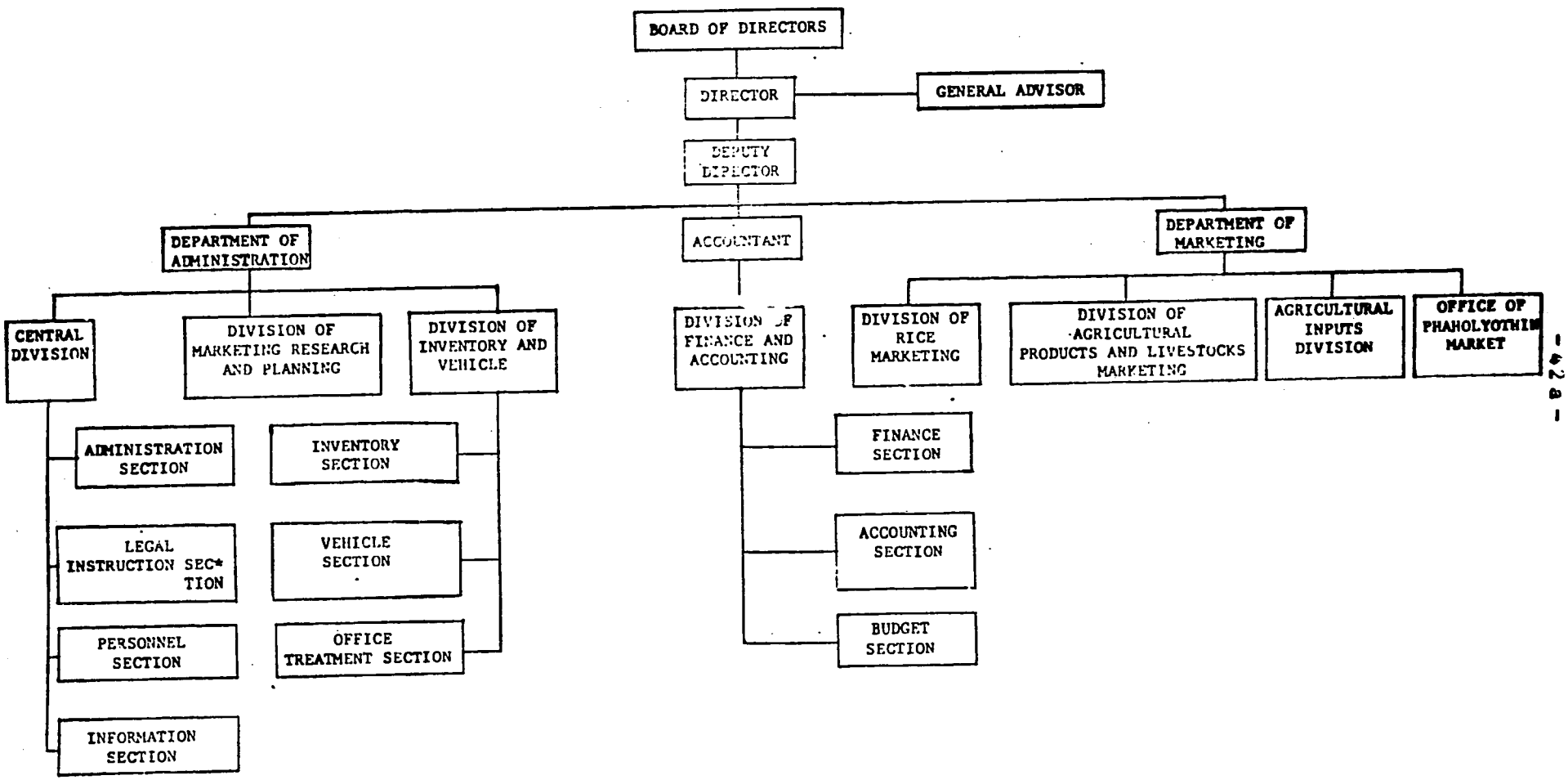


Table III-A-5

Details Showing a 5-Year Period for Creation of Field Offices

FY 1977	FY 1978	FY 1979	FY 1980	FY 1981
1st Class Branch Office	2nd Class Branch Office	2nd Class Branch Office	Unit Office	Unit Office
1. Nakhon Sawan	1. Sukhothai 2. Chai Nat 3. Sing Buri 4. Bangkok	1. Phranakhon Si Ayuthaya 2. Uthai Thani 3. Ang Thong	1. Kamphaeng-phet 2. Pathum Thani 3. Nonthaburi	1. Tak
2. Nakhon Ratchasima	5. Udon Thani 6. Maha Sarakham 7. Ubon Ratchathani 8. Khon Kaen 9. Chaiyaphum 10. Loei	4. Buriram 5. Surin 6. Si Saket 7. Sakon Nakhon	4. Nakhon Phanom 5. Kalasin 6. Roi Et 7. Nong Khai 8. Yasothon	
3. Chiang Rai 4. Phetchabun	11. Lampang 12. Phrae 13. Phitsanulok	8. Lamphun 9. Chiang Mai 10. Lop Buri 11. Saraburi	9. Uttradit 10. Nan 11. Phichit	2. Mae Hong Son
5. Chachoeng-sao	14. Prachin Buri 15. Chanthaburi	12. Nakhon Nayok 13. Rayong	12. Samut Prakan 13. Chon Buri	3. Trat
6. Ratchaburi	16. Nakhon Pathom 17. Suphan Buri 18. Phetchaburi	14. Chumphon 15. Nakhon Sri Thammarat 16. Surat Thani 17. Phatthalung 18. Song Khla	14. Samut Songkhram 15. Samut Sakhon 16. Kanchana-buri 17. Prachuap Khirikhan 18. Trang	4. Satun 5. Krabi 6. Pattani 7. Narathiwat 8. Yala 9. Phang Nga 10. Phuket 11. Ranong
6 Provinces	18 Provinces	18 Provinces	18 Provinces	11 Provinces

It is important to understand that although a highly efficient private sector marketing system now exists in Thailand, it often works at the disadvantage and expense of the farmer. The MOF's purpose is through competition to provide more market opportunities to the farmer.

Cropping recommendations made by the DOAE will be closely coordinated with marketing research carried out by the MOAC Division of Agricultural Economics to maintain the proper ratio of supply and demand.

6. Farmers' Associations

There are presently 3,121 Farmers' Associations in Thailand with approximately 303,000 farm families represented. Of the 3,163 Tambon in the Project area,1,860 or about 60% presently have existing Farmers' Associations. 600 new Associations are expected to be formed in 1977. Farmers are interested in this concept and establishment is not difficult. It is important to note that the lower income farmers are well represented in these groups.

B. Financial Plan

1. Overall Financing

The cost estimates for the total Project, including RTG, AID, and IBRD inputs are shown on Table III-B-1. Details regarding the RTG and IBRD inputs can be found in the financial backup data, Annex 8 of the August 31, 1976 IBRD Appraisal of the National Agricultural Extension Project. The total Project cost is $58.6 million with the following breakdown by funding source:

RTG	$27.5 million	47.5%
IBRD	28.0 million	47.5%
AID	3.1 million	5.0%
	$58.6 million	100.0%

The IBRD will cover all foreign exchange costs ($22 million) with the exception of $490,000 from AID for the training element consultants. In addition the IBRD will cover the local currency costs ($6 million) not covered by the RTG or AID.

The AID Loan of $3 million will cover costs ($2.5 million) directly attributed to the initial and in-service training element of the Project as well as foreign exchange costs for technical assistance in the training area ($0.5 million). A grant of $100,000 is proposed to cover evaluation and special technical assistance.

2. U.S. Assistance

Table III-B-2 gives the budget estimate for the proposed AID Loan. Backup notes provide detailed information on how the numbers were developed. All estimates were developed around the number of class sessions planned for trainees in each Region. Training for Regional/Provincial Officers is two weeks; training for District Officers is four weeks. New Tambon Agents receive pre-service training of five weeks; in-service Agents receive refresher/updating training of two weeks.

Table II-C-1 (see Part II), "Training Coverage by Geographic Entity" provides the figures for the numbers of each geographic entity--Village, Tambon, District, Province and Region--to be covered in each year of the Project. Table II-C-2 (see Part II), "Training Sessions and Personnel Involved" gives the figures, based on the status of the participants, for the number of sessions to be held and the number of participants in each session.

A proposed grant of $100,000 will cover evaluation costs and special Technical Assistance costs to expedite project implementation, e.g. assistance on contract negotiation, procurement, etc.

Loan-financed local currency will be generated through direct dollar purchases of Thai baht. The justification for this approach is that Thailand has neither a U.S. Commodity Import Program nor suitable internal procedures for employing special letter of credit (SLC) arrangements. USOM/Thailand has endeavored to work out acceptable SLC procedures with the RTG, but has not been successful for the following reasons:

(i) Since the RTG does not license imports and has minimal bureaucratic machinery for import control, it would have to create a special administrative system at considerable expense to produce the documentation required under SLC procedures.

(ii) SLC procedures would not generate local currency according to the Project's timing of need. The Thai banking system does not recognize the SLC as a reserve asset and will not permit the advance of local currency against it.

3. Disbursing Procedures

a. Dollar

Foreign exchange costs totaling $490,000 under the loan for technical advisory services are expected to be disbursed through the usual Letter of Commitment/Letter of Credit procedure. Dollars disbursed under the $100,000 grant portion of the Project are expected to be through the direct disbursement method.

b. Local Currency

The local currency portion of the loan is estimated at $2,510,000. Quarterly advances will be provided to cover start-up costs for the first year's local currency expenditures; thereafter, payment will be made based upon the receipt of reports of actual expenses incurred, by category of activity, during the previous quarterly period.

c. Disbursement Schedule

Disbursements, both Dollar and local currency for the Loan portion, by FY of Project implementation are estimated to be:

Year I,	FY 1977	$396,000
Year II,	FY 1978	751,000
Year III,	FY 1979	882,000
Year IV,	FY 1980	971,000
		$3,000,000

Table III-B-1

TOTAL PROJECT COST ESTIMATE

NATIONAL EXTENSION IMPROVEMENT PROJECT

RTG - AID - IBRD

Item	Local Currency	Foreign Exchange	Total
	(US$ '000)		
Capital Costs			
Civil works	5,420	3,610	9,030
Vehicles	-	5,750	5,750
Equipment and furniture	990	2,310	3,300
Subtotal	6,410	11,670	18,080
Contingencies	1,100	1,370	2,470
Subtotal	7,510	13,040	20,550
Academic Training and Consultants			
Overseas training	-	440	440
Local academic training	150	-	150
Consultants (extension)	80	1,580	1,660
Consultants (civil works)	820	-	820
*Consultants (training element)	-	490	490
Subtotal	1,050	2,510	3,560
Incremental Operating Costs			
O&M buildings, equipment and furniture	1,355	70	1,425
O&M vehicles	585	2,330	2,915
Salaries	14,290	-	14,290
Extension activities	665	-	665
*In-Service training	2,215	-	2,215
Monitoring	280	-	280
DOAE admin. overhead	775	-	775
Subtotal	20,165	2,400	22,565
Subtotal project costs	28,725	17,950	46,675
Expected price increases	7,285	4,540	11,825
Total Project Costs	36,010	22,490	58,500**

* Indicate line items covered by the AID Loan, in addition $400,000 is planned for incremental training staff salaries. See Table III-B-2

** Does not include AID grant portion ($100,000).

Table III-B-2

PROJECT U.S. ASSISTANCE BUDGET

Budget Element	FY 1977	FY 1978	FY 1979	FY 1980	Total
Local Currency Costs (฿ 000's)					
Per Diem					
Training Staff	228	456	570	570	
Regional/Provincial Officers	36	239	150	198	
District Officers	65	575	364	520	
Tambon Agents	1,830	3,402	3,007	2,832	
Total	2,159	4,672	4,091	4,120	15,042
Travel					
Training Staff	40	80	100	100	
Regional/Provincial Officers	4	15	25	33	
District Officers	52	17	28	40	
Tambon Agents	26	75	118	158	
Total	122	187	271	331	911
Training Courses					
Tambon Agents (Fortnightly)	510	1,530	2,500	3,480	
New Tambon Agents	102	192	174	162	
Existing Tambon Agents	-	51	150	237	
District Officers	16	40	64	96	
Regional/Provincial Officers	10	30	60	80	
Miscellaneous	110	80	52	80	
Total	748	1,923	3,000	4,135	9,806
Training Provisions					
Training Materials	560	1,211	1,575	1,999	
Training Supplies	320	690	920	1,000	
Training Equipment	200	430	600	420	
Total	1,080	2,331	3,095	3,419	9,925
Training Staff Salary (Incremental)					
Headquarters	200	200	200	200	
Regions	206	618	824	824	
Provinces	244	915	1,526	2,013	
Total	650	1,733	2,550	3,037	7,970
Total of Above	4,759	10,846	13,007	15,042	43,654
+ 15% Contingency/Inflation	714	1,627	1,951	2,256	6,548
TOTAL LOCAL CURRENCY	฿5,473	฿12,473	฿14,958	฿17,298	฿50,202
US$ Equivalent ($ 000's)	$274	$623	$748	$865	$2,510
Foreign Exchange Costs ($ 000's)					
Technical Assistance	122	128	134	106	490
TOTAL AID LOAN	$396	$751	$882	$971	$3,000

Note on the AID Loan Budget, Table III-B-2

Per Diem

Headquarters and Regional Training Staffs have four men each at Grade C-3/4 on the road 130 days per year at ฿130/day, plus two drivers on the road 200 days per year at ฿90/day.

For Regional, Provincial and District Officers per diem is ฿50/day if hostel facilities are available at the Training Centers and ฿130/day if no facilities are available. Number of days of training determines the total amount of per diem.

Per diem for Tambon Agents is calculated at ฿100/day.

Travel

Travel for Training Staff based on assumption of four in Headquarters and in each Region at 5 trips per year each at a cost of ฿1,000 per trip plus cost of trips made by official vehicles.

Travel for Regional, Provincial and District Officers is calculated at the rate of ฿100 for each round trip to the Regional Training Center.

Travel for Tambon Agents is calculated at ฿50 for each round trip to the Provincial Training Center.

Training Courses

Training course costs are costs of expendable supplies to be used by officers and extension agents during all projected training courses, as outlined in Table II-C-2. The amounts allocated for each session of each type of course are as follows: fortnightly district courses, ฿400; new agents courses, ฿6,000; existing agents courses, ฿3,000; district officers courses, ฿8,000 and regional/provincial officers courses,฿10,000. The miscellaneous category funds are included to cover "train-the-trainers" courses, training of subject matter specialists and a contingency amount for classes which are not now planned but which prove necessary as project implementation progresses.

Training Provisions (Materials, Supplies and Equipment)

Training materials are for courses for officers, agents and model farmers and cover the costs of manuals, questionnaires, exercise papers, etc. Costs for provincialand district officers were calculated at ฿1,000 each for first year in project and ฿300 each for subsequent years. Costs for extension agents were calculated at ฿400 per year for new agents and ฿100 per year for existing agents. Costs for model farmers were calculated

at ฿40 for first year of each village operation and ฿25 for subsequent years. AID-financed costs are lower after the first year because the RTG is expected to pick up the "difference" in subsequent years from its own budget.

Training supplies comprise audio-visual and similar supplies used by teachers (e.g., subject matter specialists) and training officers in conducting their classes at the headquarters, regional and provincial levels. Costs were claculated on the basis of ฿150,000 for headquarters, ฿130,000 per region and ฿10,000 per province per year in the project.

Training equipment refers to locally available, non-expendable hardware and includes relatively low-cost items which will not be financed by the IBRD loan (e.g., easels, blackboards, etc.). Costs were based on best current estimates of yearly outlays required given current supplies available in MOAC.

Training Staff Salary

The Headquarters training staff consists of:

Training Officer	C-4	@₱ 36,000	
Asst. Training Officer	C-4	36,000	
Extension SMS	C-4	36,000	
Asst. Extension SMS	C-3	25,000	
Graphics Illustrator	C-3	25,000	
Accountant	C-	18,000	
2 Drivers	C-1&2	24,000	for 2
		₱200,000	

Each Regional training staff cosists of:

Training Officer	C-4	@₱ 36,000	
Audio-Visual Specialist	C-4	36,000	
Illustrator	C-3	25,000	
Electronics Specialist	C-3	25,000	
VTR Operator	C-3	25,000	
Cameraman	C-3	25,000	
Typist	C-1	10,000	
2 Drivers	C-1&2	24,000	for 2
		₱206,000	

Each Province has:

Training Officer	C-4	@₱ 36,000
Audio-Visual Assistant	C-3	25,000
		₱ 61,000

Technical Assistance

Advisory Services Budget:	Year I	Year II	Year III	Year IV
Long-Term Advisor (Person Months)	12	12	12	12
Short-Term Consultants (Person Months)	5	5	5	
Costs: Long Term	85	85	85	87
*Short Term	32	32	32	
**Contingency/Inflation	5	11	17	19
	122	128	134	106

* Includes 3 to 5 months Technical Assistance from DSCS during Year I.

**$5,000 contingency + approximately 5% inflation per year.

C. Social Analysis

1. Introduction

This Project is designed on the premise that adequate and timely technical information coupled with adequate services and other resources will improve farmers' productivity. To effectively implement this Project, we expect the principal problems will evolve around (1) the farmers' relationship with government officialdom in view of their respective traditional expectations and attitudes, and (2) the farmers' assessment of risk in accepting and implementing recommended innovations, i.e. the farmers' assessment of "fair" return.

From the standpoint of social soundness there appear to be no insurmountable obstacles to the successful implementation of the Project. The broad coverage of the Project and the vastly increased number of Extension Agents working at the sub-district level will assure that Project benefits will be extended to most farmers in the participating Provinces, including the large number of smallholder, lower-income farmers. Those problems expected are capable of solution and will be dealt with through the Project. The Project can, if successful, have a most positive effect on modifying traditionally static and unproductive relationships between villagers and government officialdom. Not only will increased production and the commensurate economic benefits result, but new dynamic, symbiotic relationships between villagers and officialdom will be achieved. Villager participation in decisions affecting his life will be encouraged through dialogue and interaction.

2. Benefit Incidence

a. Description of Beneficiaries

The proposed number and the provincial distribution of Project beneficiaries are shown on the Provincial Distribution of Project Beneficiaries Table in the Introduction Section of this Project Paper. The Project is expected to impact upon 2,200,000 farm families distributed as follows among the four principal regions: Northeast (44%); North (22%); Central Plains* (20%); and South (14%). In general, farm families in Thailand may be categorized as belonging to the poor majority with an average annual disposable income (per family) of $175 compared, at the other extreme, with $1,600 for a family living in Bangkok. There are significant regional differences in farm family income as the Table III-C-1 illustrates.

*Shown on Provincial Distribution of Project Beneficiaries as Central, West, and East Regions.

TABLE III-C-1

Regional Average Farm Family Income

by source

1970

Region	Income from Farm Sources Less Operating Expenses	Income from Off-Farm Work	Farm Family Disposable Income
Northeast	$47	$53	$100
North	$109	$80	$189
Central Plain	$67	$229	$296
South	$87	$108	$197
All Thailand	$74	$102	$175

Source: Division of Agricultural Economics, Ministry of Agriculture and Cooperatives, Farm Income and Expenditures in Thailand--1970.

Note: These figures, while dated, are still illustrative of Regional disparities of income.

The Project places appropriate emphasis on the poorest region, the Northeast, where 44% of the proposed Project beneficiaries are located.

b. Participation of Lower-Income Farmers in Project Benefits

The overall thrust of the Project is to assure that the Agricultural Extension Program impacts at the village level and reaches all villages and farmers in the participating Provinces. It is for this reason that Extension Agents are being placed at the Tambon level where none existed before, that the ratio between extension officers and farm families is being increased from 1:1,700 to 1:800, and that agents will be expected to make frequent visits to each village (at least fortnightly). Participation of lower-income farmers will also be assured through the aegis of the Tambon Farmers' Associations, which are in effect farmer interest groups. These associations are expected to represent the views and encourage membership of all farmers, since their primary orientation is not towards procurement and marketing functions which normally are of greatest interest to the more prosperous farmers in a community. Finally, the extension program will suggest ways to increase yields and income without substantial requirements for additional inputs and credit, which should offer benefits to even the poorest, least credit-worthy farmer. While a larger farmer, by virtue of his repayment capacity, might have easier access to a general-purpose cooperative loan, smaller farmers should have equal access to the kind of credit and inputs required for the objectives of this Project.

We are projecting that about 15% of the farmers will adopt the practices of a successful demonstration in the first year (see Part III-D-2). The first adopters may be larger or medium-size farmers; labor-intensive practices may look more attractive to smaller farmers. If, as the Project assumes, sufficient resources are made available each year for the number of adopters targeted in Part III-D-2, then there should be no institutional or social barrier to getting these resources to all the smaller farmers who want to use them.

3. Socio-Cultural Feasibility

a. Effectiveness of the Communications Strategy

(1) Farmer Trust and Confidence

Project success presupposes the farmer's faith in the sincerity and commitment of government officials; e.g. that the latter are resolved to respond positively to villager concerns within the area of their responsibility and competence. It is a basic question of trust and confidence, and this Project is directed at providing the training and incentives that will orient the government official to avoid treating the villager as an inferior and as one obligated to accept instruction and advice. The villagers, on their part, will, as the Project is implemented, move from their traditional expectation of material largess from the government to the realization that extension personnel are committed to providing guidance, advice and information relevant to farmers' needs. The Project also focuses on impressing upon the villagers the realization that they can and should involve themselves in making decisions that affect their lives and, through responsive dialogue with officials, participate in a meaningful way in making the technical innovations and guidance suggested more relevant to their needs. At the same time, through training and institutional mechanisms, this Project will contribute to committing officialdom to accept and encourage villager participation and feedback. One of the principal elements of the Project's success, however intangible and difficult to statistically verify, will be evidenced in the improvement in the working relationships between villagers and officials, the establishment of a continuous dialogue between officialdom and farmer and the creation of a sense of mutual trust and confidence between the villager and officialdom. This achievement will necessarily have a positive effect on the strengthening of political bonds between the rural areas and government and lead to economic development and change in a socially and politically stable context.

(2) Villager Acceptance of Tambon Agents

The problem of acceptance of the Tambon Extension Agent by the villagers is a crucial one to the success of the Project. The optimum choice would be for this officer to be recruited from the village but this is usually not feasible. As graduates of vocational agricultural schools or colleges, they will probably have had a village background. However, it should be stressed that the chances

of their acceptance will be increased if they come from the region in which the village is located and thus speak the regional dialect. This is a particularly relevant concern in the Northeast. The Extension Agent's acceptance will, of course, also be affected by their attitude. Their designation as government officials may tend to give them a sense of status, prestige, superiority vis-a-vis villagers. If they act as superiors in intellect and status and speak down to the villagers and order them about, their acceptance will be seriously compromised. The training they receive will stress this attitudinal problem and concentrate or focus on the need to exchange views with the villagers and learn as well as advise. The training program itself, organized so as to provide for dialogue and exchange of views among the Extension Agents and between them and their trainers will have positive results.

Additionally, if the Tambon Extension Agents' superiors make it clear that the Tambon Agent's promotion and status will be positively affected by their ability to significantly involve the villagers in the innovative program and to channel the villagers' views back to their superiors, then one may expect that the Tambon Extension Agent will be more receptive to engaging in a meaningful dialogue with farmers.

Even assuming the Tambon Extension Agent is prepared to listen, learn, observe and feedback villagers views and problems, in addition to disseminating advice and information, their youth will work against their total acceptance as one capable of "teaching" the farmer. However, viewed another way, youth may also be helpful in forcing them into a position where villagers are prepared to "teach" them, and if they listen well, their performance will obviously benefit from this experience. Because of their youth, they will be treated as a "nephew" assuming they are accepted and liked by the villagers. The best approach for Extension Agents is to carefully and slowly work towards having villagers accept their advice and often such acceptance may initially occur because of the villagers' positive attitude towards them as "good nephews" deserving of "help" in the performance of their work.

Another element that may have a positive relationship on villagers' acceptance involves the Tambon Extension Agent's dress. It would be advisable if the usual civil service uniform could be avoided. Wearing of kaki shorts and open kaki shirt might be an acceptable compromise that would preserve their own sense of status but would

identify them more closely with the villagers. If they are going to work with the farmers, it would be advisable not only to wear shorts but to wear sandals rather than shoes and socks. The latter are inconvenient and a symbol of the urban outsider.

(3) Role of the Model Farmer

For each village at least one "Model Farmer" will be selected on the basis of their neighbors' respect and their receptivity to improvements in agricultural techniques. The Extension Agent will work mainly with the Model Farmers during his scheduled weekly or biweekly visits, in the course of which he will demonstrate to them the practices which should be followed before the next scheduled visit. After each visit, each Model Farmer will be responsible for imparting the recommendations to about 10 neighbors or relatives, whom they generally socialize with on a daily basis and often work with cooperatively. The Extension Agent will also visit individual farmers outside the Model Farmer group, when time and circumstances permit, to ensure that recommendations are being transmitted, understood, and followed to the extent possible. The most important single objective, however, will be to motivate the Model Farmers to adopt the new techniques, as their fields will then become visual demonstrations of the efficiency of those techniques.

An effective selection process for Model Farmers will be based on such criteria as which farmers consistently get highest yields, which ones are most successful, which are outstanding and respected, which ones have shown themselves to be open to change, and are proven leaders. Information for making selections will be gleaned from the village headman, local monks, farmer groups, and the farmers themselves.

Incentives to the Model Farmer will primarily be prestige in the community, use of his farm for demonstration purposes, free seed, possible loan of equipment, special training and a chance to travel with expenses paid, the potential of improving his own farm production, etc. Rewards (non-monetary) to these Model Farmers will be based on production and yields of the farmers they serve and beneficial changes they have influenced.

To encourage an initial favorable response from the Model Farmer, some aid in the form of free seed and/or fertilizer might be given. However, it should

be minimal, and a risk investment on the farmer's own part will be a necessary component of the Project. Other villagers will expect material aid similar to that given the Model Farmer and the Project organizers should recognize this fact. At the same time the villagers will expect that the individual chosen as Model Farmer should undertake some risk and he will be chosen with that fact in mind. The other villagers will estimate their investment and return and decide if the innovations can be duplicated. This decision will be more difficult if the model farmer receives most inputs free of charge as the reaction may well be that "we too are prepared to experiment if all our inputs are provided and there is no risk involved."

b. Farmers' Motivation and Risk-Taking

Regarding the assessment of risk, Thai farmers are prepared to accept new crops and practices after carefully assessing whether the projected increased production and cash income is worth the expenditure of funds and time, including availability of labor. Poorer farmers are understandably more hesitant to undertake innovations when scarce financial resources are required, even assuming availability of credit. However, if innovations have been proven to be successful on neighbors' land and are not viewed to be the result of extensive additional resources, either in financial, equipment, or labor terms beyond their means and ability to obtain, then the risk will be accepted and innovations undertaken. The initial demonstration of specific new crops and practices will be undertaken on the Model Farmers' land. If successful, the innovations will be replicated on the land of fellow villagers on the latter's own initiative.

