Agriculture. 1965/1971

[s.l.]: [s.n.], 1965/1971

AIRGRAM

DEPARTMENT OF STATE

DAYTON M.

AGR 4 - 1

UNCLASSIFIED

CLASSIFICATION

For each address check one: ACTION | INFO

TO: AID/W TOAID A- 1173 X

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INFO.

DATE SENT April 9, 1965

FROM: USAID/VIENTIANE

SUBJECT: Progress Report - Rice Seed Multiplication Program

REFERENCE:

USAID/Vientiane submits this report as a means of keeping AID/W cognizant of mission activities for increasing rice production.

SITUATION

Laos has the lowest rice yield of all countries in Far East Asia, with approximately 800 kilograms per hectare. This is largely due to poor cultural practices and the use of poor varieties which, over the years, have been consciously or unconsciously selected by farmers for existing poor conditions. According to recent import statistics there is now a deficit of approximately 50,000 tons of milled rice (or 80,000 tons of paddy, using present milling practices). Because of the many political, economic and social factors involved, Laos faces a permanent situation in which there will be a serious shortage of rice for some time. These shortages must be met either by imports or by increasing rice production. A summary of the present rice situation in Laos follows.

OTHER ACTION

Rice Summary - Laos

March, 1965

Estimates of Consumption Needs

Based on 1.8 million people in RLG controlled area of Laos with 300 grams (children) and 600 grams (adults) consumption per day, annual needs are estimated at 311,400 tons

+ alcohol mfg. 1,000

312,400 tons

ATTACHMENTS: Appendix A
Appendix B

PAGE 1 OF 8 PAGES

FOR	OFFICE	PHONE NO.	DATE	APPROVED BY
JEHawes:lmm	AGR	187	3/25/1965	W. C. Tucker, Chief, AGR

AID AND OTHER CLEARANCES
WEThrasher, OMA
JHAndrus, ADTS
OP

DIST: OD, DD, ADTS, ADRD, OP, OMA, EMB/POL, AGR-4, EO/C-3, AMB/DCM, POL-2, USIS/D, CSR INSPEC - 1

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AID-590 (4-62) (Do not type below this line)

Estimates of Production

1. Area of land for rice culture is estimated at:
700,000 hectares under paddy culture
200,000 hectares under rai culture

2. Area under RLG control is perhaps:
85% of 700,000 hectares, or 595,000 ha. paddy
50% of 200,000 hectares, or 100,000 ha. rai
695,000 ha. of land

3. Area abandoned in recent years for various reasons, such as military activity, poor fertility, lack of manpower, etc., is estimated at:
20% of 595,000 ha. or 119,000 ha. paddy not planted (with 476,000 ha. planted)
50% of 100,000 ha. or 50,000 ha. rai not planted (with 50,000 ha. planted)

4. Estimated yields are approximately:

.9 ton per hectare for paddy culture or	428,400 tons
.6 ton per hectare for rai	30,000
or total	458,400 tons
less seed needs annually	15,780 tons
Estimated Total Production	442,620 tons

5. Since the loss from present milling practices is approximately 40%, then 60% of total paddy available (442,620 tons) is represented by 265,572 tons of milled rice.

Difference between needs and production is approximately 47,000 tons or approximately the equivalent of imports as recorded by customs plus a small quantity that may enter Laos illegally.

In view of the magnitude of the problem and the ever-increasing costs to the U.S. for imported rice, the mission is expending considerable effort to increase rice production to effect eventual savings.

SOLUTION TO PROBLEM

The means of increasing rice production logically follows two approaches, viz., (1) bringing additional land under rice cultivation, and (2) increasing the yield per hectare of the land already under cultivation. The latter course is the most logical alternative under the present situation in Laos.