Since the need for a production-related loan will frequently result from a commitment to innovate, the farmers' attitude to borrowing and loan repayment should be considered. While the farmer can be expected to borrow modest sums for agricultural production related needs from a variety of sources, he will be reluctant to borrow large sums if the perceived risk is high. As the initial risk will be taken by the Model Farmer, and assuming the results are favorable, there should be no barrier to borrowing by other villagers wishing to adopt innovations. If repayment can be so arranged as to involve a portion of the increased production achieved rather than cash, this will be psychologically more acceptable. If the crop fails because of unforeseen flood, drought or pests, the villiger should either be temporarily excused from payment or the percentage of repayment required should be reduced. Basically, the

farmer has no psychological or cultural block to repayment, and he will fulfill his obligation unless he feels that the government's interest on repayment is not serious and continuous exceptions are made. (This would not be the case with commercial lending sources.) The farmers are prepared to take loan repayment obligations seriously if incentives and default actions are clearly defined.

c. Obtaining Information from Farmers

Several possible channels exist for information flow from the farmer back to the decision makers whether they be at Provincial, Regional or Central level. One of these is through the local Farmers' Associations to the Provincial Association and on to the National Farmers' Committee which is fast becoming a very influential group. Another is from the individual farmer(s) to the Extension Agent--either by direct contact or through the Model Farmers--and up through the Extension Implementation Division of DOAE. It is also expected that contact between Farmers' Associations and the Extension Agents will facilitate such information flowing through both channels. This will require attitudinal changes on the part of the Extension Agent, e.g., looking down to the farmer rather than up to Bangkok. The training program is expected to help achieve this.

The farmers may initially be somewhat reticent about expressing their views or problems to government officers. This reticence is largely a factor of the psychological imperative to avoid social confrontation and offense. It is also a function of traditional deference to those higher on the status and prestige scale. Expectations of any real response to their complaints, problems, grievances, suggestions and needs may well be minimal in terms of past experience. The villager may see no purpose or advantage in creating possible tension by his "feedback" views. However, if they feel the Tambon Extension Agent is sincerely interested in their views and considers the villagers as friends and is sympathetic to their needs and problems, they will soon express opinions openly and freely.

In terms of evaluation of production increases, there may well be some initial farmer resistance to detailed and honest reporting. This reluctance is not a function of concern or fear of higher tax charges but rather a natural reticence on part of farmers to "tempt the gods" and advertise their good fortune. A typical answer one receives to a question about crop yields--no matter how good the harvest may have been--is "not very much--lack of rain". Taxes are

based on land not on produce so this should not be factor. After overcoming initial reticence to claim highly productive yields, a rough estimate, honestly given, should be relatively easy to elicit. Also the percentage increase in yield due to new innovations would be freely and frankly admitted.

4. The Role of Women

Women are already well-represented in the Department of Agricultural Extension. There are over 300 women Extension Officers (non-clerical) presently in the DOAE and of the 160 Headquarters Office Staff (professional grades) 32 are women.

The Department foresees an increasingly active role for women in the implementation of this Project and expects that 15% of the 2,500 new Extension Agent positions 20% of the 266 new Subject Matter Specialist positions will be filled by women. The male/female distribution of recent graduates from Thai agricultural colleges is consistent with this projection. In 1974, 40% of the 99 Masters degrees and 30% of the 816 Bachelor degrees awarded in agriculture-related subjects went to women.

One of the main prerequisites for becoming a Tambon Agent will be passing a civil service examination. The examination is open to women as well as men and job openings are filled by those who pass, both men and women.

On the beneficiary side, a surprising percentage (15%) of Thai land-holders farmers are women and can be expected to participate on an equal basis in the benefits of this Project.

D. Economic Analysis

The nature of this Project makes it impossible to quantify the economic benefits with extreme precision. Therefore, the Project net benefits as computed should be considered illustrative. Considerable effort on the part of the RTG and AID has, however, been expended to make the calculations as meaningful as possible. The exact internal rate of return is not as critical as the rough order of magnitude that can be expected; in this case an IRR of well over 25%.

1. On-Farm Income

Table III-D-1 gives the computation of the potential increase in net income for the average farm of each agricultural zone, and also the increased credit requirement for seed, fertilizer, and pesticide. For each of the seven major crops which are relevant to that zone, the present operation and earnings, the potential operation and earnings, and the differences are calculated. The basic computation is as follows:

YIELD (cols. 3&9) per rai of planted area*
x
PRICE (cols. 4&10) with potential prices often lower than present prices, reflecting market saturation from increased production.
=
GROSS/RAI, not shown
-
CASH COSTS (cols. 5&11) per rai, not including hired labor
=
NET/RAI, not shown
x
AVG RAI (cols. 2&8) per grower, per farm reporting growing the crop
=
NET/AVG GROWER, not shown, the net earned per average grower
x
% OF FARMS GROWN (cols. 1&7), the percentage of farms reporting growing the crop.
=
NET EARNED/FARM (cols. 6&12), the net earned per average farm of the zone.

*From Table III-A-3, but lower in several cases to keep the estimates as conservative as possible.

Table III.D-1: POTENTIAL INCREASED INCOME PER FARM

region zone & crop	present farming % of farms grown	avg rai grown	avg yield k/rai	price per kg.	cash costs /rai	net earned /farm	potential % of farms grown	avg rai grown	avg yield k/rai	price per kg.	cash costs /rai	net earned /farm	increased income per rai	avg farm	increased credit per rai	avg farm
col	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NORTHEAST																
Zones 2-4																
Rice	93	18	175	1.4	20	4050	93	18	340	1.4	160	5289		2056		2625
Kenaf	56	6	160	2.6	40	1200	50	5	200	2.6	50	1175	91	1239	140	2350
Peanuts	3	1	140	6.0	30	25	30	2	350	2.5	230	387	95	-25	10	5
Cassava	7	6½	1400	0.4	20	245	25	3	3000	.4	230	725	-165	362	200	120
													430	480	200	150
CENTRAL DELTA																
Zone 11																
Rice	70	35	330	1.8	120	11625	70	35	460	1.8	250	14160	50	2535	150	5250
CENTRAL FRINGE																
Zone 7																
Rice	90	21	300	1.6	50	8120	90	21	380	1.6	160	8467		3087		5320
Maize	60	40	180	1.6	30	6190	60	40	320	1.5	160	7680	18	347	110	2080
Mung Beans	12	15	75	4.0	20	500	25	12	170	3.8	60	1760	62	1490	130	3120
													300	1250	40	120
Zone 12																
Rice	54	20	225	1.8	40	3940	54	20	360	1.8	180	5054		1564		1510
Maize	18	10	300	1.6	60	750	25	10	360	1.5	60	1200	103	1114	140	1510
													60	450	-	
Zone 13																
Rice	83	37	230	1.8	40	11485	83	37	380	1.8	180	15477	130	3992	160	4910

Table III.D-1: POTENTIAL INCREASED INCOME PER FARM

region zone & crop	present farming % of farms grown	avg rai grown	avg yield k/rai	price per kg.	cash costs /rai	net earned /farm	potential % of farms grown	avg rai grown	avg yield k/rai	price per kg.	cash costs /rai	net earned /farm	increased income per rai	increased income avg farm	increased credit per rai	increased credit avg farm
col:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
NORTH																
Zone 6																
Rice	91	20	300	1.6	50	7825	91	20	430	1.6	160	9610		3000		2235
Maize	6	24	350	1.6	60	720	6	24	500	1.5	140	880	98	1785	110	2000
Mung Beans	12	15	100	4.0	20	685	15	15	170	3.8	60	1320	110	160	80	115
Soy Beans	10	12	90	3.2	40	300	20	8	170	3	60	720	105	635	40	90
													200	420	20	30
Zone 8																
Rice	92	33	300	1.6	50	13055	92	33	430	1.6	180	15423		3353		3485
Maize	23	9	267	1.6	50	780	30	7	320	1.5	50	905	78	2368	110	3340
Mung Beans	30	11	90	4.0	20	1120	40	9	145	3.8	60	1985	55	125	-	
													150	860	40	145
Zone 9																
Rice	90	9	400	1.6	50	4780	90	9	550	1.6	180	5670		1568		1695
Maize	30	6	200	1.6	50	485	30	6	300	1.5	140	558	110	890	130	1055
Peanuts	27	2	300	6.0	30	955	30	2	450	3.5	230	805	40	73	90	160
Mung Beans	11	9	85	4.0	20	315	20	6	145	3.8	60	645	-425	-150	200	400
Soy Beans	10	10	150	3.2	40	440	20	8	200	3	60	865	220	330	40	50
													100	425	20	30
Zone 10																
Rice	86	7½	430	1.6	100	3790	86	7½	550	1.6	200	4385		1030		750
Peanuts	17	1½	240	6.0	30	360	25	1½	450	3.5	230	505	90	595	100	645
Soy Beans	30	5	120	3.2	40	520	30	5	200	3	60	810	-65	145	200	75
													-195	290	20	30
SOUTH																
Zone 17																
Rice	85	14	200	1.8	20	4046	85	14	380	1.8	180	5998	164	1952	160	1900

It should be noted that cash costs over ฿100 reflect application of at least 20 kg. of fertilizer per rai, at ฿5 a kilo.

A general test of the economic soundness of investments in short-term inputs is a net increased income equal to at least 80% of the investment. Most of the crop potential meets that requirement. Some do not but still represent good opportunities for farmers to increase income. A few drops in income should be explained. Peanuts are now priced exceptionally high, and are bound to come down to a price more in line with other legumes as production increase. But at a much lower price they will still be a good money-maker for the farmer. Kenaf acreage is dropping due to competition from more profitable crops, so average income per farm is already dropping.

Potential increases in income are roughly proportional to size of farms, generally running ฿140-150 per rai. Zones 11, 9, and 10, where yields are already high, have potential increased incomes of about ฿125 per rai. Zones 4 and 17, with low yields relative to potential, have potential increased incomes in the ฿180 range.

2. Project Pace of Adoption

Table III-D-2 gives the factors that have been used in computing the year-by-year buildup of increased income and credit requirements. Some factors are taken from previous tables:

- increased income and credit requirements per farm from Table III-D-1

- intermediate units, the numbers of farms, Tambon, villages, etc., from Provincial Distribution of Project Beneficiaries Table in the first part of the Project Paper.

The pacing factors for each zone have been computed using the following assumptions: (all numbers rounded)

a. in the first year of operation in any village (Year VI), there is a demonstration but no adopters

b. in the second year (V2), after a successful demonstration, about 15% of the potential farmers start adopting improvements

Table III, D-2 PROJECT BENEFITS COMPUTATION FACTORS

Region	North East	Cntnl Delta	Central Fringe			North				South		
Zones	2-4	11	7	12	13	6	8	9	10	17		
Per Farm Factors												
Increased Income	฿ 2056	฿ 2535	฿ 3090	฿ 1560	฿ 3990	฿ 3000	฿ 3350	฿ 1570	฿ 1030	฿ 1950		
Increased Credit	2625	5250	5320	1510	4910	2235	3458	1695	750	1900		
Intermediate Units												
Farms per Village	75	65	85	70	60	85	95	90	75	70		
Villages per Tambon	12	8	8	8	8	8	8	8	8	8		
Tambon launched in Yr P1	457											
P2		158	103									
P3		194		133						525		
P4	546		74		255	165	147	146	170			
Pacing Factors												
Farms starting adoption in Yr V2 (per village)	10	10	12	10	10	12	15	15	15	10		
V3	20	20	24	20	20	24	30	30	30	20		
V4	30	20	36	30	20	36	40	40	40	20		
Villages starting adoption Yr T2 (per Tambon)	6	4	4	4	4	4	4	4	4	4		
T3	6	4	4	4	4	4	4	4	4	4		
Pace of Adoption												
Farms starting adoption in Yr P2 in 000s	27										Total	Cumul
P3	82	6	9								27	27
P4	137	27	28	5		8	9	9	7	21	118	145
P5	115	48	50	16	10	24	26	26	20	63	302	447
P6	98	44	39	27	31	40	41	35	34	84	419	866
P7	164	16	18	16	41	24	22	18	20	42	431	1297
P8	98		11		20						341	1638
											129	1767

c. but only 50% of the demonstrations in VI are successful, so only 50% of the villages in the second year of Tambon operation (T2) go into stage V2, the other 50% following the next year

d. in the third year of operation in a village (V3), the number of farmers starting to adopt practices doubles

e. in the fourth year of operation in a village (V4), the cumulative number of adopters rises to 85% of the farms in the village

f. when the farmers start adoption, they achieve 50% of the potential the first year and 50% the second year

g. when the farmers start adoption, they require 33% of the full credit requirement the first year and 67% the second year.

A word should be said about what constitutes a successful demonstration. First of all, it must show a profit. The net increase in income per rai should be at least 60% of the investment, at current prices. Second, the cause of the profit should be visible; the increased production should be enough to be visible to the naked eye, an increase of at least 20%. Third, the proposed crop and practices should fit into the local farming system, competing successfully for land and labor with alternative uses.

3. Project Net Benefits Computation

The net benefits and Internal Rate of Return computitions under basic assumptions and under subsequent sensitivity-analysis assumptions, should be considered in light of the following considerations. First, they are based on targets for production and income increases that have been set for purposes of initial project appraisal, not for actual project operation. The actual targets against which the Project should be subsequently evaluated are to be set by the provincial planning procedures outlined in Part IV-A. Second, the exact IRR values are not important, or even the exact differences under different assumptions, only the rough order of magnitude. The fact that an internal rate of return is above 25% is what is significant, not the exact amount.

Table III-D-3 gives the annual benefits, costs, and net benefits of the Project. It is computed as follows:

- Annual Benefits, net increase in on-farm income, is derived from the factors on Table III-D-2 and assumption (f) above.

- Credit Requirements, net annual credit expansion to meet the needs of farmers generated by this Project, are computed from the factors on Table III-D-2 and assumption (g) above.

- Credit and Supply Services, the logistic support for loan administration and delivery of necessary supplies to the farmers, is computed at 15% of the cumulative increase in credit--credit being computed at 100% of the increase cash cost of farm supplies required to achieve potential income.

- The IBRD Loan and the incremental operating expenses of the DOAE are taken from the latest IBRD project appraisal and include a correction for expected inflation, which the other figures do not.

The Internal Rate of Return, computed out to 20 years, is 53%. It is high because it is putting to use unutilized or grossly underutilized land and labor, with total investment, total capital inputs only a few hundred dollars per farm, including production credit. It is high because it is spreading overhead over 1,700,000 farms.

4. Credit Availability

The economic targets set out on Tables III-D-1 through 3 require a total expansion of credit to agriculture amounting to $256 million, ฿5,120 million, over nine years. Some background is necessary to indicate the agricultural credit capability of Thailand

a. Progress to Date

Ten years ago the institutional credit to agriculture was negligible, reaching less than 2% of the farmers. In 1976 about 875,000 farmers, 22% of the total 4,000,000, are getting agricultural production loans. About 95% of these are serviced by the Bank for Agriculture and Agricultural Cooperatives (BAAC), the remaining 5% almost

Table III.D-3: PROJECT NET BENEFITS COMPUTATIONS

primary cost-benefits only, all figures in US$ millions

FY:	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Increased Farm Income annual		1	8	19	39	52	45	27	8			
Farm Income cumulative		1	9	27	66	118	163	190	198	198	etc.	
Project Costs												
Production Credit Expansion		1	8	25	47	52	60	38	15			
Supply/Credit Services*			1	5	12	21	30	36	38	38	38	etc.
IBRD Project Loan	.5	4	4	8	7	5						
US Project Loan	.5	4	10	16	20	21	21	21	21			
DoAE Increased Operating Expenses	.4	.8	.9	1.0								
total costs	1	10	24	55	86	109	111	95	74	38	38	etc.
Annual Net Benefits	-1	-9	-15	-28	-20	+9	+62	+95	+124	+160	etc.	
							internal rate of return 53%					
VARIATIONS												
Variation A -- benefits off 30%, all costs remain the same												
Increased: annual		1	6	13	27	36	32	19	6			
Farm Income: cumulative			7	20	47	83	115	134	140	140	140	etc.
Annual Net Benefits	-1	-9	-17	-35	-39	-25	+14	+39	+66	102	102	etc.
							internal rate of return 31%					
Variation B -- all benefits, credit, and supply costs delayed 2 years												
Increased: Annual				1	8	19	39	52	45	22	8	
Farm Income: Cumulative				1	9	27	66	118	163	190	198	etc.
Revised Costs												
Production Credit Expansion				1	8	25	47	62	60	38	15	
Supply/Credit Services					1	5	12	21	30	36	38	etc.
Annual Net Benefits	-1	-10	-15	-25	-27	-29	-14	+14	+52	+116	145	160
							internal rate of return 35%					
Variation C -- No Credit												
Increased: annual		1	3	10	20	25	22	13	3			
Farm Income: cumulative		1	4	14	24	49	71	84	86			
Annual Net Benefits	-1	-8	-11	-11	-3	+23	+50	+63	+65	+86	+86	etc.
							internal rate of return 56%					

* 15% of cumulative credit expansion

entirely by the Bangkok Bank. Total loans outstanding amount to about ฿5,400 million, including direct loans to individual farmers and loans to farmers through cooperatives and farmer associations.

Most of the loans are to larger farmers, but a large number of smaller farmers are being reached. The loans are well distributed to poorer as well as more commercialized parts of the Kingdom. The average crop production loan to individual farmers is ฿4,000--the credit requirement of an above-average but not much-above-average farmer. The BAAC has been steadily opening more offices at the District level; it now has offices serving 75% of the Districts, about 85% of the Provinces. Its field staff averages over 3 loan officers per District served. With each loan officer having a capability of handling about 1,500 loans, the BAAC now has the staff to handle about 4,500 loans, over 75% of the potential borrowers, in each District it is now serving. It is adding staff at a rate of about 200 Loan Officers a year.

At its present rate of expansion of staff and branch offices, it should have branches serving every District and sufficient Loan Officers to service almost all the farms of Thailand. That will be a year or two before the peak lending needs of this Project.

b. Financial Resources

The BAAC has been able to borrow all the funds it could use from commercial banks, with one constraint. It must pay commercial banks 8% on its deposits, it lends to the farmers at a maximum rate of 12% (which does apply to the bulk of the loans), and it has an administrative cost of 5.7%. So it cannot use borrowing from commercial banks to cover more than 75% of its lending without losing money. Its longer-term lending is covered partly by development loans, in particular loans such as the AID Agricultural Development Loan.

The main constraint on BAAC lending is its capital stock. It needs a ratio of equity to debt of about 4:1 to operate profitably. In 1975 it was approaching the limit of the amount of lending its capital stock could carry, so it requested a ฿200 million addition to its capital of about ฿1.2 billion, from the national budget. This was turned down by the Ministry of Finance because prior legislation was needed to increase the authorized capital.

So, during 1976, the BAAC was forced to ration credit and turn down borrowers for the first time. And it lost a small amount of money for the first time. Farmers recently descended on Bangkok for a mass demonstration, protesting in particular the tight credit situation.

Legislation has been moving through the Government and through Parliament to increase the authorized capital of the BAAC to ฿4,000 million and to increase the paid-in capital by ฿200 million from the FY 1977 budget. Availability of agricultural credit is an item of government policy, so no one expects any opposition to reasonable increases in BAAC capital for the next several years. The BAAC expects to increase its capital by ฿500 million a year over the next four years. This will raise its lending capacity to ฿13.6 billion, by 1981. This will be more than enough to meet all the credit needs of this Project and similar needs of the other provinces of the Kingdom, plus normal expected growth in medium- and long-term lending, a few years in advance of the peak needs of the Project.

In the administrative and management area the BAAC is also making significant advances. A new, dynamic and capable manager took control of the BAAC in February 1976 and is initiating needed management and administrative changes. Loan approval authority has been delegated to Branch Managers for short and medium term loans including those to Cooperatives and Farmers' Associations thus accelerating BAAC farmer response to 2-3 weeks instead of the usual 3-6 months. Accounting and reporting procedures are being simplified; in-service staff training programs are being established. Two long-term bank advisors, from the New Zealand Government, are assisting the BAAC with its administrative and management problems.

Thus the BAAC should be able to meet the credit needs of this Project as well as similar activities (not yet planned) in other Provinces, even if its capital and staff are expanded at only half the expected rate. However, this Project could be economically viable even without credit (see below).

5. Sensitivity Analysis

Table III-D-3 goes on to test the sensitivity of the economic viability of the Project to changes in basic assumptions. It tests the economic viability under three worst-case situations.

Variation A assumes that all costs and credit and supply inputs remain the same, but that benefits are 30% lower than expected. The internal rate of return is 31%, leaving a more-than-viable Project.

Variation B assumes that, due to poor project management or incomplete research and adaptation, successful demonstrations are delayed for two years and thus adoption of practices and resulting benefits are delayed for two years. Then credit expansion and additional credit and supply services needed for the Project are delayed for two years as well. The resulting internal rate of return is 35%, leaving a more-than-viable Project.

Variation C assumes that, for some mysterious reason, no credit is available and the extension effort focusses on improvements of cultural practices only, without additional inputs other than seed. This considerably lowers the potential average increase in income per farm:

zone:	1-4	11	7	12	13	6	8	9	10	17	
with credit :	2050	2535	3090	1560	3990	3000	3350	1570	1030	1950)	increased
without credit:	840	1300	2530	940	1380	1340	1890	1040	550	640)	income

The revised lower targets have been computed by changing all yield targets on Table III-D-1 which depend on increased inputs of more than ฿20, lowering them to a 10% yield increase from cultural practices only. The resulting internal rate of return is 56%.

Thus the Project would seem even more financially high-yielding without increased inputs and credit. Two qualifications are necessary. It does not become as useful a Project when credit is absent, because the increase in average farmer income drops from ฿2,320 to ฿980. Secondly, although improved cultural practices alone can increase yields some 10-15%, such increases are very difficult to demonstrate. A 10% increase is not visible, is not easily attributable to cultural practices.

However, Variation C does demonstrate the point that Extension, of and by itself, is a very sound investment.

6. The First Year--A Special Case

First-Year demonstrations in four Northeast Provinces should result in short-term increases in income and production over and above those projected on the basis

of long-term targets. At current and expected next-year prices, cassava interplanted with peanuts on one or two rai can offer the farmer a substantial increase in income, about ฿1,400 per rai even with minimal cultural practices. Such increased production by 20-40,000 farmers is not likely to depress the present high prices for these products. So the short-term attractiveness of the demonstration subjects and the short-term increased income per farm is likely to be substantially greater than the long-term potential.

PART IV. IMPLEMENTATION PLANNING

A. Organization and Management

The Project will be implemented by the Department of Agricultural Extension (DOAE) in the Ministry of Agriculture and Cooperatives (See Table IV-A-1). To ensure an efficient internal organization at headquarters level capable of administering the Project, the nine divisions of DOAE will be grouped into Administrative, Technical, and Extension Services, with three Divisions in each service (See Table IV-A-2). This arrangement, which is within the normal jurisdiction of the Director General of DOAE, does not require formal approval of the Civil Service Commission. Administrative links between the field level and headquarters will be strengthened by bringing the Regional Extension Officer into the chain of command. The Regional Extension Officer will supervise the Provincial Extension Officers, with the chain of command continuing as at present through the District Extension Officers and the Tambon Agents. This arrangement will ensure that at each level officers will deal with a manageable number of subordinates whom they know well (See Table IV-A-3).

1. District Extension Services

Field level extension services will be organized and directed from the District Extension Center by the District Extension Officer who will be assisted by a Deputy District Extension Officer if there are nine or more sub-districts (Tambons) in the District. Up to eight Tambon Agents will be supervised by the District Extension Officer or Deputy District Extension Officer. Each Tambon Agent will be responsible for extension activities in about 10 villages, for about 1,000 farmers. Tambon Agents will work through Model Farmers. All Tambon Agents will be agricultural generalists, trained, under the Project, in specific farming subjects which are important in their respective Tambon. The District Extension Officer and Deputy District Extension Officer will spend about 75% of their time in the field on their assigned Districts, supervising and guiding Tambon Agents on a regular basis. The rest of their time will be devoted to administrative duties and training programs.

Table IV-A-1

THAILAND
NATIONAL AGRICULTURAL EXTENSION PROJECT
Organization Ministry of Agriculture and Cooperatives (MOAC)

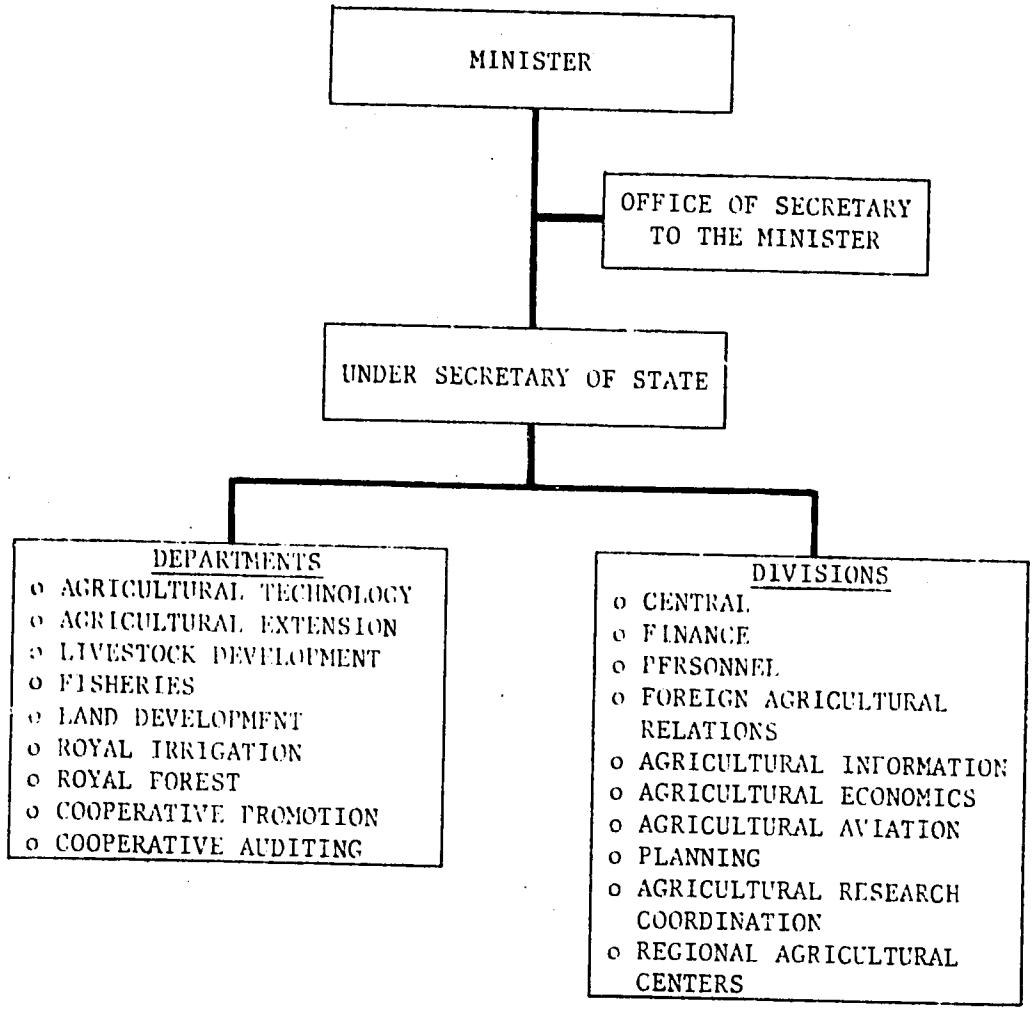


Table IV-A-2

THAILAND
NATIONAL AGRICULTURAL EXTENSION PROJECT
Headquarters Organization of Department of Agricultural Extension

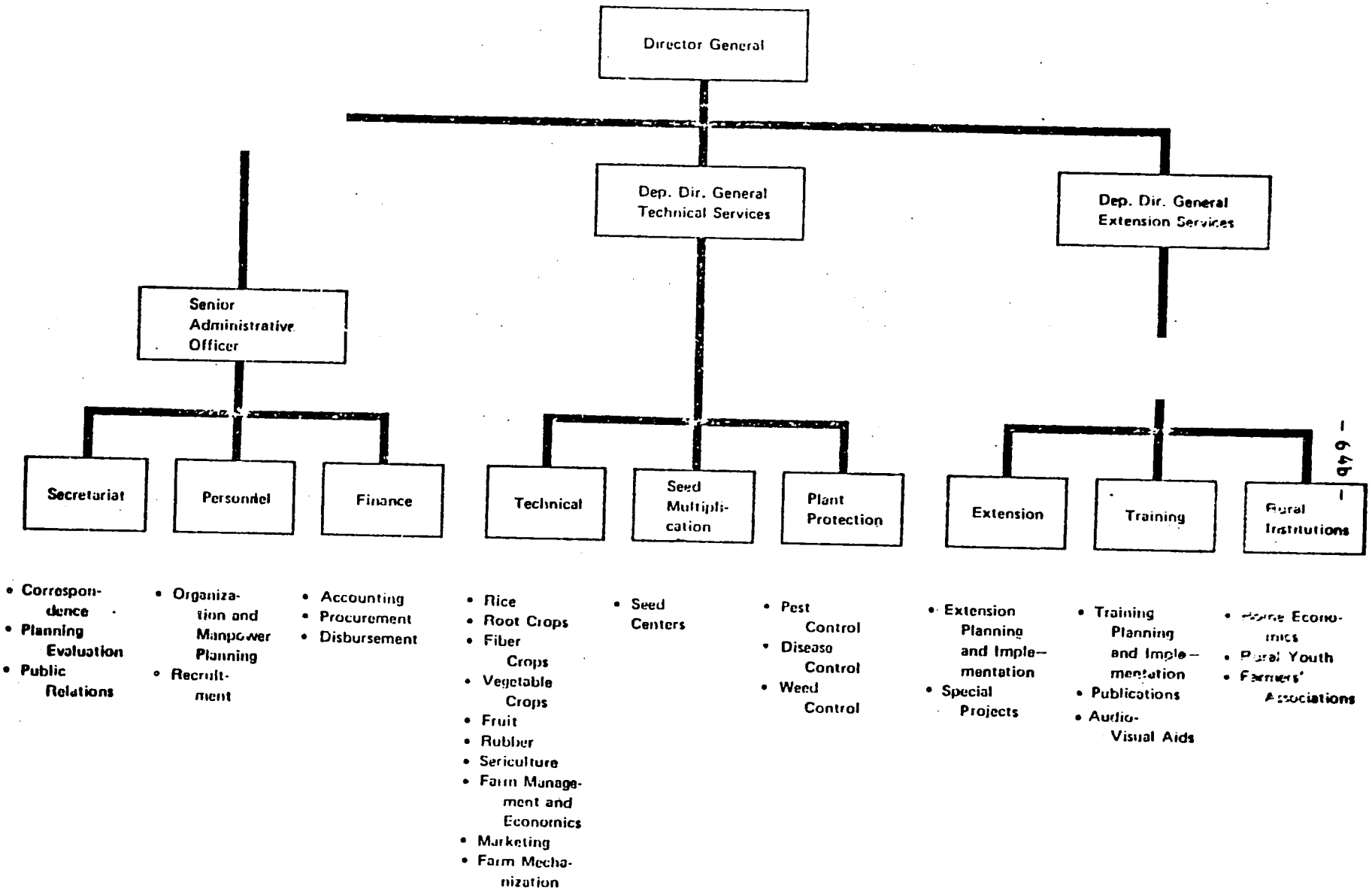
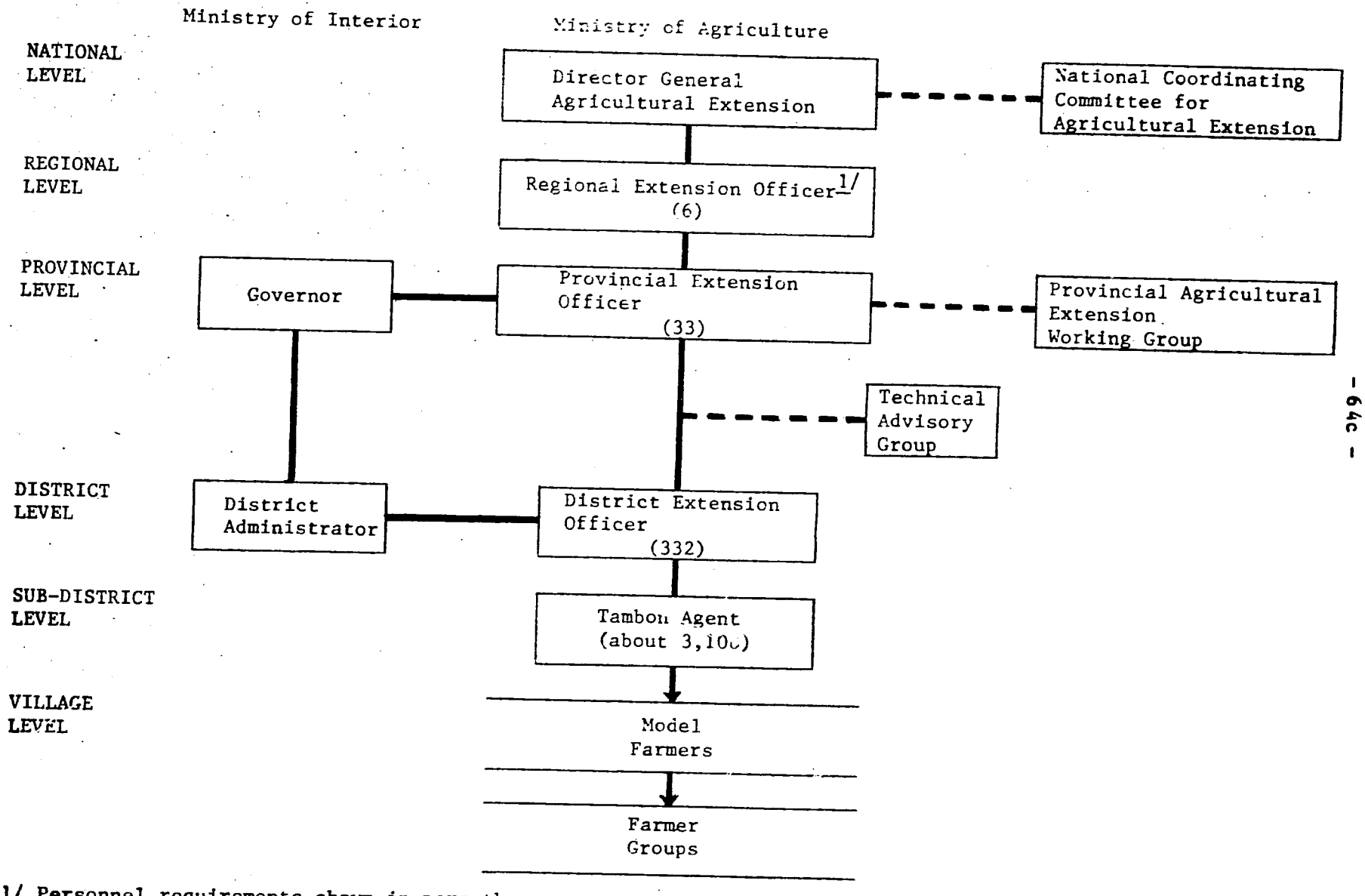


Table IV-A-1

THAILAND
NATIONAL AGRICULTURAL EXTENSION PROJECT
Project Organization



1/ Personnel requirements shown in parentheses

Subject Matter Specialists from the Province will function as trainers of all District extension personnel and they will support them in their field work. The field of specialization of Subject Matter Specialists will depend on the agricultural cropping patterns in the district. They will plan demonstrations and experimental work in cooperation with local research staff and the Provincial Extension Officers, District Extension Officers and Tambon Agents. Subject Matter Specialists will spend about one-third of their time training Tambon Agents and others, another third on research activities including contact with research staff and institutions, and the remainder in the Districts, assisting Tambon Agents, visiting farmers fields and demonstration plots, and generally keeping in touch with the farm situation.

Field extension personnel will be relieved from most of the miscellaneous statistical and regulatory duties they are now expected to perform. As far as possible, statistical and regulatory duties of field staff will be limited to:

- Collecting land-use and crop production statistics on the basis of sample harvests and farm interviews with village headmen; and

- Recommending suitable seed growers and inspection of seed crops.

Other regulatory duties will be carried out by Provincial administrative staffs.

2. Coordination with Other Agencies

The RTG has established a National Coordinating Committee for Agricultural Extension to coordinate the Project implementation and extension activities of DOAE with related programs administered by other agencies affecting the supply of inputs and irrigation water, the provision of credit, produce marketing and land development. The Coordinating Committee is chaired by the Under-Secretary of State for Agriculture and includes representatives of concerned RTG agencies, including the Ministries of Finance, Interior, and Commerce, the Budget Bureau, the National Economic and Social Development Board, the Civil Service Commission, the Marketing Organization of Farmers (MOF), the Bank for Agriculture and Agricultural Cooperatives (BAAC), the Royal Irrigation Department (RID) and the Departments of Agriculture, Livestock Development, and Land Development and

the Division of Agricultural Economics in the MOAC. The Director General of DOAE will present an annual extension work program to the Committee to familiarize participating agencies with extension activities, which will help lead to an exchange of views and improved coordination, particularly in regard to budgetary appropriations and establishment of staff positions. The Committee met in July 1976 and endorsed the Project.

At the provincial level formal coordination will be achieved through the establishment of a Provincial Agricultural Extension Working Group in each of the Project Provinces. These Working Groups will coordinate the activities of the Provincial Agricultural Extension Service with those of other agriculture-related organizations in the Provinces. The Working Group will meet prior to each cropping season under the chairmanship of the Governor. Members will be drawn from the important agriculture-related organizations in the Province such as BAAC, MOF, RID and other MOAC departments, cooperatives, and trade organizations. Meetings will provide relevant information on all agricultural activities in the Province and will ensure a common understanding of each organization's activities leading to greater cooperation between agencies. The Provincial Extension Officer will be the Group secretary.

In each of the Project Provinces a Technical Advisory Group will be formed. Members will be drawn from research, extension and other related institutions in the Province. They will meet when results from research, extension trials and demonstrations are available after the cropping season. The Advisory Group will evaluate the experimental results and the overall crop performance in the area and prepare a package of recommendations for the Extension Service for the following season. The recommendations will be forwarded to the Regional Extension Officer, and, when necessary, to MOAC for endorsement. When a need for further research has been established, a recommendation for action will be forwarded to the relevant research institution. The Directors General of Livestock Development and Fisheries have agreed to participate actively in joint extension activites in areas where extension responsibilities overlap, and in particular will provide Subject Matter Specialists from their Departments to train and backstop DOAE Extension Agents working with families who have mixed farm enterprises.

B. Administrative Arrangements

The organizational structure and functions and responsibilities of those involved are detailed on the following Organizational Responsibility Charts:

01) Planning & Operations--the core of the Project

02) Finance

03) Training

These Organizational Responsibility Charts have been prepared jointly with the RTG Project Manager and his staff, reflecting their perceptions of how the work is to be organized. In addition, the procedures described in Part II-B-2 reflect joint planning and the perceptions of the RTG Project Staff.

1. Salient Features--Delegation, Feedback, Participation

The general organizational concept presented on Organizational Responsibility Chart 01 is sound. The salient feature is the locus of planning at the Province level, the point where it is feasible to bring together the proper inputs from the National and Regional levels and the participation of the farmers themselves. Annual exercises at the National and Regional levels are to define planning parameters, broad policy guidelines and standard technical data to be used in planning--rather than to do the planning itself at higher levels. In particular, the National and Regional exercises are to update technical and operational recommendations in light of latest research results, market conditions and field experiences (ORC 01, lines 10-10/60).

Parallel to these exercises is a specific exercise (ORC 01-20-10) to collect the ideas and viewpoints and concerns and interests of farmers. This will be done by a combination of questionnaires, open-ended meetings and informal discussions. The Tambon Agents will have as part of their job the conduct of this feedback and participation, the handling of the questionnaires and discussions. The exercise is to focus on the Extension program, and on the interests and concerns of the farmers in getting technical assistance to improve their own farming operations; it is not to be a channel for general pleas and complaints about various government services. It is not to duplicate normal political and administrative channels of communication.

ORGANIZATIONAL RESPONSIBILITY CHART agency: DEPARTMENT OF AGRICULTURAL EXTENSION area: PLANNING & OPERATIONS (01) date: August 20, 1976

Task-Position Relationship Code

A: Action
C: must be Consulted
D: Direct supervision
E: Expedite
G: General supervision
H: Help
I: Initiate action
M: Merge requirements
R: Review submissions
S: Signoff
T: Technical coordination
V: Verify by spot check
X: approve policy exceptions
*: optional or alternative

functions & tasks	Ministry: N E S D B	Ministry: Minister of Agric	Ministry: Deputy Minister	Ministry: Ag Econ Division Undersecretary	Department: Nat Ext Coord Comm	Department: Dir Gen Extension	Department: Dep DG Technology	Department: Chf Technical Divn	Department: Tech Specialist	Department: Dep DG Extn Svcs	Department: Chf Extnsn Divsn	Department: Planning Section	Region: Regional Ext Offr	Region: Ast Reg Ext Offr	Region: Reg S M Specialist	Province: Prov Extsn Offr	Province: Prv Est Wrkg Gp	Province: Ast Prv Ext Offr	Province: Prv S M Specialist	District: Dist Extn Offr	District: Dst Ag Wks Grp	Local: Ast Dst Ex Offr	Local: Extensn Agent	Local: Kamnap	Local: Farmer Assn	Local: Puyatban	Local: Model Farmer	Local: FARMER
10 National & Regional Planning																												
-10 Extension Policy Guidelines			S	R	R*	R		D*A*	H*		D	A	H		I*													
-20 Long Range Extension Development Plan	S		S	G	R	R					D	A	H				I*	I*										
-30 Annual Planning Guidelines - Economics				D	A	R				C*																		
-40 Annual Planning Guidelines - General Technical (SM specialists must consult Research offices)						R	S	G	D	A	C	C	H			C												
-50 Annual Planning Guidelines - Regional Technical							S	R	G	T			C		D	M	A			C								
-60 Annual Planning Guidelines - Operational							G				D	A	H		C			C*										
20 Annual Province Plan																												
-10 Local Suggestions on Subject Matter																	G	R	M	C	C	D	R	E	A	C	C	C
-20 Subject Matter Content & Priorities							X								G		S	D	R	A		D						
-30 Operational Workplan & Schedule							X								G		S	D	R	H	A	C						
-40 Seasonal Modifications															C*	C*	S	D		E	H	C	A	H	I*			
30 Village Operations - General																	S	G				R	D	E	I	H	H	A
-10 Organization of New Farmer Associations																							G		H	C*		A
-20 Organization of Small Farmer Groups (SFGs)																		G					D	Z	A	C*	H	C
-30 SFG Follow-up Meetings																G	C	D				E	A		H		I*	F
-40 Seeking Emergency Assistance - pesticides etc.																C*		G	C*		H	C*	D	A	I	C*		H*
-50 Production Troubleshooting																												
40 Village Operations - Demonstration																						G			E	R	D	C	A
-10 Selection of Model Farmers																							G	E	D	C	H	H	A
-20 Planting & Tending of Demonstrations																	G					C*	D	E	A	C		C	A
-30 Farmer Meeting Scheduling & Organizing																	G						D		A	C		C	H
-40 Farmer Meeting Conduct																T		G		V		R		D	A	C	C	C	H	G*
50 Reporting & Evaluation																		A		H		C						
-10 Yield Sampling										T				G		D		A		H		C						
-20 Provincial Evaluation - Crop Production Results													T	G	D							C						
-30 Provincial Evaluation - Operations						R	R	G	D	M						A												
-40 Regional/National Evaluation - Crop Production						R	R				G	D	M	A	H							C						
-50 Regional/National Evaluation - Operations																												

ORGANIZATIONAL RESPONSIBILITY CHART

agency: DEPARTMENT OF AGRICULTURAL EXTENSION area: FINANCE (02) date: August 27, 1976

Task-Position Relationship Code

- A: Action
- C: must be Consulted
- D: Direct supervision
- E: Expedite
- G: General supervision
- H: Help
- I: Initiate action
- M: Merge requirements
- R: Review submissions
- S: Signoff
- T: Technical coordination
- V: Verify by spot check
- X: approve policy exceptions
- *: optional or alternative

functions & tasks	deadlines	NATIONAL ASSEMBLY	CABINET EGT COMM	Bureau of Budget	Cntrl AccountgDpt	Dept Tech Ecn Coop	Ministry: Minister of Agric	Ministry: Undersecretary	Ministry: Dep Undersecretary	Ministry: Chf FinanceDiv	Department: Dir Gen Extension	Department: Dep DG Administn	Department: Chf Finance Div	Department: Accounting Sctn	Department: Disbursmt Sctn	Department: Procurement Sctn	Department: DDGs Extsn/Techn	Department: Division Chiefs	Department: Section Chiefs	Department: Planning Section	Reg. Province: Regional Ext Off	Reg. Province: Reg FinanceUnit	Reg. Province: Prov Governor	Reg. Province: Prov Finance Off	Reg. Province: Prov Extsn Off	Reg. Province: PrvExtnFinUnit	Extn Offs/Agents	notes
10 Budget																												
-10 Budget Guidelines	8/15				T							G		D	H													
-20 Province Office Submissions	10/1											G									A							
-30 Central Office Submissions	11/1											G							R*		M	D		C	C		A	H
-40 Special Project Budgets	12/1											G		E	C			C	D	A	H							
-50 Departmental Submission to Bgt. Bureau	1/15				S					R	R	R						C	R	D	A	M	C				C*	
-60 National Assembly Submission	7/1	G		D	A					C	C	C		D					C	C*		A						
20 Central Expenditures																												
-10 Salary Releases					X		A		R*		E											I						
-20 Salary Disbursements							T																					
-30 Purchases over ₱500,000					X				R*	S*	S	R	R	G	D		H	A										X=BoB adjusts budget to meet unexpected needs
-40 Purchases over ₱5,000														R	G	D			A		R		I					
-50 Purchases under ₱5,000														S	G	D			A		R		I		I*		I*	
-60 Travel-Perdiem Releases															G		M		T			D	A					
-70 Travel-Perdiem Reimbursements					X		S		R*					S	G	M					D	E	A					R*=DTEC approves foreign aid releases
30 Provincial (Regional) Expenditures														G	D			A				R	R					
-10 Salary Releases																												I
-20 Salary Disbursements					X		A		R*						D		I											
-30 Purchases under ₱5,000																								C	C			
-40 Travel-Perdiem Releases					X		A		R*															D	A		C	I
-50 Travel-Perdiem Reimbursements																	H				I*		I*	D	R		A	H
																											I*	
																								G	A		R	R
																												I

ORGANIZATIONAL RESPONSIBILITY CHART

agency: MINISTRY OF AGRICULTURE area: TRAINING (03) date: October 8, 1976

Task-Position Relationship Code

- A: Action
- C: must be Consulted
- D: Direct supervision
- E: Expedite
- G: General supervision
- H: Help
- I: Initiate action
- M: Merge requirements
- R: Review submissions
- S: Signoff
- T: Technical coordination
- V: Verify by spot check
- X: approve policy eXceptions
- *: optional or alternative

functions & tasks	DEPT OF AG TECHNOLOGY					DEPARTMENT OF AGRICULTURAL EXTENSION															
	Dir Gen Ag Tech	Crop DivsnChfs	CropBsnchChs	Specialists	Science Div Chfs	Specialists	DirGen Extension	DDG Tech Svces	Chf Tech Divn	Tech Specialst	DDG Extnsn Svc	Chf ExtnsnDiv	PlanningSctn	Chf TrainingDiv	Trng Mat Coord	DDG Admin Svces	Informatn Divn	Reg Extension Ofcr	Reg SM Specialst	Reg TrainingOfcr	Media Specialst	Media Asstnt	Prov ExtensnOfcr	Prv SMSpecialst	Prv TrainingOfcr	Dist ExtensOfcr	AstDistExtOfr	Tambon Agent
01 Extension Technical Manual Bulletins																												
-10 Policy & Planning	C*	C				G		G									A*		C*								
-20 Crop Key Points—Technical Recommendations		D	D A		C			R	A*H			D A H			T					C							
-30 Crop Key Points—Extension Presentation			C*					G	D	A				G	E												
-40 Crop Summaries & New Developments			D A		C*									T	E		E*			C							
-50 Crop/Soil Pathology			G A*		R A*				D	E					C				C*								
-60 Zonal Supplements & Modifications															T				C*								
																			G	C			D	A	H*	C	
02 Extension Operations Manual Bulletins																											
-10 Policy & Planning						G		C*				D A H					R C		C*								
-20 Extension Methods & Administration						S*						G D A*		A H			C*		C*								
-30 Zone Annual Workplan																			G	R			D	H	A	C	
-40 Zone Fortnightly Workplan																							G	H*	A	C*	
03 Media Support																											
-10 Policy & Planning						S		R				D R H		A						A*							
-20 Design of Audiovisual Aids														G					C	C*	B A H						
-30 Production of Audiovisual Aids																				G D A							
04 Conduct of Courses (P = Participate)																											
-10 Policy & Planning		C				S		R				G D H		A					C								
-20 Trainer Workshops										P				A H						P							
-30 Senior Seminars						P		P P				D A		H P			P P		P P					P			
-40 Regional/Provincial Courses												G		B					D H	A			P P	P			
-50 Amphur/Tambon Annual Courses																			G H	T			D H	A	P P		P
-60 Zonal Fortnightly Training Sessions																							B H	A	H H		P

The results of this exercise are to be reviewed first at the District level. The results will then be merged and used as a prime starting point for planning the annual work program of the Province. Organizing and summarizing the input from the farmers is designated as a prime responsibility of the Assistant Provincial Extension Officer. This input is also to be fed into research planning.

The first part of the Province planning exercise is the determination of subject matter content and priorities (ORC 01-20-20). The Subject Matter Specialists are to do a first draft based heavily on the summary of the needs and interests of the farmers. This is to be reviewed by the Provincial Extension Working Group, which includes representatives of Farmers' Associations. The program content and priorities may be set to vary from District to District and even from Tambon to Tambón, depending on micro-ecological conditions and expressed interests of farmers. A Provincial plan should be able to handle up to six different patterns of extension operation, six different sets of demonstrations and recommendations.

The operational work plan and schedule (ORC-01-20-30) and the seasonal modifications (ORC-01-20-40) can then be derived from the subject matter priorities--the 2-6 standard technology packages--and the operational guidelines from national headquarters. The training should also be based on the 2-6 standard packages.

In cases where there is a conflict between National extension policies and the interests of local farmers, the Provincial Extension Officer or even the Governor, if necessary, may initiate a National-level reconsideration of the conflicting policies (ORC-01-10-10).

Thus the overall planned operational structure has a sound mixture of delegation, feedback and participation by the farmers themselves.

2. Feasibility and Problems

The planned organizational structure is basically well within the capability of the DOAE. Responsibilities are realistic; no one is overloaded by the structure. The DOAE has an ample supply of trained and experienced manpower to operate the Project. It has over 140 officers who have had extension training in the U.S. Its senior staff has had long years of extension experience. The administrative environment is basically sound, with no social or structural barriers to performance.

But while the administrative arrangements are appropriate, accepted, and feasible, they are also new. Very few of the functions have been done before. A good deal of further preparation is needed for each of the planning and evaluation tasks, including design of formats and procedures and orientation of all involved. Fortunately, the first year operation can proceed with minimal, skeletal, policy, planning, and feedback. DOAE has until August, 1977, to implement the full list of functions and tasks and has committed itself to meet this deadline.

The area of technological adaptation of translating the latest research into something the farmers can use, presents particular problems of organization and decision-making. This effort will be included as a part of the training responsibilities. There has been a tendency of repeating the guidance from out-dated manuals, rather than making the risky judgments of recommendations based on latest research and latest economic conditions. Such judgments must inevitably involve risk of error and differences of opinion, but they must be made if the recommendations are to be relevant and realistic. In addition, the research itself has not always been properly focused on the needs of farmers of various zones. It is important that the feedback from the farmers be input into research as well as extension planning. This issue is covered in ORC 03, Training.

These problems are well within the capability of the DOAE staff to cope with with innovation, provided they have adequate advisory assistance. To make the U.S. assisted component, the training effort, effective, the DOAE will need rigorous, disciplined exercises on subject matter decisions.

The IBRD has emphasized the importance of organization and management. It is requiring certain organizational steps as conditions precedent of its loan, particularly the reorganization into three services and the authorization of new staff positions. It is providing five extension specialists, within the loan, to work with DOAE to develop its overall extension management system.

C. Implementation Plan

This Project is of four years duration. Each year during the four years new Provinces will be brought into the Project and training will be initiated at all levels as described in Part II-C. Once the training has been initiated it is a continuing exercise. Training will have been initiated in all of the 33 Provinces to be included in the Project by the end of FY 1980.

1. PPT and CPS Charts

The step-by-step schedule of implementation is spelled out on the PPT Chart (Annex D) and on the Critical Path Schedule (CPS) (Table IV-C-1), which details the tasks and the critical path for the first-year operation. Activities are further detailed and quantified in the Project Description (Part II-B) and Logical Framework (Annex C). Four salient features should be noted:

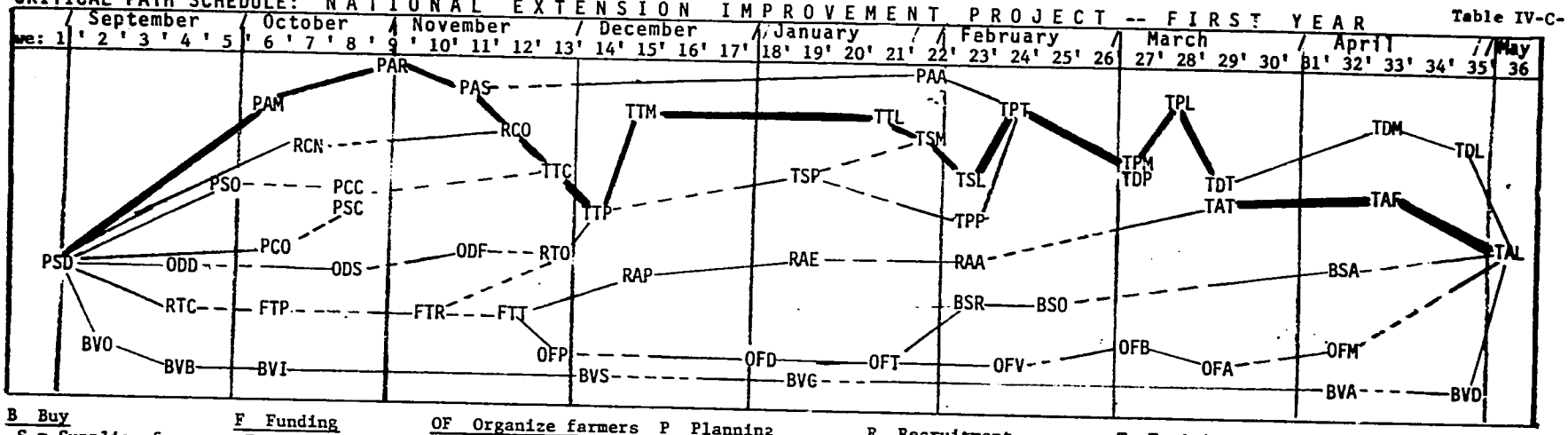
(i) The whole multiplier cascade of annual training has a long annual cycle. As shown on the CPS Chart, it is 22 weeks from the beginning of the Train-the-Trainers Workshop (TTM, week 15) to the end of the course for the Tambon Agents (TAL, week 36). This whole sequence must be repeated for at least the first three years of the Project.