Unfortunately, the improved techniques that have been found in other countries to be the most effective means for increasing per hectare yields, such as improved seed, adequate fertilizer use, the development of irrigation facilities, protection against pests and diseases, the use of farm machinery, and other improved cultural practices, have not been adopted widely by the Lao farmers. A broad program involving efforts concerning all of these factors in a balanced, coordinated approach is considered by this mission to be the ideal means of solving rice production problems.

Improvements in milling practices, the creation of markets to provide incentives to farmers to increase production, and improvements in transportation and distribution systems are also considered of vital importance to solve rice deficits. Plans are currently being developed to cope with these problems.

The mission has considered that the use of improved varieties is the first step to be made in increasing production because such a step is technically of basic importance and is the easiest and cheapest method to make rapid improvements. Other methods usually follow this initial step.

Comparative variety trials and small-scale multiplication of improved rice seed during the past six years at the RLG Salakham Rice Experiment Station have produced adequate quantities of seed of four improved varieties. With this work as a base, the mission in cooperation with the RLG Direction of Agriculture has initiated a program of rapid multiplication of improved varieties of rice seed to be eventually distributed to farmers in an estimated 100,000 hectares of paddy land. Yields from the use of these varieties are expected to be approximately 1,600 kilograms per hectare under relatively favorable conditions, compared to the national average of 800 kilograms. The wide-scale use of the improved varieties may be able to provide sufficient increases in yield to meet the present deficit of 80,000 tons of unmilled rice (paddy).

WORK PLAN

An Operation Agreement was signed in April, 1964, which specified details of the Rice Seed Multiplication Program. The principal feature of the activity was to make contract arrangements with farmers to multiply seed which would then be purchased, warehoused and redistributed the following year. Appendices A (Operation Agreement) and B (Contract Between RLG and Farmer) outline details of the plan of work and specify responsibilities of all parties.

IMPLEMENTATION - 1964 SEASON

March. All planning was completed, and one week of training in rice technology and instruction in conducting the rice multiplication program was given to the 24 RLG technicians responsible for conducting the field work. Two RLG coordinators were assigned to head the program with two USAID technicians to assist.

April. Field work commenced with the rice team and provincial agricultural chiefs visiting farmers to explain the program, by selecting seedbeds and multiplication sites with farmers and by signing contracts with farmers.

May. Eight metric tons of four varieties of seed available from the Salakham Rice Experiment Station were distributed to Luang Prabang, Seyaboury, Vientiane, Khammouene (Savannakhet), and Sedone (Pakse) Provinces. The provincial chiefs and the rice teams redistributed the seed to farmers according to contract arrangements. IVS personnel in Luang Prabang and Savannakhet assisted in the field work.

June. After the first heavy rains soil preparation for seedbeds and sowing was commenced. Small quantities of fertilizers were given to farmers for seedbed use.

July. Farmers were engaged in plowing and harrowing of paddy land and transplanting the seedlings from seedbeds. Rice team members continued working with contract farmers to prevent mix-ups in the farmers' own varieties and RSMP varieties grown under contract.

August--September. Transplanting operations were completed by farmers, and such cultural practices as insect control, water management and weed control were employed as necessary and according to capabilities by farmers during the vegetative growth period. Roguing of undesirable plant types was commenced under supervision of rice team members to guarantee purity of seed. Warehouse facilities were constructed in Vientiane and Sayaboury. Existing facilities in Luang Prabang, Savannakhet and Pakse were prepared for rice storage use after some necessary renovation performed by the Public Works Division of USAID.

October. Roguing operations were completed as the crop attained maturity.

November. Harvest was begun by contract farmers. Rice bags, string, and bag sewing needles were distributed to contract farmers. Rice seed was threshed, winnowed, treated with insecticides, bagged, transported to warehouses, weighed, recorded, and stored for use next season. Farmers were paid for their rice, according to contract arrangements, by USAID cashiers.

December--January. Rice continued to be harvested, collected and warehoused, according to arrangements.