(ii) This means that the launching and on-time completion of the training sequence determines when action on demonstrations can start in the field. In the first year, work on demonstrations cannot start until the second week in May; in subsequent years the training can start earlier and the Tambon Agents can start work in the field in April.

(iii) The timing of the first-year operation is heavily dependent on early implementation actions. As shown on the CPS recruitment of an initial consultant (RCO, week 12), is essential to get TTC (Train Trainers, Curriculum Set) by week 14, so that the whole sequence can start on time. From week 6 to week 12, AID/W is on the critical path.

CRITICAL PATH SCHEDULE: NATIONAL EXTENSION IMPROVEMENT PROJECT -- FIRST YEAR

Table IV-C-1



B Buy
- S = Supplies for demonstrations
- V = Vehicles
- R = Requirements determined
- O = Original docs. (or Ordered)
- B = Bank approval
- I = Invitations to bid
- S = Submit tenders
- C = Contracted
- A = Arrived *
- D = Distributed

F Funding
- T = Thai budget
- P = Parliamentary approval
- R = Released
- T = Transferred to provinces

OD Organize Divisions (of DoAE)
- D = Drafted
- S = Structure & Staff approved
- F = Functioning

OF Organize farmers
- P = Province-level presentation
- D = District-level presentation (to Kamnan)
- T = Tambon-level 1st meeting
- V = Village-level 1st meeting
- B = Board of FA elected
- A = Approval of FA Board
- M = Model farmers selected

P Planning (1st yr. program)
- C = Crop subject matter
- S = Schedule
- D = Drafted
- O = Orig. Office approval
- C = Concurrences**

PA Project by AID (Proj. Paper & loan)
- M=Mission signoff
- R=Review by Bureau
- S=Signoff on PP
- A=loan Agreement Approved

R Recruitment
- C = Consultants(US)
- T = Trainers & Technical staff
- A = tambon Agents
- C = CSC & Cabinet approval
- P = Publish vacancies
- E = Examinations
- N = Nominated
- A = Accepted
- O = On board

T Training
- T = Trainers
- S = Senior officers
- P = Prov/Regional officers
- D = District officers
- A = tambon Agents
- C = Curriculum set
- P = Preparations completed
- T = crop Technology part begins
- M = extension Methodology part begins
- F = First session ends
- L = Last session ends

critical path ———

slack - - -

* need new regulation on Motorbikes

** of Governors, provincial Ag Officers, etc.

(iv) The RTG Project Management Staff is emphasizing the use of the Critical Path Method (CPM) in keeping this Project operating on time. The Thai version of the CPS, Table IV-C-2, is being presented to all involved in the Project as the official schedule. At the request of the RTG Project Management, the Design Team has given the planning section of the Division a thorough course in the application of the Critical Path Method.

Subsequently, two CPS Charts will schedule the operation for each year; the first will schedule the preparations for the training cycle, and the second will schedule the training cycle and preparations for demonstrations.

2. Technical Assistance

The AID loan will provide funding for 48 months of technical assistance for a full time Agricultural Extension Training Advisor and for 15 person-months of consultant services. The long term advisor will assist with all aspects of the training programs that make up the Project. The consultants will assist in the areas of (1) extension training, (2) production of audio-visual aids, and (3) training module evaluation. Position descriptions for both the long-term advisor and the short-term consultants are included in Annex B-3.

The long-term advisor is expected to arrive in February, 1977. The first of the short-term consultants will be needed as soon as the advisor has had an opportunity to get a feel for the Project and the directions he wants to go--in other words, within at least two months of the advisor's arrival. At this time it is not possible to determine an exact scheduling for the consultants, but it would be during the first three years of Project implementation, in about equal number of person months each year.

The Development Support Communications Services (DSCS) of the UNDP will, during the first year, establish methods for and assist in evaluating/monitoring on a continuing basis and assist with developing DOAE capability in preparation and utilization of training materials. During the first year this assistance will be funded through the loan. After that time DSCS expects to have its own funds available for such assistance.

3. Coordination with IBRD Loan

IBRD staff members who have been working in Thailand with the Bank's documents for the proposed loan estimate that their loan will be signed by January, 1977. Procurement of training materials and construction of training centers could begin at that time. Given the amount of equipment already availible to DOAE and the training facilities available in the Northeast, the implementation area for the first year, such a schedule of IBRD inputs would combine well with the AID Project.

In the event that the IBRD Loan signing is delayed, the Bank has authorized and the RTG is using funds, now available, from the Northeast Rural Development Loan for immediate implementation.

4. AID Monitoring Procedures

AID's monitoring of the Project will be carried out by the USOM Project Officer assigned to the Project. He or she will maintain a close working relationship with counterparts in the DOAE. As the Project progresses the USOM Project Officer will be provided with reports on the inclusion of new Provinces, number of persons trained, etc. On-site personal visits will provide information about the quality of training, etc.

5. Disbursement Procedures and Schedule

With the exception of technical assistance from the U.S. Advisors, all costs under this loan will be local currency. Dollar funds will remain in the U.S. Treasury and will be dispersed by AID directly to the recipient upon request from the RTG.

An advance of local currency will be made--the amount of which will be that amount estimated as being required for the first six months of the Project. Upon receipt of certification by the RTG that a given amount has been expended for Project implementation and a request for reimbursement, USOM will replace those funds. An advance of funds is justified because of the strain the large start up costs for the National Extension Project will place on the RTG budget.

It is anticipated that, with RTG approval, USOM will also make some direct payments of local currency, e.g. in the case of DSCS.

D. Evaluation Plan

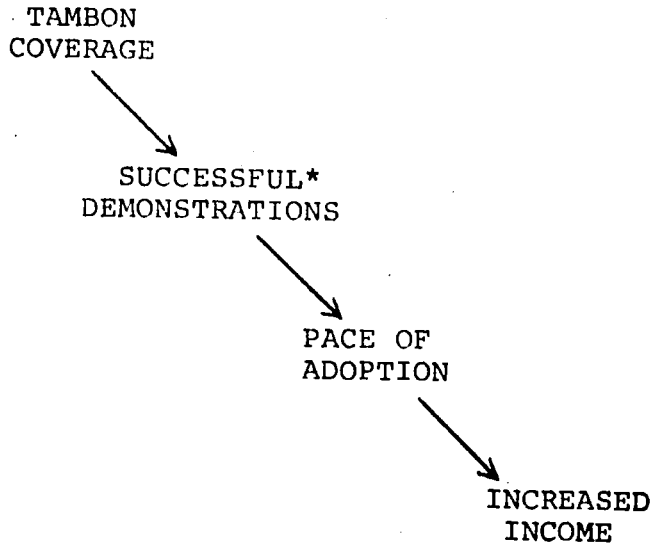
Planned evaluations will be on an annual basis with major evaluations occuring in 1978 and 1980. Some preliminary targets which will serve as a very rough basis of evaluation are in Section 1 below. Two salient aspects of evaluation in this Project should be noted:

- The essential measure of effectiveness and success is how well extension communicates research findings, how fast the latest usable research results are presented to and adopted by farmers. The target figures and features used for evaluating the Project should therefore be modified each year in light of the new technological opportunities that have been extended in the past year.

- The AID evaluation will be a by-product of the Thai evaluation--evaluation will be an integral part of the Thai management cycle. The basic data for evaluation should come out of DOAE reports and data sampling. The AID evaluator will participate in a joint effort to understand the meaning of that data. The joint evaluation will feed back into DOAE planning guidelines.

1. Logic and Measures of Evaluation

The basic logic of this Project might be summed up in the following diagram:



*See Part III-D-2 for definition of "successful" demonstrations.

Thus, Evaluation must examine the three key ratios that follow, compare them with expectations, and come to understand why they differed from expectations.

a. Coverage: Successful Demonstrations

Coverage of a Tambon, staffing it with a Tambon Extension Agent, should result in a successful demonstration of 1-3 crops in 4-12 villages, depending on the year of operation and the number of villages in the Tambon. In the first year of operation in the Tambon, successful demonstrations in half the villages is a reasonable expectation.

Successful demonstrations depend on three factors, in addition to the presence of the Tambon Extension Agent:

(i) The suitability of the extension program for the area. This is the most important factor. Were the crops and practices being demonstrated indeed sound innovations for the farmers of that area, given current costs and prices, risks of market and weather, and competing uses for resources? These aspects must be examined first, in analyzing any shortfall in successful demonstrations, and in analyzing whether the demonstrations were successful. The first step in the analysis is to examine the suitability of the past year program, in light of current conditions.

(ii) Suitability of operating procedures. If the content of the program was suitable, were field routines and management procedures applied that would assure on-target execution of the demonstrations?

(iii) Suitability of training. If the content and the operating procedures were sound, did the Officers and Agents grasp them fully?

b. Successful Demonstrations: Rate of Adoption

Following a successful demonstration, did the expected number of farmers undertake to try to adopt the practices? Part III-D-2 gives the basic assumptions about

the rate of adoption. If the pace of adoption falls substantially short of the rate indicated for the zone by these assumptions, then the cause of the shortfall and the validity of the pacing assumptions must be analyzed. In many cases it may reflect back on the validity of the program, the suitability of the demonstrations to the needs and interests of the farmers.

Or it may reflect on the inadequacy of the follow-up support. A successful demonstration must be followed by adequate credit and logistics.

c. Rate of Adoption: Increased Income

Did farmers who undertook to try the practices increase yields and income as expected? Again, the annual program of demonstration (for the previous year) must be re-examined in light of current market and weather conditions. Was there indeed money to be made the past year by following the recommendations? Then the degree to which farmers did indeed follow the recommendations should be examined.

2. Baseline Data

The data on the present system in Tables III-A-3 and III-D-1 provide a good initial baseline. They are taken from crop surveys whose statistical probability of error is lower than would be a problem for this kind of planning. However, next year a census of agriculture is scheduled, for the first time since 1963. The baseline data can be further refined and validated from the census. It may also be useful to refine and redefine the zones, for purposes of extension planning.

3. Collection of Data

a. Crop Surveys

The annual crop survey will provide a measure of general "control" data. In addition, the DOAE should undertake a small sampling of adopters in each zone, and of unimproved control farmers in the same villages, to derive a statistical estimate of the rate of adoption and the degree of adoption. Each farmer sampled should be checked for rai planted in the crop, practices applied, and yield obtained. Again, the sample need not be large, probably no more than 100 per zone.

b. Demonstration Reports

Results and problems of every demonstration should be reported, and the reports should be summarized in Tables at various levels. Two important points should be observed:

(1) Reports should be spot checked.

(2) Reports should not be a threat to officers and agents. Extension personnel are not to feel "measured" by the quantity of successful demonstrations, or honest reporting will meet massive resistance. Rather, it should be understood by all that success of demonstrations is determined by many circumstances, of which personal performance is only one.

4. Analysis and Evaluation Reports

The first step is to summarize the data from surveys and reports in proper form at District, Province, and Zone levels, particularly the latter. Then it should be analyzed for reasons for shortfalls.

It may be useful to have joint analysis, by a combined DOAE-IBRD-USOM team. Having identified the salient shortfalls, they should then go to the field to gain further insight from direct observation.

The evaluation report should be in the May to July period. This allows adequate time for survey and summation of the data on the previous year. This timing would also be appropriate to link with the annual survey of the Project area planned for mid-April to mid-June. The survey will be carried out by an MOAC agency or local Thai University, funded by IBRD, to determine Project impact. This computerized annual report will be available to USOM. It is also in time to make the evaluation report a useful feed-in to the annual guidelines exercises (See Part IV-A, ORC-01-10), and thus into planning for the coming year.

5. Channels of Communications

Other channels of communication should be noted and taken into account in the evaluation. The comments of farmers on the coming year program (see ORC-01-20-10) should provide insights on whether the demonstrations are addressing the real needs of various localities. Since the programs will, in subsequent years, be based on farmer interests,

there should not be a great deal of divergence. However, it will be most interesting to see how the farmer concerns and interests change as a result of the program, from one year to the next.

6. AID Evaluation Support

A $75,000 grant element of this Project is proposed to assist with evaluation activities. During the four year life of the Project two major joint Thai-U.S. evaluations are planned in 1978 and 1980. AID grant funds will cover costs, including travel, of external consultants. In addition a portion of this grant will cover local currency costs of surveys, etc. carried out by Thai universities that are necessary in preparation of data for the joint evaluations.

E. Conditions, Covenants and Negotiating Status

1. Conditions Precedent to Disbursement

a. The Loan Agreement will include the following conditions precedent to initial disbursement*:

- An opinion of counsel, acceptable to A.I.D., that this Loan Agreement has been duly authorized and/or ratified by, and executed on behalf of, the Borrower, and that it constitutes a valid and legally binding obligation of the Borrower in accordance with all of its terms;

- A statement of the names of the persons holding or acting in the office of the Borrower specified in Section 9.3, and a specimen signature of each person specified in such statement;

- A request for an initial quarterly advance to meet incremental training costs, supported by detailed projections of anticipated expenditures for such cost.

- Evidence that the Borrower has entered into a loan agreement with the International Bank for Reconstruction and Development (IBRD) which has been deemed effective and which in AID's judgement will provide

resources adequate to complete the project (in conjunction with those resources provided by the Borrower and AID) and which contains terms satisfactory to AID (as previously discussed between AID and the Borrower) concerning the provision of training facilities, extension agent housing, training equipment and vehicles for extension agent transportation; the augmentation of staff personnel; staff reorganization and various delegations of authority.

* It is anticipated that three conditions precedent dealing with a detailed financial plan, an implementation plan and an evaluation plan which are included in the draft Project Authorization (Annex I) will actually be annexes to the Project Loan Agreement instead of conditions precedent.

b. The last condition precedent listed above concerns a loan for this project (called for IBRD purposes the "National Extension Improvement Project") being negotiated between the RTG and the IBRD. AID is relying on that loan to provide substantial resources for the project and to assure that the following needed actions are taken by the RTG:

- Plans (including financial plans) for the provision of adequate training facilities and Extension Agent housing, for the procurement of training equipment, and for the provision of vehicles for Extension Agent transportation;

- Evidence that the Civil Service Commission has authorized the required new staff positions in the DOAE in line with the implementation of Extension Services in the Project Provinces;

- Evidence of the establishment of a clear line of command from the Director General of the DOAE, to the Extension Agents in the sub-districts, including

  - allocation to the Deputy Directors General of clear functional responsibility over headquarters Extension and Technical Divisions;

  - appointment of a Senior Administrative Officer to supervise headquarters administrative Divisions; and

  - delegation to the Regional Extension Officers of supervisory responsibilities for Provincial Extension Services in their respective regions.

2. Covenant

As indicated, the current IBRD/RTG loan negotiations for National Extension Improvement Project include the conditions listed in 1.b above. All parties involved fully expect the consummation of the IBRD loan with the inclusion of these conditions. The AID loan will include a covenant requiring compliance with those arrangements as detailed in the IBRD loan.

3. Other Conditions for Successful Project Implementation

USOM recognizes that other conditions are important to successful Project Implementation. These are:

- A detailed financial plan for the Project outlining Project costs and source of funds to cover these costs.

- A detailed implementation plan for the Project.

- A detailed evaluation plan for the Project.

USOM and the RTG have jointly developed and agreed to these plans which are included in this Project Paper at Parts III-B, IV-C and IV-D, respectively. Appropriate adaptations, consistent therewith, will be attachments to Annex 1 (Project Description) of the Loan Agreement.

4. Negotiating Status

The foregoing conditions and covenants have been discussed with the RTG. There are no substantive areas of disagreement between the Mission and the RTG regarding Project documentation and implementation. Documentation substantively similar to this Project Paper is going through the RTG for approval which will lead to the Request for Loan Assistance.

AGRICULTURAL REGIONS AND ZONES

Northeast--the poorest, dryest third of the Kingdom, with 43% of the farms of the Project. It is a relatively homogeneous area in terms of existing and potential farming systems. Therefore the officially designated Zones 2-4 have been treated as one zone, to simplify the analysis. Zone 5 (Nakhon Ratchasima and Chaiyaphum) presents a diverse picture. West of Korat it is very similar to Zone 7 (see below). Other project areas are included, for this analysis, in Zone 2-4.

Central Delta--an area of rice monoculture, with varying degrees of irrigation and water control. About 22% of the area can support a second rice crop. It covers only 1 Zone in this Project, Zone 11.

Central Fringe--The provinces east and west of the Central Delta present a diverse picture, with relatively large farms and a high degree of commercialization:

- Zone 7, defined to include the western part of Nakhon Ratchasima, is the main maize-producing area of Thailand.

- Zone 12, to the west, is the main sugar-producing area.

- Zone 13, defined to include Chon Buri is the main cassava-producing area.

North--a well-watered, mountainous area, with fertile valleys, includes 4 zones in this Project:

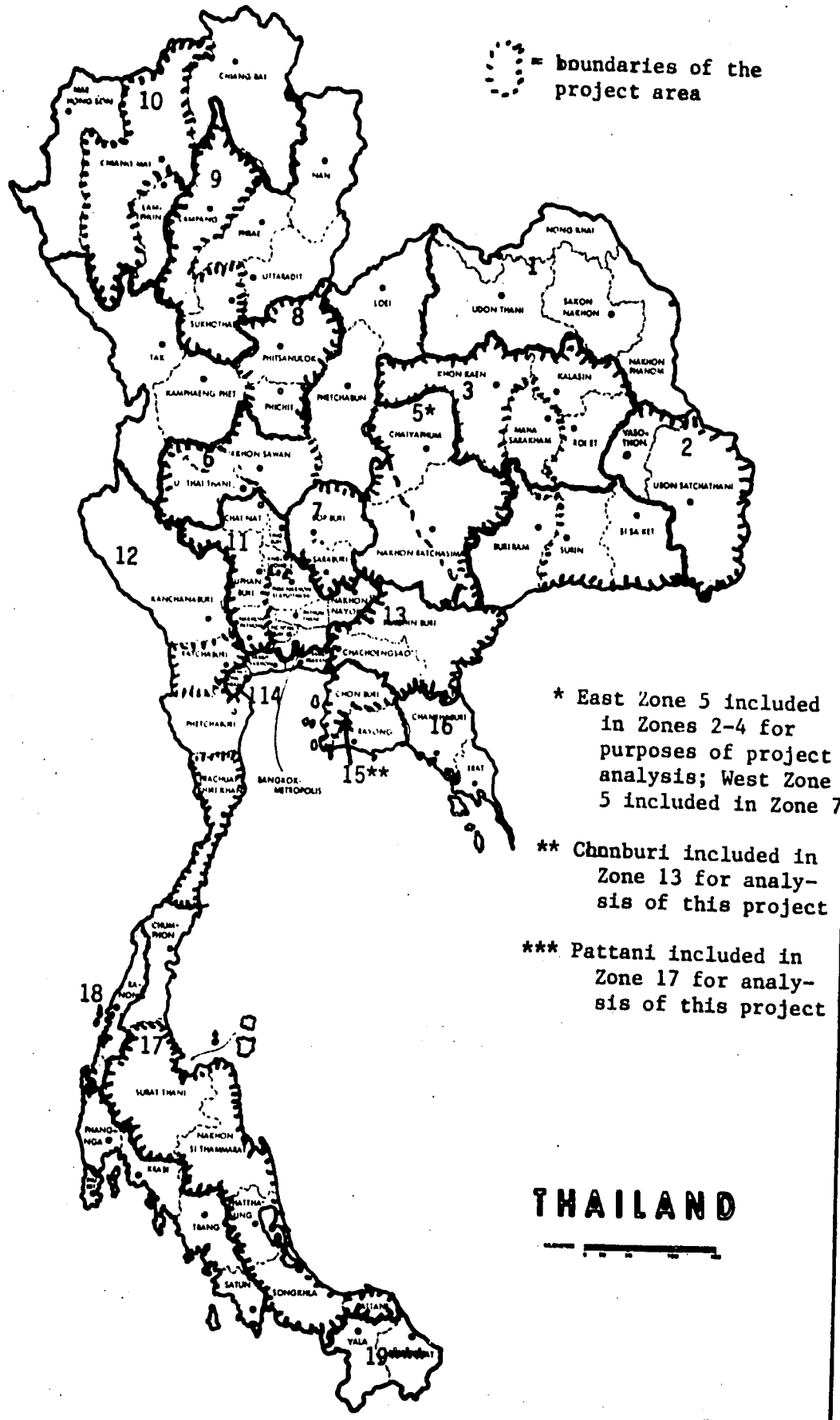
- Zone 6, much like neighboring Zone 7, is heavily commercialized with large maize farms.

- Zone 8, a transitional area, is the main mungbean producing area.

- Zone 9, to the North, has a fairly reliable rainfall pattern, small farms, and some of the highest yields.

- Zone 10, Chiang Mai Province only in this Project has small farms of irrigated rice (though little of it with a second crop).

AGRO-ECONOMIC ZONES



South--a region with a long rainy season, with rubber, coconuts, and horticulture as the main cash crops. Pattani is included in Zone 17 for purposes of this analysis.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: National Extension Improvement

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Program or Sector Goal: (A-1)	Measures of Goal Achievement: (A-2)	(A-3)	Assumptions for achieving goal targets: (A-4)
To increase the income of people who live in the rural areas, with emphasis on the poorer small farmer.	An increase in average income per farm of $125-$200 on 1,760,000 farms, 48% of the farms of Thailand, by 1985 in 33 project provinces.	- The Annual Crop Survey. - A special sampling of adopters and control farms.	1. Marketing: the present and planned marketing systems can absorb production increases. 2. The delivery system for production inputs can adjust to and accommodate increased demand resulting from this project. 3. Credit will continue to grow at least half as fast as projected by the RTG (see PP - III.D.5).

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: National Extension Improvement

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Project Purpose: (B-1)	End of Project Status: (B-2)	(B-3)	Assumptions for achieving purpose: (B-4)
To provide effective agricultural extension services at the village level in 33 project provinces which will: a) enable the farmer to make better informed decisions, b) cause him to use improved farming techniques, c) enable him to convey his views and needs back to the "bureaucracy".	1. A system of pre-service and in-service training for extension personnel operating effectively in 33 provinces. 2. Effective coverage of villages in 33 participating provinces by extension agents. a. Ratio of extension agents to farm families is 1:800. b. Average frequency of agent visits per village is at least twice per month. 3. Routine of interaction between researchers, extension personnel, and farmers established at village and district levels. 4. Increasing degree of adoption of improved farming techniques with 85% of farmers in project villages adopting new practices by end of 1981. 5. Reduction of the gap between current and potential crop yields by at least 50% based on local research stations' yields. 6. Farmers views and needs influence decision-making and content of planning guides for extension program. 7. RTG decision to expand project coverage to remaining 38 provinces.	1. Project evaluation. 2. Reports of activities by Tambon Agents; spot-checking by supervisors; project evaluation. 3. Record of contacts and meetings; project evaluation. 4. Annual crop survey; special sample survey of farmers adopting new techniques and control farms. 5. Annual crop survey. 6. Agent reports on farmers' views; specific examples by provincial committees; spot opinion surveys. 7. DOAE staff; adequate budgetary allocation.	1. The DOAE will create a progressive career system to motivate extension personnel through advancement opportunities and other incentives. 2. Crops and practices demonstrated will represent sound innovations for specific conditions in various agro-economic zones. 3. These innovations will be equally relevant the farmers with smallest land-holdings and lowest disposable incomes. 4. Increased availability of other inputs, including credit, is not critical to project success, but will influence the magnitude of financial returns to the farmer (and the project). 5. Project pacing assumptions (Section III-D of PP) are roughly valid.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: National Extension Improvement

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs: (C-1)	Magnitude of Outputs: (C-2)	(C-3)	Assumptions for achieving outputs: (C-4)
A. Outputs of AID-financed project			
1. Development of crop - specific training modules.	1. One or two cropping technology packages introduced by Tambon Agent first year and increased to 3 or 4 by year four, and revised as necessary.	1. - Regular and periodic training reports and records.	1. Extension agents can be sensitized to the need to treat farmers as equals.
2. Administrators and instructors trained.	2. '77 '78 '79 '80 Regions (cum) 1 3 4 4 Provinces (cum) 4 15 25 33 Personnel trained (non-cum) 14 26 25 20	2. - Joint US-Thai evaluations.	2. Sufficient numbers of qualified personnel will be available to fill new positions in the extension service.
3. VTR/Audio Visual production capability created within extension organization.	3. (Cumulative) Production facilities 1 3 4 4 Staff trained in VTR 9 33 54 70	3. - DOAE staffing patterns.	3. The cooperation of village leaders and model farmers can be obtained.
4. New and existing extension personnel at following levels trained: Regional/Provincial Staff District Agents Newly recruited Tambon Agents Tambon Agent Staff	4. 40 150 250 330 60 170 280 400 523 972 859 809 - 523 1495 2354	4.	
(continued)	(continued)	(continued)	

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: National Extension Improvement

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs: (C-1) (continued)	Magnitude of Outputs: (C-2) (continued)	(C-3) (continued)	Assumptions for achieving outputs: (C-4)
5.* Coordination and Advisory Committees established.	5. (Cumulative) '77 '78 '79 '80 National Coord. Committee 1 1 1 1 Provincial Coord. Committee 4 15 25 33 Technical Advisory Committee (Prov.) 4 15 25 33 Annual Planning Guides and Provincial Plans 4 15 25 33	5.)	
6.* Routine communication channels for farmer views established.	6.a. Informal Channels - Model farmers and Tambon Agents solicitng and reporting farmer views. b. Formal Channels - Annual questionnaires and meetings, with reports to Provincial Committees-	6. Evaluations, Farmer Surveys, Spot Checks.	
(continued)	(continued)	(continued)	

* The indicated outputs are attributable to the assistance of both the AID and IBRD Loans.

PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: National Extension Improvement

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Outputs: (C-1) (continued)	Magnitude of Outputs: (C-2) (continued)	(C-3) (continued)	Assumptions for achieving outputs: (C-4)
7.* Successful field demonstrations of improved farming techniques.	7. '77 '78 '79 '80 No. of villages in which demonstrations organized. 6,275 14,050 20,920 29,000 No. of villages with successful demonstrations. 3,140 10,160 17,500 25,000	7. Extension Agent Reports.	

* The indicated outputs are attributable to the assistance of both the AID and IBRD Loans.

Project Title: National Extension Improvement

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS
Outputs: (C-1)	Magnitude of Outputs: C-2)
B. Outputs of IBRD-financed project	
1.* Improve organization and management.	1.a. Reorganization of the Department of Agricultural Extension into three functional divisions. b. Clarified lines of authority. c. More efficient management procedures introduced. d. Increased field supervision. e. Extension Agents relieved of multiple statistical and regulatory responsibilities.
2. Expansion of extension service (no. of personnel) in 33 Provinces.	2. New Staff Appointments (non-cum.)
3. Completion of new extension facilities.	3.

	Existing	'77	'78	'79	'80	Total
Ministry Staff	1251	10	6	5	5	1277
Regional Staff	12	2	4	4	2	24
Provincial Extension Officers	76	4	4	4	4	92
Provincial Subject Matter Specialists	56	25	70	65	50	266
Provincial Training Officers	0	12	33	30	24	99
District Extension Officers	396	11	30	27	22	486
Extension Agents	625	300	825	750	625	3125

	'77**	'78	'79	'80	'81
Regional Centers	-	2	-	1	-
Provincial Extension Centers	3	9	9	8	4
District Extension Centers	47	82	82	83	38
Housing for Tambon Extension Agents	30	170	175	185	70

* The indicated outputs are attributable to the assistance of both the AID and IBRD Loans.

** Initial year structures will be financed by the existing IBRD Northeast Rural Development Loan.

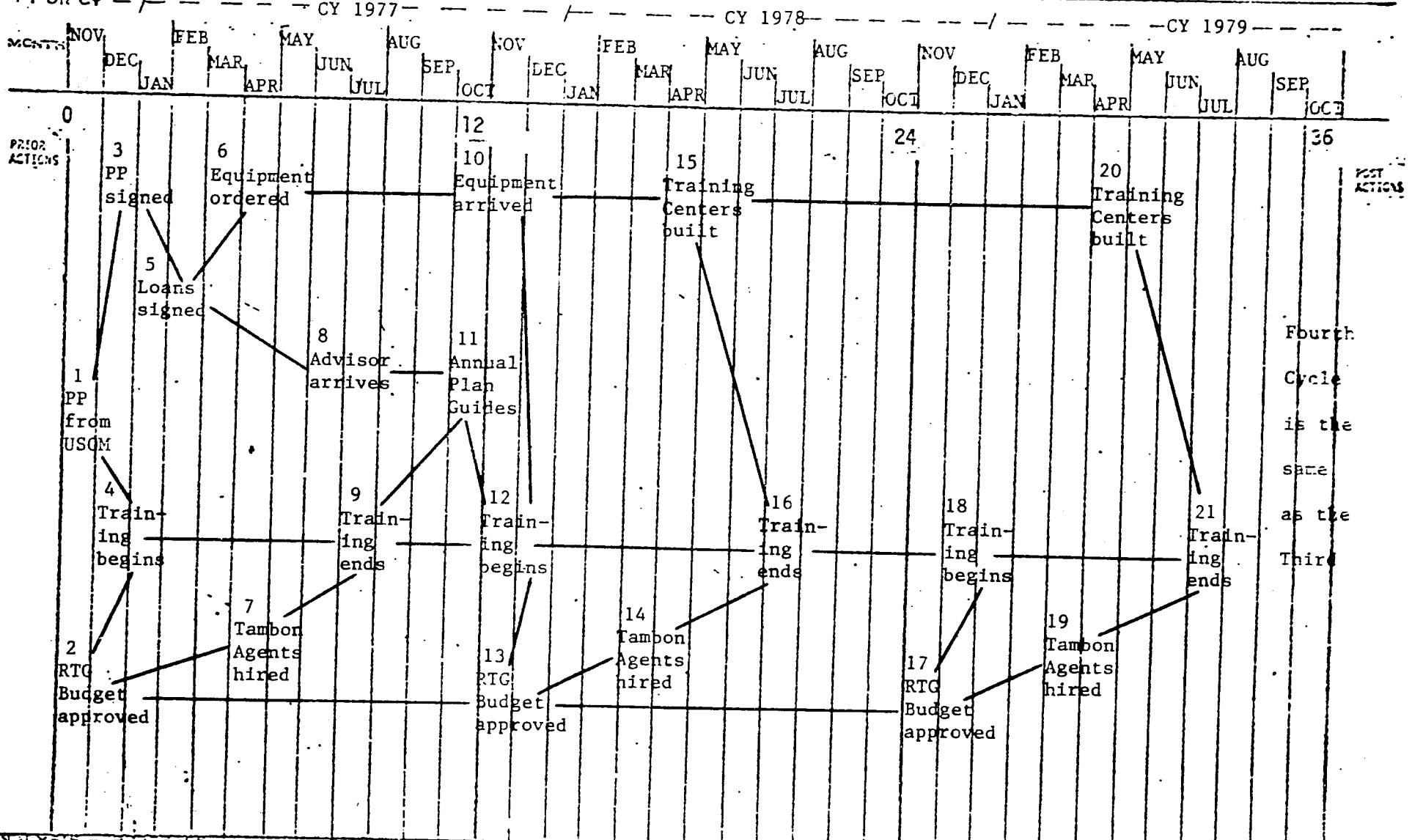
PROJECT DESIGN SUMMARY
LOGICAL FRAMEWORK

Project Title: National Extension Improvement

NARRATIVE SUMMARY	OBJECTIVELY VERIFIABLE INDICATORS	MEANS OF VERIFICATION	IMPORTANT ASSUMPTIONS
Inputs: (D-1)	Implementation Target (Type and Quantity) (D-2)	(D-3)	Assumptions for providing inputs: (D-4)
RTG			
- Personnel	- DOAE personnel increase from 2416 to 5369.	- Annual RTG budgets.	1. The Thai Civil Service Commission authorizes the required new staff positions for the extension service.
- Capital Costs	- $ 3.25 million	- Project Evaluation	
- Incremental Operating Costs	- $24.25 million $27.5 million	- Project Records	
USAID			
- Technical Assistance	- $0.46 million (25 4 yrs. - ST 15 mm)	- Discussions with IBRD officials.	2. The IBRD loan for $28 million is signed according to present schedule (December 1976/ January 1977).
- Incremental Training Cost	- $2.54 million $3.0 million		3. The RTG provides the planned budget for the incremental operating expenses of the extension service.
IBRD			
- Capital Costs - Construction	- $10.8 million		
- Vehicles, Equipment, and furniture	- $10.9 million		
- Formal Training (50 post-graduate fellowships)	- $ 0.8 million		
- Technical Assistance (2480 man-months)	- $ 3.0 million		
- Physical Contingencies	- $ 2.5 million $28.0 million		

ANNEX D.

COUNTRY	PROJECT NO.	PROJECT TITLE	DATE		
THAILAND	493-0270	AGRICULTURAL EXTENSION OUTREACH	10/18/76	X ORIGINAL / REVISION #	APPROVED



CRITICAL PERFORMANCE INDICATOR (CPI) NETWORK

AID 1020-35 (6-76)

COUNTRY	PROJECT NO.	PROJECT TITLE	DATE	ORIGINAL / REVISION	APPROVED
THAILAND	493-0270	AGRICULTURAL EXTENSION OUTREACH	10/18/76	X / β	

PROJECT PURPOSE (FROM IN FACESHEET)

To establish an improved flow of information to and from the farm population in 33 provinces which will:

a) enable the farmer to make better informed decisions,
b) cause him to use improved farming techniques,
c) enable him to convey his views and needs back to the "bureaucracy".

CPI DESCRIPTION

1. Nov 76 Project Paper submitted to AID/W by USOM/Thailand.

2. Nov 76 RTG Budget approved for 1977 with sufficient funds for 450 Tambon Agents.

3. Dec 76 Project Paper approved by AID/W.

4. Dec 76 The first training sequence begins with a Train-the-Trainers course, at least 15 trainers and Subject-Matter Specialists participating, at least one U.S. Technician assisting.

5. Jan 77 AID loan agreement signed.

6. Mar 77 Equipment ordered from IBRD funding, at least $300,000 in vehicles and training equipment.

7. Apr 77 At least 400 Tambon Agents recruited and on board in 4 provinces.

8. June 77 USOM Training Advisor on board.

9. July 77 First training sequence completed with at least 40 District Officers and at least 360 Tambon Agents trained.

10. Oct 77 Equipment ordered by CPI #6 at least 75% arrived.

11. Oct 77 Annual Planning Guides issued by Department of Agricultural Extension (DOAE) for FY 1978.

12. Nov 77 Second training sequence begins with at least 25 participating in the Train-the-Trainers Course.

13. Nov 77 RTG Budget approved for FY 1978 with at least funds for 1,200 Tambon Agents.

14. Mar 78 At least 800 new Tambon Agents recruited and on board.

15. Apr 78 Training Centers completed in at least one region and three provinces.

16. July 78 Second training sequence ends with at least 125 District Officers and 1,000 Tambon Agents.

17. Nov 78 RTG Budget approved for 1979 with funds for at least 2,000 Tambon Agents.

18. Dec 78 Third training sequence begins with at least 30 participating in the Train-the-Trainers Course.

19. Mar 79 At least 800 new Tambon Agents hired and on board.

20. Apr 79 Training Centers completed in at least two regions and 12 provinces.

21. July 79 Third training sequence ends with at least 300 District Officers and 2,000 Tambon Agents completing courses.

CRITICAL PERFORMANCE INDICATOR (CPI) DESCRIPTION

PROPOSED IBRD LOAN
TO THE KINGDOM OF THAILAND
FOR A
NATIONAL AGRICULTURAL EXTENSION PROJECT

A. Project Description

The Project will provide for the establishment of an intensified and expanded Extension Service for most agricultural crops under the Department of Agricultural Extension (DOAE). It will include the appointment of additional staff and the introduction or expansion of sound extension methodology with emphasis on regular farm visits and continuous training for extension workers. The Project will also include construction of Regional Training Centers, Provincial and District Extension Centers and houses for Extension Agents, procurement of vehicles to support field operations, and equipment for training, field experimentation and demonstration. Consultants will be engaged to assist the DOAE with Project execution and a fellowship program will be included to assist in upgrading staff.

The agricultural extension methodology to be employed in the present Project has been developed jointly by the RTG and the Bank, evolving gradually through extension components in three Bank-financed irrigation projects (Credits 379-TH and 461-TH and Loan 1149-TH) and the recently initiated Northeast Rural Development Project (Loan 1198T-TH). This Project moves beyond the latter by replacing progressive farmers ("Farmer Foremen") working on a part-time basis for token wages with trained professional full-time Extension Agents as the regular points of contact between the DOAE extension service and the farming community. Extension Agents will serve about 1,000 farm families, and will be supervised by District and Provincial Extension Officers and technically assisted by Subject Matter Specialists. Field extension work will initially concentrate on a few of the major yield improving practices of the major crops in each area.

Total Project cost is estimated at US$58.6 million of which US$22 million, or about 39%, will be in foreign exchange. The Loan will finance the foreign exchange component as well as US$6 million of local currency costs, or 50% of total Project costs. Local currency financing is justified in view of the need for substantial Bank participation in this difficult Project, the need for assistance during the start-up period when substantial increases in budgetary allocations

are required, and the need for a Project of sufficient size to ecompass the major food and export crop producing areas. RTG will provide the remaining ฿570 million (US$28 million), which will cover the incremental operating costs (฿531 million) of DOAE extension services at headquarters level and in the 33 Project Provinces during project implementation and 15% of construction costs. Vehicles and equipment costing about US$7.2 million will be procured following international competitive bidding. Construction contracts for Regional Training Centers (about US$500,000 each) will be awarded following international competitive bidding. Contracts for construction of Provincial and District Centers and houses, which will be dispersed throughout the Project Provinces, will be grouped in packages of about ฿10 million (US$500,000) each and tendered on the basis of competitive bidding following local advertising. A local engineering firm with expertise in architecture will be employed to assist with the preparation of plans and tender documents and supervision of construction of all Training and Extension Centers. About 280 man-months of consultant services in the fields of Agricultural Extension and project monitoring (US$1.7 million) will be required to assist DOAE in planning, implementing and monitoring the Project, while a further 500 man-months of local consultant services are required for design work, construction supervision and procurement. Contingencies amount to US$14 million, of which US$11.6 million are for anticipated price increases.

DOAE headquarters organization will be strengthened to ensure smoother and more effective operation. The Director General will be assisted by two Deputies responsible for Technical and Extension Services respectively and a Senior Administrative Officer who will head Administrative Services. The administrative and technical line of command will flow from head office through the Regional and Provincial Extension Officers to the District Extension Officer who will supervise the Extension Agents stationed in the subdistricts. The Director General of the DOAE will have overall responsibility for Project implementation, while the day-to-day direction of extension implementation in the Provinces will rest with the Chief of the Extension Division under the Deputy Director General, Extension Services.

B. IBRD-Financed Activities

The proposed National Agricultural Extension Project will expand and strengthen existing DOAE extension services in 33 of Thailand's 71 provinces. The IBRD loan will assist in financing the following:

(1) Strengthening the headquarters organization of DOAE and establishing clear lines of command and coordination from the national level to the districts;

(2) An increase in the number of extension staff;

(3) Introduction of sound extension methodology with emphasis on continuous training and regular farm visits;

(4) A program of local training for all extension workers along with a limited number of fellowships and overseas training tours;

(5) Construction of three new Regional Training Centers, 30 Provincial Extension Centers, 285 District Extension Centers and about 600 houses for Extension Agents;

(6) Procurement of vehicles, equipment and furniture;

(7) Employment of agricultural and engineering consulting firms, an individual consultant for Project monitoring and short-term specialist services totalling about 30 man-months; and

(8) Project monitoring.

ANNEX G

Department of State TELEGRAM

ADVANCE ACTION COPY

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PAGE 01 BANGKO 03298 110930Z
ACTION AID-59

INFO OCT-01 EA-09 EB-08 IGA-02 /079 W
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P 1109052 FEB 77
FM AMEMBASSY BANGKOK
TO SECSTATE WASHDC PRIORITY 9166

UNCLAS BANGKOK 3298

AIDAC

E. O. 11652: N/A

SUBJ: AGRICULTURAL EXTENSION OUTREACH PROJECT - BORROWER/GRANTEES APPLICATION FOR ASSISTANCE

1. USOM HAS JUST RECEIVED FEB 8, 1977 LETTER SIGNED BY SUPHAT SUTATUM, MINISTER OF FINANCE, ADDRESSED TO AMBASSADOR WHITEHOUSE REQUESTING U.S. ASSISTANCE FOR SUBJECT PROJECT.

2. TEXT OF LETTER IS QUOTE DEAR MR. AMBASSADOR, THE MINISTRY OF FINANCE HAS BEEN ADVISED AND REQUESTED BY THE MINISTRY OF AGRICULTURE AND COOPERATIVES THAT THE IMPLEMENTATION OF THE NATIONAL EXTENSION PROJECT WHICH ENVISAGES A BROAD EXPANSION OF AGRICULTURAL EXTENSION SERVICES HAS BEEN PROPOSED AND DISCUSSED AT THE OFFICIAL LEVELS BETWEEN THAT AND U.S. AUTHORITIES AS ELIGIBLE FOR FINANCIAL ASSISTANCE FROM U.S. AID. IT IS ENVISAGED THAT THE U.S. GOVERNMENT LOAN WILL ASSIST IN THE INCOUNTRY TRAINING ASPECTS OF THIS PROJECT AT VARIOUS LEVELS. {PARAGRAPH} ACCORDINGLY, THE MINISTRY OF FINANCE HEREBY SUBMITS OUR APPLICATION FOR A LOAN WITHIN THE PRINCIPAL AMOUNT OF U.S. DOLS. 3 MILLION FROM THE AGENCY FOR INTERNATIONAL DEVELOPMENT UNDER THE FY 1977 U.S. DEVELOPMENT ASSISTANCE PROGRAMME FOR THAILAND FOR THE PURPOSE OF FINANCING PARTIAL COSTS OF THE NATIONAL EXTENSION PROJECT. WE SHALL BE LOOKING FORWARD TO YOUR EARLY AND AFFIRMATIVE REPLY. {PARAGRAPH} WITH BEST REGARDS, YOURS SINCERELY. MINISTER OF FINANCE. UNQUOTE.

DRAFT OF

PROJECT DESCRIPTION TO BE USED IN THE PROJECT LOAN AGREEMENT

*Section 2.1 Definition of Project. The Project, which is further described in Annex 1, is designed to raise the incomes of rural farmers in 33 selected provinces in Thailand by conveying to them, and stimulating them to adopt, improved methods of farming which will increase their agricultural productivity. To this end the Loan shall be available to finance the costs of advisory and consultant services, the incremental costs (on a declining basis over the four-year period of the Loan) of expanding the extension service of the Borrower's Department of Agricultural Extension, and the costs of establishing a comprehensive system for training extension workers and farmers in the techniques necessary for the successful implementation of the Project. Annex 1, attached, amplifies the definition of the Project contained in this Section 2.1.

Within the limits of the definition of the Project in this Section 2.1, elements of the amplified description stated in Annex 1 may be changed by written agreement of the authorized representatives of the Parties named in Section 9.3 without formal amendment of this Agreement.

*Section 3.2 Borrower Resources for the Project

(a) .....

(b) The Project is a core element of the RTG National Extension Improvement Project (NEIP), a coordinated enterprise having a total cost estimated at Fifty-Eight Million Six Hundred Thousand U.S. dollars (US$58,600,000). The NEIP is being undertaken by the Borrower with the assistance of a loan of Twenty-Eight Million U.S. dollars (US$28,000,000) from the Bank for International Reconstruction and Development to finance the construction of physical facilities, the acquisition of commodities, and certain training and advisory services. The resources provided by the Borrower for the NEIP, including costs borne on an "in-kind" basis, will be not less than the equivalent of Twenty-Seven Million Five Hundred Thousand U.S. dollars (US$27,500,000).

* Section references are keyed to the Project Loan Agreement format (September 8, 1976) transmitted with AIDTO CIRCULAR A-503.

As Annex 1, Project Description, to the Loan Agreement, USOM intends to use the Project Description in Part I-C of this Project Paper. It was developed in conjunction with the Thai and thus has been agreed upon by all concerned.

ANNEX I

DRAFT AUTHORIZING DOCUMENT

AGENCY FOR INTERNATIONAL DEVELOPMENT
PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS PART I

1. TRANSACTION CODE: A (A = ADD, C = CHANGE, D = DELETE)

PAF

2. DOCUMENT CODE: 5

3. COUNTRY/ENTITY: THAILAND

4. DOCUMENT REVISION NUMBER:

5. PROJECT NUMBER (7 digits): 493-0280

6. BUREAU/OFFICE: A. SYMBOL: ASIA; B. CODE: 02

7. PROJECT TITLE (Maximum 40 characters): AGRICULTURAL EXTENSION OUTREACH

8. PROJECT APPROVAL DECISION — ACTION TAKEN: A = APPROVED, D = DISAPPROVED, DE = DEAUTHORIZED

9. EST. PERIOD OF IMPLEMENTATION: YRS. 04 QTRS. 0

10. APPROVED BUDGET AID APPROPRIATED FUNDS ($000)

A. APPROPRIATION	B. PRIMARY PURPOSE CODE	PRIMARY TECH. CODE C. GRANT	PRIMARY TECH. CODE D. LOAN	E. 1ST FY 77 F. GRANT	E. 1ST FY 77 G. LOAN	H. 2ND FY 78 I. GRANT	H. 2ND FY 78 J. LOAN	K. 3RD FY 79 L. GRANT	K. 3RD FY 79 M. LOAN
(1) FN	120	012	012	50	3,000	50	0	0	0
(2)									
(3)									
(4)									
TOTALS									

A. APPROPRIATION	N. 4TH FY 80 O. GRANT	N. 4TH FY 80 P. LOAN	Q. 5TH FY 81 R. GRANT	Q. 5TH FY 81 S. LOAN	LIFE OF PROJECT T. GRANT	LIFE OF PROJECT U. LOAN
(1) FN	0	0	0	0	100	3,000
(2)						
(3)						
(4)						
TOTALS						

11. PROJECT FUNDING AUTHORIZED (ENTER APPROPRIATE CODE(S)) 1 = LIFE OF PROJECT, 2 = INCREMENTAL, LIFE OF PROJECT

	A. GRANT	B. LOAN
	1	1

C. PROJECT FUNDING AUTHORIZED THRU FY

12. INITIAL PROJECT FUNDING ALLOTMENT REQUESTED ($000)

B. ALLOTMENT REQUEST NO.

A. APPROPRIATION	C. GRANT	D. LOAN
(1) FN	100	3,000
(2)		
(3)		
(4)		
TOTALS	100	3,000

13. FUNDS RESERVED FOR ALLOTMENT

TYPED NAME (Chief, SER/FM/FND)

SIGNATURE

DATE

14. SOURCE/ORIGIN OF GOODS AND SERVICES: [ ] 000 [X] 941 [X] LOCAL [ ] OTHER

15. FOR AMENDMENTS, NATURE OF CHANGE PROPOSED

FOR PPC/PIAS USE ONLY	16. AUTHORIZING OFFICE SYMBOL	17. ACTION DATE MM DD YY	18. ACTION REFERENCE (Optional)	ACTION REFERENCE DATE MM DD YY

AID 1330-6 (7-76)

PROJECT AUTHORIZATION AND REQUEST FOR ALLOTMENT OF FUNDS

PART II

Name of Country: Thailand

Name of Project: Agricultural Extension Outreach

Number of Project: 493-0280

Pursuant to Part I, Chapter I, Section 103 of the Foreign Assistance Act of 1961, as amended, I hereby authorize a loan to the Kingdom of Thailand, the "Cooperating Country" of not to exceed three million United States Dollars ($3,000,000) the ("Authorized Amount") and a grant of not to exceed one hundred thousand United States Dollars ($100,000) to help in financing certain foreign exchange and local currency costs of goods and services required for the Project as described in the following paragraph.

The Project consists of the development of a vastly improved pre-service and in-service training program for extension personnel of the Thai Department of Agricultural Extension (DOAE) in 33 of Thailand's 71 provinces, to increase the capability of the Extension Service in these provinces to provide useful information to the farm population (hereinafter referred to as the "Project"). The AID-financed Project is one element in a broader National Extension Improvement Project which will also receive financial assistance from the IBRD. AID-financing will be concentrated on the software aspects of training, while the IBRD loan will help finance expansion of the Extension Service, improvements in organization and management, and construction of new training centers and provincial and regional extension centers. The entire amount of the A.I.D. financing herein authorized for the Project will be obligated when the Project Agreement is executed.

I approve the total level of A.I.D. appropriated funding planned for this Project of not to exceed three million one hundred thousand United States Dollars ($3,100,000), of which $3,000,000 will be loan-funded and $100,000 grant-funded including the funding authorized above, during the period FY 1977 through FY 1980.

I hereby authorize the initiation of negotiation and execution of the Project Agreement by the Officer to whom such authority has been delegated in accordance with A.I.D. regulations and Delegations of Authority, subject to the following essential terms and covenants and major conditions and such other terms and conditions as A.I.D. may deem appropriate:

a. Interest Rate and Terms of Repayment

The Cooperating Country shall repay the Loan to A.I.D. in United States Dollars within forty (40) years from the date of first disbursement of the Loan, including a grace period of not to exceed ten (10) years. The Cooperating Country shall pay to A.I.D. in United States Dollars interest from the date of first disbursement of the Loan at the rate of (a) two percent (2%) per annum during the first ten (10) years, and (b) three percent (3%) per annum thereafter, on the outstanding disbursed balance of the Loan and on any due and unpaid interest accrued thereon.

b. Source and Origin of Goods and Services

Except for ocean shipping, goods and services financed by A.I.D. loan funds under the Project shall have their source and origin in the Cooperating Country or in countries included in A.I.D. Geographic Code 941, except as A.I.D. may otherwise agree in writing. Ocean shipping financed under the Loan shall be procured in any eligible source country except the Cooperating Country.

c. Conditions Precedent to Initial Financing

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, the Borrower shall furnish in form and substance satisfactory to A.I.D.

1. A detailed financial plan for the Project outlining Project costs and source of funds to cover these costs.

2. A detailed implementation plan for the Project.

3. A detailed evaluation plan for the Project.

4. A request for an initial quarterly advance to meet incremental training costs, supported by detailed projections of anticipated expenditures for such cost.

5. Evidence that the Borrower has entered into a loan agreement with the International Bank for Reconstruction and Development (IBRD to provide additional resources and set certain conditions for project implementation.

Items 1, 2 and 3 may be furnished separately or included as attachments to the Project Loan Agreement.

d. Other Conditions Precedent

Prior to any disbursement, or the issuance of any commitment documents under the Project Agreement, for other than the initial quarterly advance, the Borrower shall furnish in form and substance satisfactory to A.I.D.

1. Plans (including financial plans) for the provision of adequate training facilities and Extension Agent housing, for the procurement of training equipment, and for the provision of vehicles for Extension Agent transportation;

2. Evidence that the Civil Service Commission has authorized the required new staff positions in the DOAE in line with the implementation of Extension Services in the Project Provinces;

3. Evidence of the establishment of a clear line of command from the Director-General of the DOAE to the Extension Agents in the sub-districts, including

   - allocation to the Deputy Directors-General of clear functional responsibility over headquarters Extension and Technical Divisions;

   - appointment of a Senior Administrative Officer to supervise headquarters administrative Divisions; and

   - delegation to the Regional Extension Officers of supervisory responsibilities for Provincial Extension Services in their respective regions.

Any of these conditions may be satisfied by inclusion in a loan agreement between the Borrower and the Bank for Internatioal Reconstruction and Development in a manner which AID deems adequate to assure that the Borrower will take the desired action.

Clearances:	Typed Name	Office Symbol	Date	Initial
	A.			
	B.			
	C.			
	D.			
	E.			
	F.			

Signature _____
(Typed name)
AA/ASIA

INITIAL ENVIRONMENTAL EXAMINATION

Project Location: Thailand

Project Title: Agricultural Extension Outreach

Funding: FY 77 - $3 Million Loan, $100,000 Grant

Life of Project: Four Years, 1977-1980

IEE Prepared by: Alan B. Jacobs, ASIA/TR/SDP
November 10, 1976

Environmental Action Recommended: Negative Determination

Concurrence*/:
Clearance :

T. C. Clark, Jr., Director, ASIA/TR — 11-15-76 Date

A. R. Love, Director, ASIA/PD
(Jonathan R. McCabe for) — 11/x1/76 Date

Threshold Decision by Assistant Administrator, Bureau for Asia
(Approval/Disapproval of Negative Determination recommended on page 1 of IEE):

Approval: _____
Donald D. Cohen, A-DAA/ASIA

Disapproval: _____

Date: 11/16/76

*In the initial implementation of AID Environmental Procedures, IEEs for FY 77 projects are being done in AID/W rather than in Mission. Hence AID/W clearance appears here.

INITIAL ENVIRONMENTAL EXAMINATION

Agricultural Extension Outreach
Thailand

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

Description of Project*

This project addresses the need for improvement of farming methods if Thailand is to enhance its food production. The purpose of this project is to assist the RTG in strengthening its agricultural extension service by improving its pre-service and in-service training for extension workers. The AID-financed project is one element of a broader Thai national extension improvement project which is being supported by the IBRD also. AID-financing will be concentrated on qualitative improvements in the training provided extension workers while the IBRD-assisted project will expand the number of extension workers, improve the organization and management of the service and construct needed facilities.

Identification and Evaluation of Environmental Impacts

Since this project is basically a training and organizational effort, little or no environmental impact can be directly attributed to the project.

II. Recommendation for Environmental Action

This proposed action is not a major action which will have a significant effect on the human environment and is, therefore, an action for which an Environmental Assessment will not be required. It is therefore recommended that a Threshold Decision for Negative Determination be made.

*Based on October 1976 Project Paper.

[redacted]

[redacted]

PROJECT PAPER

Proposal and Recommendations
For the Review of the
Development Loan Committee

THAILAND - AGRICULTURAL EXTENSION OUTREACH
ANNEXES A, B-1, B-2, B-3, B-4, F, K, L, and M

AID-DLC/P-2216

UNCLASSIFIED

LIST OF ANNEXES

A. AID/W PRP Approval Message

B. Project Details

B-1 Train-the-Trainers Workshops

B-2 Sample Training Modules

B-2a Extension Methods and Communications for Tambon Agents

B-2b Rice Production for Tambon Agents

B-3 Position Descriptions

B-3a U.S. Agricultural Extension Training Advisor

B-3b U.S. Short-Term Consultants

B-3c Tambon Agents

B-4 Video-Tape Recording in Teaching

F. Statutory Checklist

K. Training Program Details (pp. 32-38 of original draft of PP)

L. Critical Path Schedule — Thai Version (pp. 101-102 of original draft of PP)

M. Detailed Schedules for Disbursements and Implementation (pp. 104-108 of original draft of PP)

ANNEX A

TELEGRAM

Foreign Service of the United States of America

INCOMING USOM/Thailand

A851EHE021
RR RUMJOB
DE RUEHC #0087/1 0010338
ZNR UUUUU ZZH
R 010005 7Z JAN 76
FM SECSTATE WASHDC
TO AMEMBASSY BANGKOK 9935

UNCLASSIFIED
Classification

Control: 010
Rcvd: JANUARY 2, 1976
0952

ACTION UNCLAS SECTION 1 OF 2 STATE 000087/1

USOM AIDAC

INFO E.O. 11652: N/A

CDA TAGS:
ADCM
ECON
FILES

SUBJECT: AGRICULTURAL EXTENSION OUTREACH PRP

1. ASIA PROJECT ADVISORY COMMITTEE (APAC) APPROVED SUBJECT PRP DECEMBER 15. USOM/T ROBERT CAHN ALSO PARTICIPATED IN REVIEW. PRP APPROVAL CONDITIONED UPON ACCEPTABLE INTERIM REPORTS RECEIVED AID/W WITHIN ABOUT 90 DAYS ON FOLLOWING CRITICAL ISSUES:

ACTION
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DD
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O/FIN
O/MGT
O/PROG
CHRON
RF

(A) ADDITIONAL SUPPORT NEEDED FOR PROJECT JUSTIFICATION. PRIORITY OF AGRICULTURE EXTENSION IN RELATION TO OTHER DETERMINANTS OF INCREASED AGRICULTURAL PRODUCTION IN THAILAND SHOULD BE DISCUSSED, INDICATING THAT THE PROPOSED PROJECT ADDRESSES A KEY CONSTRAINT. ANALYSIS OF ASSUMPTIONS (1) THRU (4), P. 4, PRP NECESSARY IN ORDER ASSURE THESE ELEMENTS NOT CRITICAL TO PROJECT SUCCESS.

(B) ADDITIONAL DETAIL ON OVERALL PROJECT ORGANIZATION AND MANAGEMENT IS NEEDED TO DETERMINE ADEQUACY OF IMPLEMENTATION ARRANGEMENTS. THE ORGANIZATION, MANPOWER, AND FINANCIAL RESOURCES OF THE DOAE SHOULD BE DESCRIBED AND EVALUATED. THE RELATIONSHIPS AND INTERDEPENDENCE BETWEEN THE DOAE AND OTHER AGENCIES WITH A ROLE IN PROJECT IMPLEMENTATION SHOULD ALSO BE DISCUSSED. ADDITIONAL INFORMATION ON THE IBRD ROLE IN THIS PROJECT SHOULD ALSO BE INCLUDED. A DISCUSSION OF THE LINKAGES BETWEEN THIS PROJECT AND OTHER AGRICULTURAL PROJECTS AND PROGRAMS IN THAILAND SUCH AS SEEDS DEVELOPMENT PROJECT, SECTOR ANALYSIS AND PLANNING PROJECT, TAMBON COUNCIL PROGRAM, ETC., IS ALSO NEEDED.

(C) THE CRITERIA FOR AND MEANS OF SELECTION OF TAMBON VOLUNTEERS AND FARMER LEADERS IS A KEY ISSUE AND SHOULD BE DESCRIBED IN DETAIL. (APAC ASSUMES THESE INDIVIDUALS WILL BE SELECTED FROM LOCAL AREA WHERE THEY WILL WORK). SYSTEM OF INCENTIVES FOR THESE INDIVIDUALS SHOULD ALSO BE DISCUSSED.

UNCLASSIFIED
Classification

FORM FS-501
1-64
AID 1-64

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(D) FEEDBACK SYSTEM MENTIONED 2B(4), P. 3 PRP SHOULD BE DESCRIBED IN MORE DETAIL: APAC PARTICULARLY CONCERNED THAT FEEDBACK MECHANISM, ONCE ESTABLISHED,HAVE PROVISION FOR RESPONDING TO FARMERS' CONCERNS AND THAT TARGET GROUP PERCEIVES IT HAS ROLE IN AND BENEFIT FROM FEEDBACK SYSTEM; INTERIM REPORT SHOULD THEREFORE DESCRIBE HOW SUCH AGENCIES AS THE AGRICULTURE DEPARTMENT'S RICE AND CROPS DIVISIONS AND BAAC WILL UTILIZE FEEDBACK. FYI: AID POLICY ENDORSES INTEGRATION OF RESEARCH AND EXTENSION FUNCTIONS TO MAXIMUM POSSIBLE EXTENT ON PREMISE THAT UTILITY BOTH ELEMENTS WILL BE SIGNIFICANTLY ENHANCED.

(E) WOULD APPRECIATE OUTLINE OF EVALUATION PROCEDURE INCLUDING PLANS FOR BASELINE DATA. THIS SHOULD INCLUDE CRITERIA TO BE USED, WHO WILL PARTICIPATE IN EVALUATION AND WHEN IT IS TO TAKE PLACE AS WELL AS WHEN PAR IS TO BE SUBMITTED. COST ESTIMATE AND INTENDED SOURCE OF FUNDS AND PLANS TO DEVELOP EVALUATION CAPACITY WITHIN DOAE SHOULD BE DISCUSSED. ALSO SUGGEST THAT LOGICAL FRAMEWORK EOPS SHOULD BE QUANTIFIED TO FACILITATE OBJECTIVE VERIFICATION. IN ADDITION, PROVIDE ESTIMATE OF ANY AID/W TDY OR CONSULTANT ASSISTANCE THAT MAY BE NECESSARY.

2. THE FOLLOWING ISSUES DO NOT REQUIRE AN INTERIM RESPONSE AND SHOULD BE ADDRESSED IN THE PP OR AS OTHERWISE INDICATED;

(A) AID PARTICIPATION IN PROJECT SHOULD BE JUSTIFIED BY INDICATING HOW PROJECT IS STRENGTHENED BY THIS PARTICIPATION;

(B) APAC CONCERNED THAT THE MORE PROSPEROUS FARMERS MAY BE MORE AGGRESSIVE IN OBTAINING PROJECT OUTPUTS THUS REDUCING AVAILABILITY TO MORE NEEDY FARMERS; ONE APPROACH FOR ASSUMING PARTICIPATION BY POOR MIGHT BE TO FOCUS BENEFITS ON RURAL GROUPS COMPOSED PRIMARILY OF SMALLER FARMERS. REGARDLESS OF FINAL APPROACH TAKEN, PROJECT DESIGN SHOULD EMPHASIZE AT A MINIMUM THAT POORER FARMERS SHARE EQUITABLY WITH OTHER FARMERS IN PROJECT BENEFITS. THE SOCIAL SOUNDNESS ANALYSIS SHOULD INDICATE WHICH GROUPS ACTUALLY BENEFIT FROM PROJECT;

(C) CARE SHOULD ALSO BE TAKEN DURING FINAL PROJECT DESIGN TO INSURE MAXIMUM PARTICIPATION OF THE BENEFICIARIES IN PROJECT IMPLEMENTATION. PP SHOULD DESCRIBE NATURE AND EXTENT SUCH PARTICIPATION.

(D) ONE OF PROJECT OUTPUTS IS QUOTE THE DEVELOPMENT OF A DOAE ORGANIZATIONAL STRUCTURE WITH A RESPONSIVE PERSONNEL MANAGEMENT SYSTEM THAT REWARDS INITIATIVE AND AMBITION UNQUOTE. PP SHOULD CLEARLY DESCRIBE HOW PROJECT INPUTS WILL LEAD TO THIS OUTPUT.

(E) DETAILED BREAKDOWN AND ANALYSIS OF COST ESTIMATE NEEDED. ANALYSIS OF TRANSPORTATION COSTS SHOULD INDICATE THAT MAINTENANCE, GASOLINE, ETC. ARE ADEQUATE TO SUPPORT REQUESTED VEHICLES; APPROPRIATE INFLATION FACTOR SHOULD BE ADDED TO FINAL COST ESTIMATE.

(F) SEVERAL FIGURES IN TEXT AND TABLES OF PRP ARE INCONSISTENT. CAHN HAS DETAILS.

(G) ALTHOUGH ROLE OF WOMEN ADDRESSED P. 9 PRP, APAC SUGGESTS PP FOCUS AND EXPAND ON DESIGN ELEMENTS SERVING TO ELEVATE POSITION OF WOMEN IN SOCIETY OUTSIDE OF TRADITIONAL ROLES--FOR EXAMPLE THEIR PROPOSED USE AS AMPHOE AGENTS.
BT
#ØØ87

UNCLAS FINAL SECTION OF 2 STATE ØØØØ87/2

AIDAC

(H) ENVIRONMENTAL IMPACT SHOULD BE ADDRESSED. GUIDANCE FOLLOWS SEPTEL.

3. WOULD APPRECIATE DRAFT LOAN AGREEMENT FORWARDED FOR REVIEW WITH PP.

4. SUGGEST USOM FINALIZE PLANS FOR PROJECT DEVELOPMENT SCHEDULE P. 15 PRP SOONEST AND CABLE TO AID/W DETAILED REQUEST FOR REQUIRED MANPOWER RESOURCES CONTAINING WORKSCOPES, SCHEDULING, ETC. ROBINSON

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Pensri

TRAIN-THE-TRAINERS WORKSHOPS

Introduction

The planned Train-the-Trainers Workshops are designed to develop the essential competencies required by training and audio-visual personnel in the National, Regional, and Provincial Agricultural Extension Offices. The workshops are to provide opportunities for the Extension Training Officers to participate in activities related to their training assignments. These assignments include all aspects of planning, executing, evaluating, and managing the training programs associated with Tambon level, District level and some of the Provincial level training. The Training Officers will have a major effect upon the training program as their teaching styles will become a catalyst in subsequent training activities. It is anticipated that these people will influence most of the instructional practices of all training sessions. Therefore, the workshop sessions should enable the Training Officers to obtain the pedagogical competencies necessary for successful training programs in the National Extension Improvement Project.

Goal

The goal of the Train-the-Trainers Workshops is to adequately prepare the Training Officers in as short a period as possible. The extension training programs must be managed by personnel who have a background that includes extension experience plus experience relating to the teaching processes. The shortage of time available for pedagogical preparation of the Training Officers requires an intensive series of learning experiences for this cadre. The workshops will provide a maximum amount of time for individual preparation of training programs plus time for the participants to actually practice instructional techniques for peer and workshop leader(s) critique.

Suggested Topical Outline

The following outline is suggested for the Train-the-Trainers Workshops:

A.	National Extension Improvement Project and Opening Ceremony	½ day
B.	Training Workshop Goals	½ day

C. Behavioral Objectives ½ day

1. Develop appropriate statements

2. Review developed statements

3. Design sets of objectives for project

D. Motivating Techniques 1½ days

1. Psychological needs of trainees

2. Communication skills--including simulation and discussion

3. Learning Process--including simulation activities

4. Diffusion-Adoption--including simulation and discussion

E. Audio-Visual Methods 4 days

1. Develop software materials

a. Posters and lettering

b. Flannel board and chalk board

c. Overhead transparencies

e. Slides and photos

f. Audio tapes

g. Video tapes

h. Cinema

i. Leaflets

2. Practice techniques in simulated instructional settings

F. Teaching Methods 3 days

1. Identify types of behavioral changes

2. Identify various instructional processes

3. Design formats for instructional methods

4. Practice instructional methods

   a. Lecture

   b. Group discussion

   c. Group work

   d. Problem solving

   e. Practical experiences

   f. Demonstrations

   g. Role playing and simulation

5. Individual and group behavioral considerations

   a. Characteristics of the individual

   b. Group dynamics

   c. Leadership functions

G. Lesson Planning — 3 days

1. Develop format--including time, materials and resources

2. Develop typical introduction--including objectives

3. Develop typical summary--including learning outcomes

4. Design learning activities--including teaching methods

5. Present an actual lesson

H. Module Design — 2 days

1. Determine objectives for each activity

2. Establish content of module

3. Determine resource people

4. Develop appropriate teaching methods

5. Identify teaching materials

6. Determine content evaluation techniques

7. Develop module outlines for subjects and levels

I. Module Evaluation 2 days

1. Identify criteria of module objectives

2. Establish training performance

3. Determine feedback techniques

4. Develop formats for module evaluation

5. Develop informal evaluation methods

   a. Cognitive feedback

   b. Affective feedback

J. Extension Methods 5 days

1. Motivating rural people--including simulation

2. Identify method demonstration principles

3. Develop method demonstration plans

4. Identify result demonstration principles

5. Develop result demonstration plans

6. Practice demonstration plans

7. Identify steps in conducting farm visits

8. Plan farm visit format

9. Simulate farm visits

10. Plan Model Farmers meetings

11. Simulate Model Farmers meetings

12. Determine planning steps for farm field days

13. Develop format for farm field days

K. Module Presentations 8 days

1. Each participant design personal module

2. Each participant teach actual lesson

3. Critique each participant

4. Video tape presentation for personal review

Total 30 days

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Extension Methods & Communications /x/ Preservice

Trainees: Tambon

Length : 8 days /_/ Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
At the conclusion of the module, the trainee will:					
1. Determine the scope and operation of the project.	I. National Extension Improvement Project A. Objectives B. Goals C. Personnel	Lecture Discussion	Handouts - Objectives - Goals - Staffing Patterns	Oral Questions Discussion	- Personnel from DOAE participate.
2. Determine the principles and program activities of DOAE	II. Principles of Agricultural Extension A. Purpose B. Goals C. Service Areas	Lecture Discussion	Handouts Overhead Transparencies Slides	Oral Questions Discussion	- Illustrate activities in service areas, i.e. agriculture, home economics, and youth.
3. Identify the program areas in agriculture of DOAE.	III. Programs in DOAE A. Rice Irrigation Project B. Farmer Cooperatives C. Others	Illustrated Lecture Forum	Handouts Slides Overhead Transparencies	Discussion	- Utilize personnel from appropriate projects.
4. Be familiar with the communication process.	IV. Communicating with Others A. Channels B. Message C. Barriers D. Feedback Methods E. Treatment of Ideas	Illustrated Lecture Simulation Discussion	Overhead Transparencies Flannel Board and Illustrations Handouts	Simulation Results Observations Oral Responses	- Design problem for audience participation during simulation

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Extension Methods & Communications

Trainees: Tambon

Length : 8 days

[x] Preservice

[ ] Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
5. Determine the process of how farm people accept ideas.	V. How Farm People Accept Ideas A. Stages of Acceptance B. Adoption Curve C. Speed of Adoption D. Categories of Adopters.	Illustrated Lecture Simulation Discussion Case Study	Flannel Board and Illustrations Handouts Overhead Transparencies Discussion Questions	Observations Oral Questions Discussion	- Design group activity to Simulate adoption of an idea by use of a map.
6. Define the changes in behavior during the learning process.	VI. Learning Process A. Psychological Development B. Learning Theories C. Learning Factors D. Behavior Responses	Illustrated Lecture Simulation Discussion	Handouts Mirrors and Diagram Overhead Transparencies Film	Oral Questions Discussion Simulation Results	- Use portion of group to experience new skill with mirror assignment.
7. Identify techniques to motivate rural people.	VII. Motivation A. Personal Needs B. Behavioral Patterns C. Group Dynamics D. Individual Characteristics	Illustrated Lecture Role Playing Discussion Problem Solving	Handouts Overhead Transparencies Role Playing Directions Discussion Questions Film	Discussion Results Problem Solving Results Observations	- Design roles of personality types in an audience - Obtain film illustrating behavioral patterns.
8. Be familiar with common extension methods	VIII. Extension Methods A. Farm Visits B. Farm Meetings C. Field Days D. Method Demonstrations E. Result Demonstrations	Illustrated Lecture Simulation Demonstrations Role Playing Discussion	Handouts Slides Demonstration Supplies Role Playing Directions Discussion Questions	Oral Questions Simulation Results Observations	- Utilize group participation in demonstrations - Follow specific formats for each method.

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Extension Methods & Communications

Trainees: Tambon

Length : 8 days

/x/ Preservice

/ / Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
9. Be able to develop appropriate teaching materials for extension work.	IX. Teaching Materials A. Posters, Lettering B. Charts, Graphs C. Flip Charts D. Fannel Boards E. Slides, Photos F. Radio G. Cinema H. Samples, Models I. Leaflets	Illustrated Lecture Practicals Discussions Demonstrations Problem Solving	Handouts Example Teaching Materials Construction Supplies: - Paper - Pencils, pens - Rulers - Felt and sand paper - Glue Radio or Audio Tapes and Recorders Projector Slides and Photos Content Topics	Observations Final Products Discussion Results Questions	- Time may require group project although each person should participate - Materials should be realistic for extension activities.
10. Determine the application of program planning steps for project responsibilities.	X. Program Planning A. Stages of Planning Cycle B. Activities in Planning C. Checklists for Tasks D. Conceptual Relationships of Tasks	Illustrated Lecture Group Assignments Group Reports Discussion	Handouts Checklist Formats Group Problems Discussion Overhead Transparencies	Observations Checklist Results Discussion Results	- Each person should develop, within a group, a set of checklists for each stage of planning
11. Comprehend the role of the farmer leader in extension efforts.	XI. The Model Farmer A. Characteristics B. Selection C. Utilization D. Feedback	Illustrated Lecture Role Playing Discussion Simulation	Handouts Role Playing Directions Discussion Questions Simulation Activities Slides	Observations Questions Discussion Results	- Use examples from local area(s) - Develop typical problems participants may encounter.

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Extension Methods & Communications

Trainees: Tambon

Length : 8 days

[x] Preservice

[ ] Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
12. Be aware of the need for an appropriate Calendar of Work utilized in the project.	XII. Calendar of Work A. Role of Planning B. Project Activities Required C. Format(s) D. Administration Requirements	Lecture Discussion Practical	Handouts Form(s) Discussion Questions	Observations Final Product Discussion Results	- Note scope of project. - Each person develop an acceptable Calendar of Work (may need sample information).
13. Determine the activities necessary for a method demonstration plan.	XIII. Method Demonstration Plan A. Review Steps B. Assign Topic C. Develop Plan	Lecture Discussion Practical	Forms Technical Data on Crops Discussion Questions	Discussion Results Final Plan	- Participants will need information from crop module(s). - Design a demonstration that is realistic for Tambon.
14. Be able to conduct an acceptable method demonstration.	XIX. Method Demonstration Presentation A. Present Plan B. Conduct Demonstration C. Critique Demonstration	Discussion Presentations	Demonstration Critique Forms	Demonstration Outcomes Observations	- Participants conduct one demonstration and have a critique of performance.
15. Be familiar with the concepts of evaluation as they pertain to method demonstrations.	XV. Method Demonstration Evaluation A. Concepts of Evaluation B. Criteria C. Feedback D. Analysis	Illustrated Lecture Discussion Practical	Critique Forms Overhead Transparencies Discussion Questions	Observations Discussion Results	- Participants analyze critique. - Participants revise plans.

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Extension Methods & Communications [x] Preservice

Trainees: Tambon

Length : 8 days [ ] Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
16. Be able to complete acceptable record forms for Tambon farmers.	XVI. Farmer Record Keeping A. Information Required B. Types of Forms C. Collecting Information D. Recording Information	Illustrated Lecture Demonstration Discussion Practical	Handouts - Forms - Data Overhead Transparencies Discussion Questions	Questions Practical Results Discussion Results	- Develop a record form which can be simple yet effective.
17. Be able to complete acceptable record forms for Tambon Agents.	XVII. Tambon Agent Records A. Information Required B. Format of Form C. Collection Techniques D. Recording E. Transmission of Records.	Illustration Lecture Demonstration Simulation	Handouts Record Forms Overhead Transparencies Simulation Directions	Questions Simulation Results Observations	- Design simulation for collecting and recording data, might consider Role Playing also.
18. Be familiar with activities required to design field trial plots	XVIII. Field Trial Plots A. Role of Trial Plots B. Structure of Plots C. Researchers' Role D. Tambon Agent's Activities	Illustrated Lecture Discussion	Handouts Discussion Questions Trial Plot Slides	Questions Discussion Results	- Emphasis should be made on the tasks required of Tambon Agents.

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Extension Methods & Communications

Trainees: Tambon

Length : 8 days

/x/ Preservice

/ / Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
19. Comprehend the use of farm credit available to Tambon farmers	XIX. Farmer Credit A. Decision Making Factors B. Institutional Requirements C. Strategies for Credit Adoption	Illustrated Lecture Role Playing Discussion	Handouts Role Playing Directions Discussion Questions Overhead Transparencies	Questions Discussion Results	- Develop a Role Playing situation that illustrates farmers' discussion with Tambon Agent regarding credit.
20. Be able to maintain a motorbike according to manufacturer's specifications	XX. Motorbike Maintenance A. Importance of Regular Maintenance B. Maintenace Activities C. Repair of Motorbikes D. Safe Operation E. Daily Checklists F. Breaking In a New Bike G. Purchasing Plan H. MOAC Reporting Records	Illustrated Lectures Demonstrations Discussions Practicals	Handouts Motorbike Manuals Demonstration Models Tools Repair Supplies, incl. spare parts, oil, gas, lubricants, etc. Charts Discussion Questions Practical Exercises	Observations Maintenance Skills Motorbike Operation Questions Discussion Results	- Participants must be able to follow manufacturer's suggestions for maintenance. - A daily checklist should be developed. - MOAC records required will need to be determined - Safe operation should be emphasized.

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Rice
Trainees: Tambon Agents
Length : 5 Days

/x/ Preservice
/ / Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
At the conclusion of the module, the trainee will:					
1. comprehend current cultural practices of District farmers.	I. Area Characteristics A. Topography B. Climate C. Agro-Economic Zone(s)	Lecture Discussion	Handouts - Summaries - Map(s)	Discussion	- Exclude if previously known or taught.
	II. Farmer Cropping Practices A. Land preparation B. Planting C. Pest Control D. Harvesting E. Storage F. Straw utilization	Lecture Field Trip	Field Trip Site(s)	Observation Oral Questions	- Plan trip to nearby farm
2. identify common rice varieties by plant and seed characteristics	III. Rice Varieties and Characteristics A. Upland varieties B. Lowland varieties	Illustrated Lecture Laboratory	Slides Exhibits	Oral Questions Observations	- Laboratory exercise is needed for individual examination of varieties.
3. determine seed treatment practices and chemicals	IV. Seed Treatment A. Procedure B. Chemical(s) C. Pest(s)	Lecture Demonstration Practical	Handouts Seed Chemical(s)	Oral Questions Practical Observations	- Simulate chemical if necessary

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Rice
Trainees: Tambon Agents
Length : 5 days

/x/ Preservice
/ / Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
4. define acceptable planting operations	V. Seedbed Preparation A. Tillage operations B. Paddy development C. Sowing	Illustrated Lecture Demonstration Practical Exercise	Slides VTR Rice Paddy & Seeds Handouts	Oral Question Observations	- Students work in groups for plowing and paddy development. - Simulate sowing if necessary.
5. demonstrate transplanting techniques.	VI. Transplanting A. Soil preparation B. Seedling removal C. Seedling transplanting	Illustrated Lecture Demonstration Practical Exercise	Slides VTR Seedlings Handouts	Oral Questions Observations	- Seedlings should be raised prior to session or simulate seedlings
6. determine nutrient requirements of plant.	VII. Growth Processes A. Nutrients B. Nutrient requirements C. Characteristics of nutrient deficiencies	Lecture Discussion	Overhead Transparencies with Strobe Tape Slides Handouts	Oral Questions	- Obtain slides illustrating nutrient deficiencies
7. determine fertilization application frequency, rates, and methods.	VIII. Fertilizer A. Organic B. Inorganic C. Soil Testing D. Nutrient formulation E. Application (1) Frequency (2) Rates (3) Methods	Lecture Demonstration Practical Exercises Problem Solving	Slides Illustrations Soil Samples Fertilizer Samples Handouts	Oral Questions Observations Problem Results	- Develop application problem(s) - Obtain soil testing materials - Use soils typical to area(s)

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Rice

Trainees: Tambon Agents

Length : 5 days

/x/ Preservice

/ / Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
8. identify pest and appropriate pest controls for rice production.	IX. Pests A. Diseases B. Insects C. Weeds D. Rodents E. Birds F. Crabs	Illustrated Lecture Discussion	Slides Exhibits Transparencies Handouts	Oral Questions	- Handouts should describe major pests.
	X. Pest Controls A. Biological B. Chemical C. Physical or mechanical	Illustrated Lecture Demonstration Discussion	Slides Exhibits Handouts	Oral Questions	- Handouts should describe pest controls. - Reduce emphasis on chemicals - Emphasize local recommendations
9. comprehend problems of moisture stress on rice.	XI. Drought Effects on Rice A. Moisture requirements B. Moisture stress characteristics C. Moisture controls	Illustrated Lecture Demonstration Discussion	Slides Transparencies Handouts	Oral Questions Observation	- Handouts emphasize control measures - Suggest problem solving discussion
10. determine harvesting procedures including yield estimation.	XII. Harvesting Rice A. Maturity characteristics B. Cutting & bundling C. Yield computation D. Transporting	Illustrated Lecture Problem Solving Demonstration	Slides Rice Plants Rice Paddy Handouts	Oral Questions Problem Results Observations	- Develop problems resulting in yield typical to area. - Use yield estimate formulas

NATIONAL EXTENSION IMPROVEMENT PROJECT

Module : Rice

Trainees: Tambon Agents

Length : 5 days

[x] Preservice

[ ] Inservice

Terminal Objective	Content	Instructional Method	Teaching Materials	Evaluation Procedure(s)	Remarks
11. comprehend processing and storage techniques of rice.	XIII. Processing Rice A. Traditional techniques B. Milling operations C. Storage alternatives.	Illustrated Lecture Field Trip Discussion	Slides Mill Site Handouts	Oral Questions	- Obtain slides illustrating traditional techniques of threshing rice.
12. be aware of the marketing and grading facilities available to local rice farmers.	XIV. Marketing Rice A. Local markets B. Commercial markets C. Grades & standards D. Economic values	Illustrated Lecture Discussion Forum	Slides Overhead Transparencies Handouts Rice Grade Samples	Oral Questions Observations	- Selected mill operators or buyers could discuss topic.
13. be familiar with a recordkeeping process acceptable for rice farmers.	XV. Recordkeeping on Rice A. Sample forms B. Data collection C. Data recording D. Date conclusions	Lecture Problem Solving Discussion	Overhead Transparencies Recording Forms Sample Problem	Oral questions Problem Results	- Identify appropriate examples for forms and practices problem.
14. identify the credit sources available to local farmers for rice production	XVI. Credit A. Sources B. Interest computations C. Repayment schedules	Lecture Problem Solving Discussion	Chalk Board Overhead Transparencies Handouts	Oral Questions Problem Results	- Identify all credit available in District. - Emphasize utility of credit for rice production.
15. develop appropriate rice production demonstration plans.	XVII. Demonstration Plans A. Types of Demonstrations B. Techniques identified C. Conclusions	Discussion Problem Solving Group Work	Overhead Transparencies Handouts	Discussion Responses Problem Results	- Emphasize participants' product, a plan for a rice demonstration.

POSITION DESCRIPTION

U.S. Agricultural Extension Training Advisor

Duties:

1. To advise and assist the DOAE National and Regional Extension Training Officers on matters concerning the Extension Outreach Project, specifically on:

   a. Curricula planning for in-service training of extension personnel at all levels;

   b. Selection of qualified "faculty" for training courses;

   c. Sequence planning for training courses;

   d. Introduction of new training concepts and techniques for extension work;

   e. Preparation of teaching aids to improve teaching effectiveness;

   f. Evaluation of training; determination of future needs;

   g. Involvement of rural families in the determination of extension programs;

   h. Developing and maintaining linkages among farm families, extension, and research.

2. To participate in teaching classes, on a demonstration basis.

Qualifications

1. M.S. or Ph.D in Agricultural Extension Education from a U.S. university.

2. At least 5 years professional extension experience, including frequent contact with farm families.

3. At least 2 years of recent experience in extension training in a developing country, with evidence of successful achievement of objectives.

4. Good teaching ability

5. Experience in the production and use of audio-visual aids.

6. Preferably, some work experience in the Far East area.

POSITION DESCRIPTION

U.S. Short-Term Consultants

The National Extension Improvement Project training program activities will require short term professional assistance in addition to the full time Agricultural Extension Training Advisor. The scope and diversity of the various training programs during the first phase of the Project will require short term assistance. The specific functions of the short-term consultants would include assistance in (1) the extension training, (2) the production of audio-visual aids--especially video tape recordings, and (3) the training module evaluation processes. The first specific function, assistance in the extension training activities, will include the following tasks for short-term consultants:

1. Planning selected presentations for the Train-the-Trainers Workshops,

2. Development of teaching aids for the selected presentations,

3. Instructional involvement of the selected presentations,

4. Provide professional assistance to the full time Advisor during the Train-the-Trainers Workshops, such as critique of participants' products and presentations, evaluation of the workshops, design of subsequent modules, etc.,

5. Revise modules, if appropriate, and

6. Review subsequent training programs and provide professional assistance if necessary.

The second function for short-term consultants, assistance in the production of audio-visual aids, will include the following tasks:

1. Review of audio-visual products developed for the Project,

2. Advanced training of audio-visual personnel in production of materials,

3. Development of audio-visual materials for the Project that could be used in the training activities,

4. Development of procedures for subsequent audio-visual materials production, especially VTR,

5. Review plans for utilization of audio-visual materials in the Project, and

6. Develop maintenance procedures for audio-visual equipment.

The final function of short-term consultants refers to the evaluation processes of the training activities and the tasks will include:

1. Determine the essential types of information from the training sessions for evaluation purposes,

2. Design a format(s) for data collection,

3. Development of criteria for evaluation,

4. Prepare evaluation reports of training sessions and modules, and

5. Make recommendations for modification in training programs or strategies.

The short-term consultants may also provide specific assistance to the Project that may be identified as the first phase is implemented. The large amount of training included in the Project, both in terms of personnel trained and number of training programs, could yield unforeseen requirements for assistance beyond the suggested tasks for short-term consultants. The timing and type of short-term assistance should be determined by the Project Manager, the National Training Officer, and the U.S. advisor.

POSITION DESCRIPTION

Tambon Agents, DOAE

Quote from Personnel Division, MOAC in "Project Paper for Improving District Agents Work":

"The Tambon Agent is responsible for all extension duties with crops, livestock, fisheries, and forestry in the Tambon."

The specific tasks that should be included in the assigned "extension duties" will include the following activities:

- Plan demonstration plots for village farmers
- Conduct method demonstrations on village farms
- Conduct training meetings for Model Farmers
- Keep records of visits, demonstrations, Model Farmer meetings, farmer requests, names of Model Farmers
- Coordination of extension activities in the Tambon
- Act as resource person for Tambon farmers
- Contact local agricultural agencies
- Complete reports requested by District Extension Officers
- Plan Calendar of Work and submit to District Extension Office
- Attend in-service training programs
- Attend official MOAC meetings

VIDEO TAPE RECORDING (VTR) IN TEACHING

There is little question that using visual imagery in addition to the spoken word will multiply the effectiveness of the message. This is especially true in the communication of new ideas or the inducement of behavior changes. A black-and-white picture will help to get the point across. If the fidelity of natural color is added to the film, details (e.g. plant diseases) will be easily seen. The total impact upon the audience is limited only by the expertness of the film producer. Thus, aside from the real-life experience, the most desirable communications aid is the reproduction of an activity in motion and in natural color, accompanied by an oral explanation in the listener's language.

In the past, AID's efforts were often characterized by motion picture production to support technical assistance programs in developing countries. The support by AID and host governments has since waned for several reasons:

1. High capital investment - (cameras, lights, studio, editing and synchronizing equipment, projects, screens, electrical generators).

2. High cost of producing films, usually in terms of foreign exchange - (imported raw film, cost of overseas laboratory services in processing and duplicating films).

3. Extended time required for film production - (extra care in script planning to minimize film wastage, time required to process film usually overseas, editing and reshooting as required, final editing, preparation and synchronization of sound track, time required for lab to produce first answer print, final delay of several weeks for duplicating final film at overseas labs, customs formalities).

4. Immutability of film - extreme difficulty in changing either the image or the soundtrack if the original message needed updating.

5. Unavilability of equipment maintenance and repair service.

These disadvantages contributed to the subsequent decline in the use of motion pictures in developmental activities, but the original advantages of film as a motivating and teaching device are still valid.

Advances in the electronic and teaching fields in recent years now provide an alternative teaching tool which overcomes most of the constraints to movie production and still retains all but one of the advantages of movie film*. This is video tape recording--or VTR, for short.

The VTR process is quite similar to sound recording on magnetic tape and is in use in many public school systems and almost all universities in the United States. It is the principle by which television shows are pre-recorded for future and repeated use, as well as the instant-replay feature of sports telecasting.

The basic equipment needed to produce action tapes in color and sound consists of:

VTR color camera--similar to a 16 mm movie camera;

Microphone;

VTR color tape recorder--similar to a sound tape recorder but slightly more complicated to operate;

Color recording magnetic tape, in reels or cassettes;

T-V color receiving sets, in the size and number desired.

The VTR system has overcome the listed constraints to movie production as follows:

1. Initial high capital investment--VTR probably offers little if any reduction in the original cost of equipment;

2. High cost of program production--Here, VTR presents a strong advantage. The image is recorded, not on film, but on magnetic tape. The magnetic tapes are erasable and re-usable for hundreds of times, so that the original raw stock can serve indefinitely. Duplicate copies of programs can be

*VTR is still plagued by a non-standardization of tape width, tape speed, and scanning rate, while 16 mm sound films are standardized for cameras and projectors.

produced on the spot by connecting two VTR recorders, hence, no foreign laboratory services are required.

3. Time required for program production--Here, lies probably the strongest advantage of VTR over motion picture film. The original scripting and shooting time does not change, but automatic exposure control and instant viewing of the results on a tandem monitor eliminate reshooting delays. Sound can be recorded simultaneously with the shooting or can be dubbed in later. Nothing has to be processed so the finished product is available for immediate use (no delays for overseas laboratory work). Since the soundtrack is parallel with the image track, any narration changes, erasures or additions can be made while viewing the image on a monitor.

4. Video tape can be changed very easily--By re-recording or copying, either the image track or the soundtrack, or both can be corrected in a matter of minutes. Thus, a change in the fertilizer rate recommendations from one year to the next can be accommodated by rerecording the correct quantity on the sound track. A change in the method of application can be made by shooting the new method and dubbing it over the original image track.

5. Equipment maintenance and repair--This can be accomplished by many qualified television or electronic repairmen. The proliferation of T-V sets has greatly expanded this capability in most countries. A sound tape recorder repairman can handle video tape recorders if he has the machine's maintenance manual at hand. Maintenance problems have been further diminished by the advent of solid state electronics which replace the former trouble-prone vacuum tubes, and "cards" to replace entire modules of the electronic circuitry.

A disadvantage of the VTR system lies in the limited size of the viewing screen, usually the 25-inch T-V set. This can be somewhat alleviated by connecting several sets to the same playback unit. In the average classroom, two T-V sets can adequately accommodate 25 to 30 viewers, and the room need not be darkened. T-V image projectors are also available to produce an image several feet square but they are expensive and cumbersome.

VTR for classroom use presents other noteworthy values. The cassette tape holder has practically eliminated the entire tape-threading operation. After the cassette is inserted, a button is depressed to start the viewing. At the end of the showing, another button is pressed to automatically rewind the tape. The tape is contained in a sealed cassette, protected from dust and inexperienced fingers. Immediate replay, or slow motion, or "freezing" of action at any point, is possible.

The VTR can replace many other types of visual aids. A 16 mm film can be projected normally and copied off the screen by the VTR camera, with or without the original sound. A set of slides can be projected and copied in a like manner. A flipchart presentation can be recorded visually and audially. A speaker thus can present films, slides, flannelgraphs, models, etc., all on one machine. Outstanding teaching presentations can be "canned" for further use at many locations, as long as a VTR playback unit is available at those locations.

VTR has considerable value for performance improvement. A class presentation by a lecturer, or a method demonstration by an Extension Agent, can be recorded by VTR. After the presentation, the lecturer or Extension Agent can view his own performance to determine where improvements are needed.

The VTR playback unit is as delicate as a 16 mm sound projector, and transport should be kept to a minimum. Where the use of this medium will be frequent, such as at a training center, it would be advisable to permanently install the VTR and the desired number of T-V receivers.

The central production office would require at least two VTRs in order to edit and make duplicates of programs. When programs are required for commercial television station use, it is advisable to copy the original tape on the machine to be used by the T-V station.

ANNEX F

STATUTORY CHECKLIST

BASIC AUTHORITY

1. FAA Section 103

   This loan will be made under the authority of Section 103 of the Foreign Assistance Act of 1961, as amended.

The purpose of the Project which this loan will assist is to establish an improved flow of information to, and from, the farmer which will enable him to make better informed farming decisions, cause him to use improved farming techniques and enable him to convey his views and needs back to the "bureaucracy" for action. The project will contribute to the achievement of the broader goal of increasing the per capita income of people living in the rural areas of Thailand who are on the lower end of the income scale.

COUNTRY PERFORMANCE

2. Progress Towards Country Goals

   A. FAA Section 201 (b) (5), (7) & (8); Section 208

      Discuss the extent to which the country is

      (i) Making appropriate efforts to increase food production and improve means for food storage and distribution.

One of the highest RTG priorities for its Fourth Five Year Plan (1977-81) is to modernize Thai agriculture, promoting more intensive cultivation with higher productivity. The RTG goal is to expand food production and maintain its presently high level of agricultural exports, particularly of rice. The principal emphasis will be on high impact programs combining modern technology packages and support functions in a coordinated fashion for selected commodities and geographic areas. At the same time, the RTG will provide

greater farmer incentives by shifting internal terms of trade in the farmers' favor through such mechanism as price support, buffer stock storage, some regulation of the private marketing mechanism, and promotion of cooperatives.

The RTG has recently passed considerable legislation to support this strategy, including a Land Consolidation Law, Seeds Marketing Law, and an act creating a Marketing Organization for Farmers. In addition, the credit program of the Bank for Agriculture and Agricultural Cooperatives is being greatly expanded with greater emphasis on long-term loans and loans to cooperatives and farmers.

(ii) Creating a favorable climate for foreign and domestic private enterprise and investment

The RTG policy is to encourage the private sector and that sector's dynamism has been a major factor in Thailand's continuing good economic performance The Investment Promotion Act was revised in October 1972 to improve investment guarantees and benefits and to make promotional policies more flexible and selective. Standard investment incentives include guarantees against nationalization and competition by new State enterprises; authorization to own land, transfer funds abroad, and hire foreign experts; and various tax reductions are available under

reasonable controls. Further support for private investment will be provide by the RTG's Foreign Investment Advisory Council and National Export Council, recently established institutions. The latter, along with other matters, is charged with expediting the currently cumbersome procedures for issuing residence permits.

(iii) Increasing the public's role in the developmental process

Current RTG planning indicates that the Fourth Five Year Plan will assign high priority to social goals such as increasing rural income and services to the rural population, amelioration of urban life and social equity. Reflections of these goals is already showing up the government budgets.

(iv)

(a) Allocating available budgetary resources to development

(b) Diverting such resources for unnecessary military purposes (see Item 19) and intervention in affairs of other free and independent nations. (See also Item 19).

The share of the development expenditures in the total public expenditure was about 40% from 1970-1975. During the period of 1970-1973, expenditures on defense, police, and related administration represented 20-22% of the total public expenditures. In this period the U.S. actively encouraged RTG defense and police programs. With the phase-down of U.S. support for these areas comparable expenditures increased to 24.8% in 1974. For 1975 they are estimated at 20.9%.

(v) Making economic, social, and political reforms such as tax collection improvements and changes in land tenure arrangements, and making progress toward respect for the rule of law, freedome of expression and of the press, and recognizing the importance of individual freedome initiative, and private enterprise.	Thailand's tax structure is heavily weighted towards taxes on international trade and domestic transactions with relatively low income and property taxes. In line with recommendations made by the World Bank Survey Team of 1974, the RTG has recently established the policy of increasing revenues from direct taxation. In the rural sector, the RTG passed legislation on Land Consolidation and farmland rents in 1974 and a Land Reform Law in 1975, which authorize programs to improve the equity position of small farmers.
(vi) Willing to contribute funds to the project or program.	The RTG will finance at least 50% of the total project cost.
(vii) Otherwise responding to the vital economic, political, and social concerns of its people, and demonstrating a clear determination to take effective self-help measures.	The emphasis on legitimate social goals in the Fourth Five Year Plan are reliable indicators of the RTG outlook.
B. Are above factors taken into account in the furnishing of the subject assistance?	These factors are addressed in the Development Assistance Program for Thailand, 1976 - 1981, which provides the context and justification for subject assistance.

C. FAAct Sec. 116.

To what extent does the assistance directly benefit the needy people in the country?	The assistance proposed under this Project is designed to reach directly the rural farmers in 33 provinces, with emphasis on the poorest region of Thailand, the Northeast. The major benefit intended or likely to result will be an increase in the income of these farmers. See Part III-C-2-b of the Project Paper.

TREATMENT OF U.S. CITIZENS AND FIRMS

3. FAA Sec. 620 (c). If assistance is to government, is the government liable as debtor or unconditional guarantor on any debt to a U.S. citizen for goods or services furnished or ordered where (a) such citizen has exhausted available legal remedies and (b) debt is not denied or contested by such government?	No.
4. FAA Sec. 620 (e) (1). If assistance is to a government, has it (including government agencies or subdivisions) taken any action which has the effect of nationalizing, expropriating, or otherwise seizing ownership or control of property of U.S. citizens or entities not less than 50% beneficially owned by them without taking steps to discharge its obligations toward such citizens or entities?	No.

5. FAA Sec. 620(o); Fishermen's Protective Act Sec. 5. Has country seized, or imposed any penalty or sanction against, any U.S. fishing vessel on account of its fishing activities in international waters?	No.

RELATIONS WITH U.S. GOVERNMENT AND OTHER NATIONS

6. FAA Sec. 620 (a). Does recipient country furnish assistance to Cuba or fail to take appropriate steps to prevent ships or aircraft under its flag from carrying cargoes to or from Cuba?	No.
7. FAA Sec. 620 (b). If assistance is to a government, has the Secretary of State determined that it is not controlled by the international communist movement?	Yes.
8. FAA Sec. 620 (d). If assistance is for construction or operation of any productive enterprise which will compete in the United States with United States enterprise, is there an agreement by the recipient country to prevent export to the United States of more than 20% of the facilities annual production during the life of the loan?	This assistance is not for the construction or operation of a productive facility.
9. FAA Sec. 620 (f). Is recipient country a Communist country?	No.

10. FAA Sec. 620(i). Is recipient country in any way involved in (a) subversion of, or military aggression against, the United States or any country receiving U.S. assistance, or (b) the planning of such subversion or agression?	No.
11. FAA Sec. 620(j). Has the country permitted, or failed to take adequate measures to prevent, the damage or destruction, by mob action, of U.S. property?	No.
12. FAA Sec. 620(l). If the country has failed to institute the investment guaranty program for the specific risks of expropriation, inconvertibility or confiscation, has the A.I.D. administration within the past year considered denying assistance to such government for this reason?	No.
13. FAA Sec. 620(n). Does recipient country furnish goods to North Vietnam or permit ships or aircraft under its flag to carry cargoes to or from North Vietnam?	No.
14. FAA Sec. 620(g). Is the government of the recipient country in default on interest or principal of any A.I.D. loan to the country?	No.

15. FAA Sec. 620(t). Has the country severed diplomatic relations with the United States? If so, have they been resumed and have new bilateral assistance agreements been negotiated and entered into since such resumption?	No.
16. FAA Sec. 620(u). What is the payment status of the country's U.N. obligations? If the country is in arrears, were such arrearages taken into account by the A.I.D. Administrator in determining the current A.I.D. Operational Year Budget?	Thailand is not in arrears in payment of its U.N. obligations.
17. FAA Sec. 481. Has the government of recipient country failed to take adequate steps to prevent narcotics drugs and other controlled substances (as defined by the Comprehensive Drug Abuse Prevention and Control Act of 1970) produced or processed, in whole or in part, in such country, or transported through such country, from being sold illegally within the jurisdiction of such country to U.S. Government personnel or their dependents, or from entering the U.S. unlawfully?	The RTG is engaged in a two-fold program designed to reduce poppy cultivation and to interdict opium trafficking in Thailand. Increased enforcement activity by the Thai National Police and Department of Customs has resulted in the seizure of considerable quantities of illicit drugs and the arrest of a significant number of smugglers and processors. A parallel effort is being made to install an alternate economic system, including crop substitution, to that of opium cultivation in the North. The overall program is assisted by the U.S. and the U.N. The RTG efforts are being intensified at the present time.

18. FAA Sec. 659. If (a) military base is located in recipient country, and was constructed or is being maintained or operated with funds furnished by U.S., and (b) U.S. personnel carry out military operations from such base, has the President determined that the government of recipient country has authorized regular access to U.S. correspondents to such base?

No U.S. military operations are currently conducted or planned from military bases in Thailand.

MILITARY EXPENDITURES

19. FAA Sec. 620(s). What percentage of country budget is for military expenditures? How much of foreign exchange resources spent on military equipment? How much spent for the purchase of sophisticated weapons systems? (Consideration of these points is to be coordinated with the Bureau for Program and Policy Coordination, Regional Coordinators and Military Assistance Staff (PPC/RC).

For 1975, expenditures for defense, police and related administration are estimated at 20.9% of total public expenditures. (For earlier years see item 2A(iv)b.) For the period of 1971-1973, expenditures on military imports averaged 1% of the value of total merchandise imports.

CONDITIONS OF THE LOAN

General Soundness

20. FAA Sec. 201(d). Information and conclusion on reasonableness and legality (under laws of country and the United States) of lending and relending terms of the loan.

The proposed loan contains a concessionary rate of interest - 2% per annum during the grace period and 3% per annum thereafter in the remaining years of the repayment period. The interest rate is substantially lower than Thailand's maximum legal rate of interest.

21. FAA Sec. 201(b(2); Sec. 201(e). Information and conclusion on activity's economic and technical soundness. If loan is not made pursuant to a multilateral plan and the amount of the loan exceeds $100,000, has country submitted to A.I.D. an application for such funds together with assurances to indicate that funds will be used in an economically and technically sound manner?	This activity has been determined to be economically and technically sound. Refer to Parts III, D. and III, A., respectively, of the Project Paper for the detailed analysis. The RTG's formal application for an AID loan to finance this activity is in process.
22. FAA Sec. 201(b)(2). Information and conclusion on capacity of the country to repay the loan, including reasonableness of repayment prospects.	Thailand has the ability to repay the loan. Refer to Annex A of the Development Assistance Program - Thailand and to the IBRD report dated November, 1975 for a detailed analysis.
23. FAA Sec. 201(b)(1). Information and conclusion on availability of financing from other free-world sources on reasonable terms, including private sources within the United States.	Such assistance for this activity is not currently available from other free-world sources.
24. FAA Sec. 611(a)(1). Prior to signing of loan 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?	Such plans and estimates have been prepared and are included in the Project Paper.

25. FAA Sec. 611(a)(2). If further legislative action is required within recipient country, what is basis for reasonable expectation that such action will be completed in time to permit orderly accomplishment of purpose of loan?	No further legislation is required.
26. FAA Sec. 611(e). If loan is for Capital Assistance, and all U.S. assistance to project now exceeds $1 million, has Mission Director certified the country's capability effectively to maintain and utilize the project?	Loan is not for capital assistance.
LOAN'S RELATIONSHIP TO ACHIEVEMENT OF COUNTF" AND REGIONAL GOALS	
27. FAA Sec. 207; Sec. 113 Extent to which assistance reflects appropriate emphasis on: (a) encouraging development of democratic, economic, political, and social institutions; (b) self-help in meeting the country's food needs; (c) improving availability of trained manpower in the country; (d) programs designed to meet the country's health needs;	(a-b) This project is designed to provide farmers, through an Extension Service well-staffed with trained people, with an improved flow of information aimed at increasing agricultural productivity and rural incomes. (c) This project, from the A.I.D. standpoint, is a training project for all levels from the small farmer to the top government officials. (d) This program, while not specifically designed to meet the country's health needs, will result in improved nutrition by providing more food as well as increased income for farmers, making them more able to afford health care and nutritious foods.

(e) other important areas of economic, political, and social development, including industry, free labor unions, cooperatives, and voluntary Agencies; transportation and communications, planning and public administration urban development, and modernization of existing laws; and (f) integrating women into the recipient country's national economy.

(e) The project calls for expansion of farmers associations, cooperative, 4-H Clubs, etc., important means of building economic, political, and social development. See Part III of the Project Paper for additional information and detail.
(f) Addreassed in Part III C of the Project Paper.

28. FAA Sec. 209. Is project susceptible of execution as part of a regional project?

No.

29. FAA Sec. 201(b)(4). Information and conclusion on activity's relationship to, and consistency with, other development activities, and its contribution to realizable long-range objectives.

This activity will contribute to the broader goal of increasing the per capita income of people living in the rural areas of Thailand. Lower income farmers will be specifically assisted because they will have, some for the first time, an inflow of information geared to increase production as well as a mechanism to make their needs known. The establishment of a responsive extension system with a well-trained staff makes for a permanent infrastructure to spread technology beyond the limits of this project.

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30. FAA Sec. 201(b)(9). Information and conclusion on whether or not the activity to be financed will contribute to the achievement of self-sustaining growth.

While the Project will cover less than half the provinces in Thailand, it will reach approximately 60% of the rural population and leave a strong management and technological know-how to extend Project benefits to the rest of the country at a later date.

31. FAA Sec. 209. Information and conclusion whether assistance will encourage regional development programs.

This activity is not designed to encourage regional development programs, and will not do so.

32. FAA Sec. 111. Discuss the extent to which the loan will strengthen the participation of urban and rural poor in their country's development, and will assist in the development of cooperatives which will enable and encourage greater numbers of poor people to help themselves toward a better life.

The beneficial impact of the project on the rural poor will be assured in that the activities of the project are aimed at all farmers in the target areas. The staff increase of the DOAE at the Tambon level and the fact that Extension Agents will live in the Tambons make contact much easier. Much of the area being services by the project makes up the poorest parts of the Kingdom. Cooperatives or Farmers' Associations and the Marketing Organization for Farmers will be strengthened to meet the marketing needs brought about by increased production and the demand for agricultural inputs. Training programs will be for groups of farmers, frequently members of Farmers' Associations. Farmer Leaders will be selected at the Village level to be the main point of contact at the lowest administrative level.

33. FAA Sec. 201(f). If this is a project loan, describe how such project will promote the country's economic development taking into account the country's human and material resources requirements and relationship between ultimate objectives of the project and overall economic development.

This project will result in increased agricultural production which will further result in increased farmer income. Produce resulting from the project will be available for export and will bring additional foreign exchange to Thailand.

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34. FAA Sec. 281(a). Describe extent to which the loan will contribute to the objective of assuring maximum participation in the task of economic development on the part of the people of the country, through the encouragement of democratic private and local governmental institutions.

Maximum popular participation in economic development will be primarily assured by training of individual farmers as well as those who are member of Farmers' Associations or Cooperatives. Further, the low Extension Agent: Farmer ratio, accompanied by the Farmer Leader concept, is designed to involve the maximum number of farm families in the Project areas to assure maximum participation and result in economic development through increased production.

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

This project is directly concerned with raising the incomes and thereby increasing the welfare of Thailand's rural population. Success of the Project requires that Thai farmers institute improved farming techniques, as a result of training and instruction from a well-trained extension staff, to maximize productivity. To this end the Project will finance strong educational and training programs specifically designed to meet the needs of farmers and extension workers in any given Project area.

36. FAA Sec. 201(b)(3). In what ways does the activity give reasonable promise of contributing to the development of economic resources, or to the increase of productive capacities?

The training, geared to specific needs for extension workers (at all levels) and farmers, coupled with a system whereby farmers can make their needs known, will result in increased production by the rural poor and will be a major factor in economic development.

37. FAA Sec. 61(a). Information and conclusions whether loan 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.

(a) The loan should result in the increased export of agricultural commodities from Thailand.

(b) The Thai Government Agency responsible for the Project will encourage the interest of the private sector, including possible participation in the educational and training activities.

(c) Farmers' Associations and Cooperatives will be major suppliers of agricultural inputs. They will also be a source of credit through loans from the Bank for Agriculture and Agricultural Cooperatives. The Marketing Organization for Farmers as well as Farmers' Associations and Cooperatives will be needed for marketing of increased production resulting from the Project.

(d) Monopolistic practices are not a concern in this field of activity.

(e) This Project will result in increased agricultural productivity (yield/acre).

(f) Not applicable.

38. FAA Sec. 102(c). Extent to which this activity will effectively involve the poor in development, by

a) expanding their access to the economy through services and institutions at the local level,

b) increasing labor-intensive production, and

c) spreading productive investment and services out from major cities to small towns and rural areas.

This activity will effectively involve the poor in development in the following ways:

a) RTG agricultural services (Tambon Extension Agents), extended to the sub-district and village level where none now exist, will provide access to the economy for the poor.

b) Agents at these levels will promote more intensive single cropping and additional double cropping to more efficiently utilize existing rural labor.

c) Services at the sub-district and village level provided by the RTG are expected to induce production investments from other sources, e.g. private sector, commercial banks, etc. See Part III-A-2-g and Part III-C-1 and 2.

39. FAA Sec. 103(c). Extent to which this activity is designed to increase the productivity and income of the poor by

a) strengthening local institutions linked to regional and national levels;

b) providing savings and credit services to the poor;

This activity is designed to increase the productivity and income of the poor in the following ways:

a) Organizations of farmer groups such as Cooperatives and Farmers Associations will be encouraged, and these groups will be linked to province and national level Extension Committees for higher level action on their problems (See Parts III-A-2-h, III-A-4, III-C-3 and IV-B-1).

b) The activity is expected to increase the credit worthiness of poor farmers and provide a liaison mechanism between lending insitutions and farmers (See Part III-D-4).

c) stimulating small labor intensive enterprises in rural towns;	c) It is expected that increased development at the village level caused by this activity will foster development of additional labor intensive enterprises.
d) improving marketing facilities and systems;	d) It is expected that this activity will increase production and require expansion of market facilities. This expansion is planned (See Part III-A-5).
e) expanding local infrastructure such as farm to market roads;	e) Expansion of local infrastructure is not a direct result of this Project; however, complementing activities such as Northeast Rural Development Project (IBRD) and others in the Project area are specifically addressing this problem.
f) establishing more secure land tenture arrangements;	f) This activity does not directly address the land tenure issue; however, the RTG is initiating a major land reform program.
g) strengthening systems for assuring that small farmers have access to necessary services and supplies.	g) This activity will strengthen the Department of Agricultural Extension and expand its activities to the village level in 33 provinces, a major step toward assuring that poor farmers have success to necessary services and supplies.

40. FAA Sec. 619. If assistance is for newly independent country, is it furnished through multilateral organizations or plans to the maximum extent appropriate?

Thailand is not a newly independent country.

LOAN'S EFFECT ON U.S. AND A.I.D. PROGRAM

41. FAA Sec. 201(b)(6). Information and conclusion on possible effects of loan on U.S. economy, with special reference to areas of substantial labor surplus.

The loan will result in an increase in the volume and possibly the quality of agricultural commodities being exported. To the extent that these commodities compete successfully with U.S. produced food commodities in the world market, the loan could have a fractionally adverse effect on the U.S. economy. However, the Project's potential for helping to alleviate the increasing world food problem will more than offset possible adverse effects on U.S. exports.

42. FAA Sec. 202(a). Total amount of money under loan which is going directly to private enterprise, is going to intermediate credit institutions or other borrowers for use by private enterprise, is being used to finance imports from private sources, or is otherwise being used to finance procurements from private sources.

Approximately $490,000 of the Loan will be used to finance the cost of advisory services to be secured from non-governmental sources in the U.S., and an equivalent amount for the procurement of training materials, supplies, and equipment from private sources in Thailand. (See Sec. II,B,5)

43. FAA Sec. 601(b). Information and conclusion on how the loan 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).

This loan is not designed to encourage U.S. private trade or investment abroad.

44. FAA Sec. 601(d). If a capital project, are engineering and professional services of U.S. firms and their affiliates used to the maximum extent consistent with the national interest?	This Project is not a capital project.
45. FAA Sec. 602. Information and conclusion whether U.S. small business will participate equitably in the furnishing of goods and service financed by the loan.	U.S. small business will be invited to furnish, in the normal fashion for AID projects, any training supplies or services not available in Thailand.
46. FAA Sec. 620(h). Will the loan promote or assist the foreign aid projects or activities of the Communist-Bloc countries?	No.
47. FAA Sec. 621. If Technical Assistance is financed by the loan, information and conclusion whether such assistance will be furnished to the fullest extent practicable as goods and professional and other services from private enterprise on a contract basis. If the facilities of other Federal agencies will be utilized, information and conclusion on whether they are particularly suitable, are not competitive with private enterprise, and can be made available without undue interference with domestic programs.	It is planned that the professional assistance to be financed under the loan will, if not available in Thailand, be a contract with an U.S. individual, university, or firm. Such requirements will be small (not more than four person-years over life of Project).

LOAN'S COMPLIANCE WITH SPECIFIC REQUIREMENTS

48. FAA Sec. 110(a); Sec. 208(e). In what manner has or will the recipient country provide at least 25% of the costs of the program, project, or activity with respect to which the Loan is to be made?	The total costs of the National Extension Improvement Project, of which this Project is the training element, are estimated in the Project Paper at US$ 58.5 million. This loan will finance $ 3 million, IBRD $ 28 million and the RTG the remaining $ 27.5 million.
49. FAA Sec. 660. Will loan be used to finance police training or related program in recipient country?	No.
50. FAA Sec. 114. Will loan be used to pay for performance of abortions or to motivate or coerce persons to practice abortions?	No.
51. FAA Sec. 201(b). Is the country among the 20 countries in which development loan funds may be used to make loans in this fiscal year?	Yes.
52. FAA Sec. 201(d). Is interest rate of loan at least 2% per annum during grace period and at least 3% per annum thereafter?	Yes.
53. FAA Sec. 201(f). If this is a project loan, what provisions have been made for appropriate participation by the recipient country's private enterprise?	The RTG agency responsible for project implementation will encourage participation of private sector representatives in the educational/demonstration/training aspects of the Project. The private sector will also be involved in the providing of agricultural inputs and marketing and exporting of resulting increased production.

54. FAA Sec. 604(a). Will all commodity procurement financed under the loan be from the United States except as otherwise determined by the President?	Yes.
55. FAA Sec. 604(b). What provision is made to prevent financing commodity procurement in bulk at prices higher than adjusted U.S. market price?	No such commodities are to be procured.
56. FAA Sec.604(d). If the cooperating country discriminates gainst U.S. marine insurance companies, will loan agreement require that marine insurance be placed in the United States on commodities financed by the loan?	Yes.
57. FAA Sec. 604(e). If offshore procurement of agricultural commodity or product is to be financed, is there provision against such procurement when the domestic price of such commodity is less than parity?	No such commodities are to be procured.
58. FAA Sec. 604(f). If loan finances a commodity import program, will arrangements be made for supplier certification to A.I.D. and A.I.D. approval of commodity as eligible and suitable?	Loan does not finance a commodity import program.
59. FAA Sec. 608(a). Information on measures to be taken to utilize U.S. Government excess personal property in lieu of the procurement of new items.	Because of the nature of the Project it is not expected that U.S. excess property can be used. However, available excess property will be screened if such needs arise.

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60. FAA Sec. 611(b); App. Sec.101. If loan finances water or water-related land resource construction project or program, is there a benefit-cost computation made, insofar as practicable, in accordance with the procedures set forth in the Memorandum of the President dated May 15, 1962?	Loan does not finance such construction.
61. FAA Sec. 611(c). If contracts for construction are to be financed what provision will be made that they be let on a competitive basis to maximum extent practicable?	No contracts for construction will be financed under the A.I.D. loan.
62. FAA Sec. 612(b); Sec. 636(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 country's contribution, in cash and in kind, is estimated at the local currency equivalent of U.S.$ 27.5 million. There is no U.S.-owned local currency available for this Project.
63. App. Sec. 113. Will any of loan funds be used to acquire currency of recipient country from non-U.S. Treasury sources when excess currency of that country is on deposit in U.S. Treasury?	No. There is no excess Thai currency on deposit in the U.S. Treasury.
64. FAA Sec. 612(d). Does the United States own excess foreign currency and, if so, what arrangements have been made for its release?	The U.S. does not own excess local currency.

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65. FAA Sec. 620(g). What provision is there against use of subject assistance to compensate owners for expropriated or nationalized property?	The limitations on authorized uses of loan proceeds precludes such use.
66. FAA Sec. 620(k). If construction of productive enterprise, will aggregate value of assistance to be furnished by the United States exceed $100 million?	No.
67. FAA Sec. 636(i). Will any loan funds be used to finance purchase, long-term lease, or exchange of motor vehicle manufactured outside the United States or any guaranty of such transaction.	No.
68. FAA Sec. 666. Does the country object to the presence of any U.S. employee in the country for the purpose of carrying out programs of economic development assistance on the grounds of race, religion, national origin. or sex?	No.
69. FA App, 1977. Describe how the Committee on Appropriations of the Senate and House have been or will be notified concerning the activity, program, project, country, or other operation to be financed by the loan.	Project was included in FY 77 Congressional Presentation (p. 169).
70. App. Sec. 103. Will any loan funds be used to pay pensions, etc., for military personnel?	No.
71. App. Sec. 106. Will any loan funds be used to pay UN assessments?	No.

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72. App. Sec. 107. Will any of loan funds be used to carry out provisions of FAA Sec. 209(d)?	No.
73. App. Sec. 501. Will any loan funds be used for publicity or propaganda purposes within the United States not authorized by Congress?	No.
74. MMA Sec. 901(b)(1); FAA Sec. 640 C.	
(a) Compliance with requirement that at least 50 per centum of the gross tonnage of commodities (computed separately for dry bulk carriers, dry cargo liners, and tankers) financed with funds made available under this loan shall be transported on privately owned U.S. flag commercial vessels to the extent that such vessels are available at fair and reasonable rates.	Not applicable.
(b) Will grant be made to loan recipient to pay all or any portion of such differential as may exist between U.S. and foreign-flag vessel rates?	No.
75. App. Sec. 108. Will any part of this loan be used to aid or assist generally or in the reconstruction of North Vietnam?	No.

Table II-C-3

TRAINING PERSONNEL REQUIREMENTS

Headquarters	Grade	Appr Salary, annual (U.S.$)
Training Officer	C-4	$1,825
Ass't Training Off.	C-4	1,800
Extension SMS	C-4	1,800
Ass't Ext SMS	C-3	1,250
Graphic Illustrator	C-3	1,250
Accountant	C-2	920
Drivers (2)	C-2	900 (X 2)
Regional Office (One additional office during each of first four years)		
Training Officer	C-4	1,825
Audio-Visual Spec.	C-4	1,800
Illustrator	C-3	1,250
Electronic Spec.	C-3	1,250
VTR Operator	C-3	1,250
Cameraman	C-3	1,250
Typist	C-1	700
Drivers (2)	C-2	900 (X 2)
Provincial Office (4 in Yr I, +11 in Yr II, +10 in Yr III, +8 in Yr IV)		
Training Officer	C-4	1,825
Audio-Visual Spec.	C-4	1,800
Audio-Visual Ass't	C-3	1,250
Driver	C-1	700

The Regional and Provincial SMS's, thus armed with the latest recommendations on a crop, will digest this technology into proportions assimilable and meaningful to District SMS's and District Extension Officers. This training will involve considerably more field practice because the District staff will be in frequent contact with farmers to explain the technology. This training course will require about one-week's time, would be given in advance of the cropping season.

The material presented to the District Officers then becomes the basis for the next more simplified training for Tambon Agents, again requiring a large proportion of actual field practice. They will in turn pass the information on to the Model Farmers for eventual dissemination to the rest of the village.

(1) The Modular Approach

To provide each SMS with a ready reference of the material they are expected to know the composite course will be assembled into a training module. The SMS module will be rather lengthy and quite technical--more so than generally needed by District and Tambon Agents.

The material will be digested into simpler, less lengthy handouts or modules for the District Officers and presented to them in their one-week's training.

The printed material provided to the Tambon Agents is simplified and illustrated for direct usability in teaching farmers. Some of this material may serve as the basis for mass-produced leaflets to be distributed to farmers.

Inasmuch as the District Officers may have responsibilities for more than one crop during the first year, their handbooks would include several subjects but to a lesser technical depth.

The modular approach to the diffusion of technical information establishes a system for communications between researchers and farmers and also standardizes the recommendations which are current. Changed practices can be updated at any time by replacing the looseleaf inserts on the subject. Each insert would be dated and source identified. A sample set of the content for a rice production module is in Annex B-2-b.

(2) Training Manuals from Modules

A feature of all training conducted under this Project requires that each speaker provide a carefully prepared summary on the subject he delivers. The length and detail will vary with the topic but should be sufficiently complete to enable the "student" to reconstruct the lesson. This handout is to be given to each student. It should include copies of materials (charts, etc.) used during the delivery.

The purpose is three-fold:

(i) It insures consistency of material from one teaching session to another;

(ii) The student is freed from the task of continuous note-taking and thus can devote full concentration to the speaker and comprehension of the subject matter;

(iii) It provides the student with accurate information which he can use as the basis for his extended training of others.

All handouts should be uniform in size, dated, and punched for insertion in a loose-leaf binder. All work done by the students during training (demonstration plans, calendar or work, farm survey forms, etc.) should be in the same format. Thus, each person will build up his own reference handbook which can be changed or supplemented over time on a personal basis. Of particular value to the Tambon Agent will be the accumulation of demonstration plans which is a painstaking process but which will serve him on many occasions in his field work with model farmers and farm families.

In essence, this system provides the training modules illustrated in Annex B-2. For example:

A nationally recognized research or university specialist on corn may present a two-day discussion on the latest recommendations for the crop. This presentation may be made to Regional SMS, Provincial SMS, Regional Extension Officers, or Provincial Extension Officers. His handout material may include six different aspects of corn production, of perhaps four pages each for a total of 24 pages.

At the next echelon of training, the Regional SMS assisted by the Provincial SMS, presents the subject to Provincial Assistant Extension Officers, Provincial Home Economics Specialists, Provincial Rural Youth Specialists and District Agricultural Officers in an 8-hour version with a combined handout of perhaps 12 pages for that crop.

The Provincial SMS, assisted by the Provincial Extension Officers and the District Extension Officers, presents a "boiled down" version of the text to Tambon Agents, of about 8 pages. But this training session adapts the text to the farmers' situation and the presentation will be slower paced to reinforce the understanding of the subject matter by the Tambon Agent. Substantial time will be devoted to field operations, with the Tambon Agents actually performing these operations. Thus, the training time may extend to several days, although the volume of the technical material has been digested to pragmatic proportions. To this handout material, the Tambon Agent adds the demonstration plans he prepares in class plus his work plans for this crop. His "handbook" material may total only 20 pages, but he will have similar sets for two or more other crops.

Ideally, the Tambon will again digest this material into "small bites" for his work with model farmers. However, given the number of Tambons involved (about 500 in the first year) and the number of Model Farmers (about 5,000 the first year) it seems more reasonable to produce the farmer handout material at the Regional Center. Each "bite" will support the method demonstration given by a Tambon Agent at a single meeting. In general, a two-page or four-page leaflet listing salient points in simple steps and illustrated by line-drawings, should be uniform, hole-punched, and probably color-coded according to crop.

Table II-C-4 describes the modular concept.

Table II-C-5 is a schematic of the modular concept.

d. Extension Methodology and Communications

An understanding of the philosophy behind Agricultural Extension and the best way to impart learned knowledge down and up the command chain are essential. To teach all levels of extension personnel these qualities there will be training sessions on Extension Methodology and Communications.

Table II-C-4

NATIONAL EXTENSION IMPROVEMENT PROJECT

MODULAR CONCEPT

Training Participants	Module Design	Module Implementation
Regional and Provincial Trainers	6 week workshop with module development/management and instructional techniques exercises.	Develop modules and trainer competencies.
Regional and Provincial Officers	2-4 weeks training for crop(s) information, research, etc. and extension methodology.	Researchers and Trainers present information--Handbook development, approx. 40 pages per module.
District Officers	2-4 weeks training for crop(s) information, recommendations and practices and extension methods and activities.	Provincial Officers and Trainers and VTR present information--Handbook development, 30 pages per module.
Tambon Agents	2-4 weeks training for crop(s) practices, recommendations, etc. and extension methods and tasks.	District Officers and VTR present information--Handbook development, 20 pages per module.
Model Farmers and Farmers	Fortnightly meetings and fortnightly visits for crop recommendations and demonstration(s) activities.	Tambon Agents present information--leaflets developed, 1-4 pages per demonstration.

Note: Feedback from farmers through discussions and presence of researchers at demonstration plots will affect periodic in-service training sessions.

EXTENSION OUTREACH TRAINING MODULE CONCEPT

Levels of Training	Breakdown of Training Module	Comments
Regional Subject Matter Specialist	40-50 pages Detailed Technical Discussion of Crop	- Module developed/ expanded with heavy farmer input.
Provincial Subject Matter Specialist	20-25 pages Less detailed discussion of Regional Subject Matter Specialist Section	- Information in the module easily changed and new information inserted.
District Agent	15-20 pages Relevant technical points of Provincial SMS Section	- Complexity increases as you move up the levels of training.
Tambon Agent	10-15 pages Short Narrative; Illustrations; Demonstration Plot Instructions; Seed, Fertilizer, Insecticide, and etc. sources; Supervisory information and etc.	- Module used during training and trainees take their section with them to use on job.
Model Farmer	4-5 pages Simple Narratives and Heavily Illustrated.	- Leaflets, Posters, other training aids included in module and able to be copied for distribution.
Farmer	1-2 pages Heavily Illustrated, little/no narrative.	- Each level trains levels below.
		- Module developed by Thai technicians concerned with specific crop (Committee concept).

Table II-C-5

Effective use of meetings, demonstrations and field days will be coupled with an understanding of how farm people accept new ideas, the learning process, group dynamics, etc. Field staff will be required to practice the operations they are advocating for farmers. In the case of Agents, this phase will be about 50% of the total course time.

See Annex B-2-a for a sample Extension Methods and Communications module.

2. The Trainees

There are four categories of personnel targeted for the training:

(i) Administrative and Supporting Personnel,

(ii) Training and Training Aids Specialists,

(iii) Subject Matter Specialists, and

(iv) Extension Agents who are in direct and frequent contact with farmers.

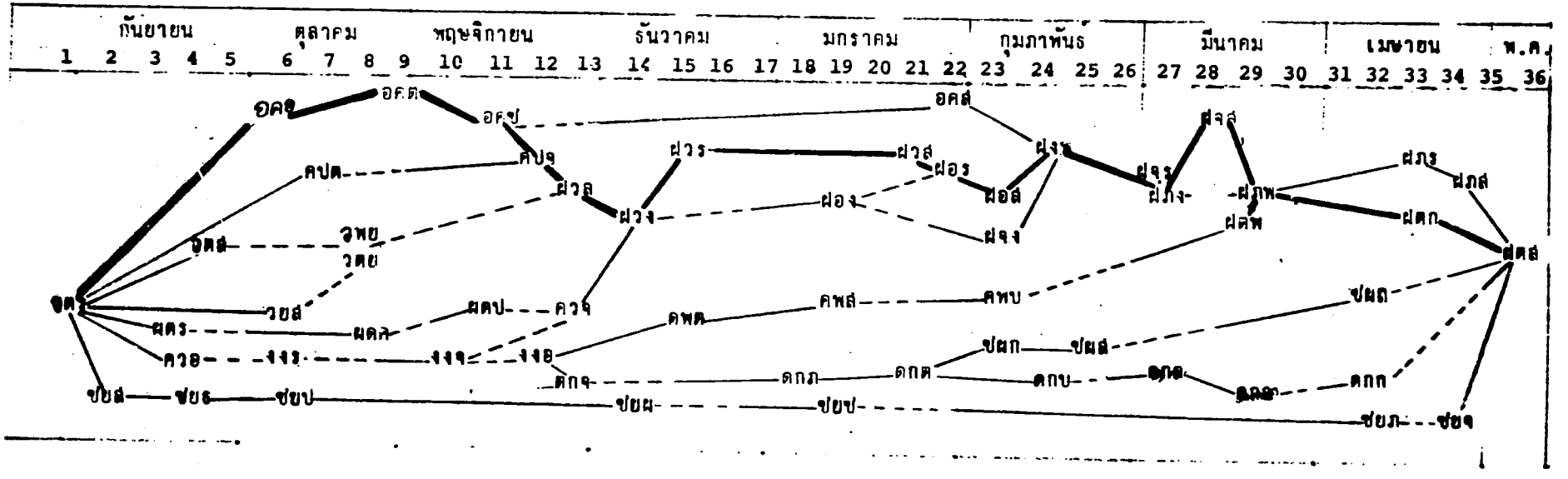
The depth of training in each field, required by each category of personnel is indicated in the following Table as being extensive (ext), moderate (mod) or low:

Type of Personnel	Proj. Opn. & Mgmt.	Training Competence	Agri. Tech.	Ext.Meth. & Comm.
Administrative & Support	mod	-	low	low
Extension Trng. Specialists	mod	ext	low	ext
Subject Matter Specialists	low	low	ext	low
Extension Agents	low	low	mod	ext

The magnitude of the numbers of people to be trained, the relationships of the personnel involved and the flow of information to and from the farm family is illustrated in Table II-C-6.

Table IV-C-2

แผนผังกำหนดเวลาในการดำเนินงาน โครงการปรับปรุงระบบการส่งเสริมการเกษตรแห่งชาติ ปีที่หนึ่ง



คำอธิบายตัวหนังสือระหัส

ซ = การซื้อ

ว = วัสดุสำหรับการสาธิต

ย = ยานพาหนะ

ก = กำหนดความต้องการ

ส = การสั่งซื้อ

ธ = ธนาคารอนุมัติ

ป = ประมูลราคา

ผ = เสนอชื่อผู้ประมูลราคา

ช = เซ็นสัญญา

ถ = มาถึงแล้ว*

*(ต้องการกฎใหม่เกี่ยวกับรถจักรยานยนต์)

จ = แจกจ่าย

ง = แหล่งเงิน

ง = งบประมาณไทย

ร = รัฐสภาอนุมัติ

จ = จ่ายเงิน

ด = โดนเงินไปที่จังหวัด

ดก = ดำเนินงานเกี่ยวกับเกษตรกร

จ = การเสนอระดับจังหวัด

ภ = การเสนอระดับอำเภอ (ถึงกำนัน)

ต = ประชุมครั้งแรกระดับตำบล

บ = ประชุมครั้งแรกระดับหมู่บ้าน

ค = เลือกคณะกรรมการกลุ่มเกษตรกร

อ = อนุมัติคณะกรรมการกลุ่มเกษตรกร

ก = เลือกเกษตรกรตัวอย่าง

ผด = แผนกดำเนินงาน (กรมส่งเสริม)

ร = ร่าง

ต = โครงร่างและอนุมัติพนักงาน

ป = ปฏิบัติหน้าที่

ว = การวางแผน

(โครงการปีที่หนึ่ง)

พ = พืชที่สำคัญ

ต = ตารางเวลา

ร = ร่างแผนงาน

ส = สำนักงานเจ้าของเรื่องอนุมัติ

ย = ให้ความยินยอม**

**(ความยินยอมของผู้ว่าฯ เจ้าหน้าที่เกษตรจังหวัด ฯลฯ

อค = เอกสารของโครงการทำโดย AID

(เอกสารของโครงการและเงินกู้)

อ = องค์การเซ็น

ต = ตรวจสอบโดย AID

ช = เซ็นเอกสารโครงการ (PP)

ส = อนุมัติสัญญากู้เงิน

ค = การคัดเลือกเจ้าหน้าที่

ป = ที่ปรึกษา (ส.ร.อ.)

ว = วิทยากรฝึกอบรมและเจ้าหน้าที่ทา

พ = พนักงานส่งเสริม

อ = อนุมัติจาก ก.พ. และคณะรัฐมนต

ต = ประกาศตำแหน่งว่าง

ส = สอบคัดเลือก

ต = แต่งตั้ง

บ = รับบรรจุ

จ = เข้าประจำการ

ฝ = การฝึกอบรม

ว = วิทยากรฝึกอบรม

อ = เจ้าหน้าที่อาวุโส

จ = เจ้าหน้าที่ระดับภาคและจังหวัด

ภ = เจ้าหน้าที่ระดับอำเภอ

ต = พนักงานส่งเสริมประจำตำบล

ล = จัดหลักสูตร

จ = การเตรียมงานเสร็จบริบูรณ์

พ = เริ่มสอนภาควิชาการทางพืช

ร = เริ่มสอนวิธีการส่งเสริม

ก = อบรมกลุ่มแรกสิ้นสุด

ส = อบรมกลุ่มสุดท้ายสิ้นสุด

* ต้องการกฎใหม่เกี่ยวกับรถจักรยานยนต์

** ความยินยอมของผู้ว่าฯ เจ้าหน้าที่เกษตรจังหวัด ฯลฯ

Disbursements, by FY of Project implementation are estimated to be:

Year I,	FY 1977	$396,000
Year II,	FY 1978	751,000
Year III,	FY 1979	882,000
Year IV,	FY 1980	971,000
		$3,000,000

6. Proposed Implementation Schedule--Check List for Year I

Through early implementation the RTG is trying to expedite this schedule to have Tambon Agents in the field by the end of May, 1977. The schedule does, however, give an understanding of the events that must occur.

Pre-Signing

- With signing of IBRD papers, the National Extension Committee convenes to discuss and endorse overall program.
- RTG/USOM recruits 2 Extension Training Specialists for first Train-the-Trainers Workshop.
- Meeting of U.S. Technical Advisor, National Training Officer, Regional and Provincial Training Officers, to plan and conduct Train-the-Trainers Workshop (6 weeks).
- DOAE orders commodities for Year I (FY 1977) utilizing existing IBRD Northeast Development Loan.
- DOAE begins recruiting for U.S. Extension Training Advisor.

Month 1 (January, 1977)

- Project and loan approved and funded.
- DOAE sets up system and schedule for meeting with Farmers' Associations, in Tambons of first four Provinces.

- DOAE fills positions at Regional level.
- DOAE fills positions at Provincial level.
- Formalities completed for U.S. Extension Training Advisor.
- Regional and Provincial Training Officers complete Train-the-Trainers Workshops.

Month 2 (February, 1977)

- DOAE fills positions at District and Tambon levels.
- Provincial Technical Committees provide guidelines for Year I programs.
- Arrange for DSCS to train Regional and Provincial audio-visual staff in VTR production and use. Training to begin during Month 3 for nine people.
- Provincial and District Extension Officers receive two days briefing on dealing with Farmers' Associations and village groups; selection of farm leaders, plus overall Project Operations and Management.
- Leadership Training Conference (Project objectives, organization, responsibilities, etc.) (3 days).

Month 3 (March, 1977)

- U.S. Training Advisor arrives.
- Meetings at Tambons to determine interest of farmers and to select leaders.
- Training by DSCS for nine Regional and Provincial audio-visual specialists in VTR. Total of 3 to 4 weeks.
- Crop I training for Regional and Provincial Subject Matter Specialists (5 days).
- Commodities arrive.

- DSCS assistance in setting up VTR equipment at Regional Training Center, and Mobile Unit modification.

Month 4 (April, 1977)

- Meetings with Tambon Farmers' Associations complete. Model Farmers and land for field trials selected.

- Crop II training for Regional and Provincial Subject Matter Specialists (5 days).

- Extension and Communications Training for Regional and Provincial Officers. (6 days).

- VTR production of course material begins.

Month 5 (May, 1977)

- Crop I Training for District Officers of two Provinces (1 week).

- Crop I Training for District Officers of other two Provinces (1 week).

- Crop II Training for District Officers of two Provinces (1 week).

- Crop II Training for District Officers of other two Provinces (1 week).

Month 6 (June, 1977)

- Extension and Communications Training for District Officers of two Provinces (1½ weeks).

- Extension and Communications Training for District Officers of other two Provinces (1½ weeks).

- Project Operations and Management plus Crop I Training for Tambon Agents (1 week). Each Province to run two classes simultaneously.

- Second shift of Operations and Management plus Crop I or Crop II for Tambon Agents (1 week).

Month 7 (July, 1977)

- Complete crop training for Tambon Agents (1 week).
- Extension and Communications Training for Tambon Agents (four 8-day sessions per Province, to include final briefing of Tambon Agents on work plans).
- Tambon Agents lay out demonstration plots.
- Demonstration plot signs produced by Province and distributed.
- Meeting of National Steering Committee for progress report.

Month 8 (August, 1977)

- Extension training for Tambon Agents complete.
- Tambon Agents meet with villagers and begin field work.

Month 9 (September, 1977)

- One day refresher course for Tambon Agents every two weeks as applicable.
- VTR tapes on crop technology being produced.
- Provincial weekly radio programs produced by Provincial audio-visual staff.
- Production of leaflets, reference manuals, posters, initiated by Province, Region and/or Headquarters.
- Recruit U.S. Training Consultant for Year II program (to arrive Month 14).

Month 10 (October, 1977)

- Determinations of training shortcomings at all levels.
- Planning of field days for District Officers.

- Provincial meetings of District and Provincial Extension staff to discuss problems and progress. (1 day meeting).

- Headquarters order commodities of Year II.

Month 11 (November, 1977)

- Plan annual crops conferences for Research and Extension specialists, to be held Month 13.

- Plan annual Provincial Technical Committee meetings to be held Month 12.

- DOAE fills positions at Regional and Provincial levels for Year II.

Month 12 (December, 1977)

- Annual meeting of Provincial Technical Committees of Year I.

- Year I Provincial Extension and Training Officers to block out in-service training for second year. To be approved by Regional and Headquarters.

- DOAE fills Year II District and Tambon positions.

- New Regional and Provincial Training Officers meet to plan Train-the-Trainers Workshop of 6 weeks.

Month 13 (January, 1978)

- National Steering Committee meets for progress reports, and to plan new year's program for two regions.

- Annual crop conferences for Research and Extension (3 days/crop).

- New Provincial Technical Committees meet.

- Train-the-Trainers Workshops being held (6 weeks total).

Month 14 (February, 1978)

- Train-the-Trainers Workshops completed.