VARIETY TRIALS

The philosophy of the Rice Seed Multiplication Program has been to multiply as rapidly as possible, under contract arrangement with farmers, the four best varieties that have consistently responded favorably to conditions in Vientiane. Further, since growing conditions and soils may be somewhat similar in the Mekong valley where most rice is grown, we have assumed a calculated risk that most of these four varieties would also respond better than existing varieties in most areas of Laos. It was decided that in areas where any of the varieties did not respond well, they could in the future be eliminated from the area. To determine which varieties were best suited to given areas, at least one, and in some cases two, trials were initiated in all areas to compare their yield capabilities, growth characteristics and acceptability by the farmers. While it is realised that these procedures of operation are somewhat rapid, and lack the full and adequate testing that are normally required before proceeding, the Mission also held the opinion that the political and economic situation in Laos was such that it was necessary to take rapid and bold steps, utilising the best information and plant material available, to begin work toward increasing rice production. Further work, as time permits, would be more thorough and would be continuing in relation to rice variety introduction, testing and observation in all areas of Laos.

RESULTS

Since this effort in rapid multiplication of improved seed has been considered of highest priority importance by the RLG Direction of Agriculture in their work plans, personnel and facilities have been provided to the limit of capabilities. The magnitude of the implemented program was somewhat less than the planned program. Results of the first year's work, however, are considered to be very satisfactory considering all of the handicaps of logistics, limited trained personnel and attitudinal problems of the farmers.

Results of the program are indicated in Table I. which shows quantities of all varieties of seed purchased from 338 contract farmers from 33 Bans and Muongs (villages and surrounding areas) throughout all five provinces involved. Seed now in stock (more than 140 tons) in warehouses will be distributed to farmers prior to the 1965 planting season. Plans are currently being developed for distributing seed prior to May 1, 1965, to cluster villages, resettlement villages, refugee hamlets, in areas with irrigation facilities and in certain rice deficit areas such as Vientiane Province.

Table I. - Quantities of Seed (in kilograms) Purchased from Five Provinces - 1964 Season

Province	Variety			
	Dolay	Donangmuang	Kao Lay	Chao Phokha
Luang Prabang	6,240	7,290	5,147	14,940
Sayaboury	947	1,645	3,547	4,583
Vientiane	5,252	8,792	6,876	8,573
Savannakhet	557	4,457	3,891	10,813
Pakse	7,184	9,810	10,135	23,927
	20,180	31,994	29,596	62,836

During the 1964 season nine variety trials were conducted in five provinces to determine the response of the four varieties in tested areas. Since soil and climatic conditions have varied somewhat, yields have also varied from province to province. Table II. indicates comparative yield data of the four varieties and the best local variety available in each area.

Table II. - Yield Data of Comparative Variety Trials Showing Yields Per Hectare in Kilograms

Provinces	Varieties				
	Dolay	Donsaengmuang	Keo Lay	Chao Phalha	Local Variety
Luang Prabang					
Ban Pakvet *	1,730	1,720	1,690	--	1,916
Ban Nalongteng **	3,500	2,470	3,350	--	2,470
Sayaboury					
Muong Phieng	2,571	3,760	3,330	--	3,033
Ban Sinsong Khoan	2,950	3,910	2,892	--	3,527
Vientiane					
Nongteng	1,357	1,988	1,384	--	1,435
Savannakhet					
Sonsoat **	3,380	2,050	3,900	4,030	3,220
Ban Phone *	1,580	1,790	1,740	1,790	1,740
Pakse					
Dong Kalong *	1,490	1,340	1,540	2,090	1,320
Saphuy **	2,360	2,840	3,260	3,780	3,470

* indicates relatively infertile soil
** indicates relatively fertile soil

The data shows considerable variation in yield between varieties from province to province and even within provinces. It can be observed that the four varieties in all cases did not outyield the best local varieties in a given area. In the case of Luang Prabang Province this may have been due to the fact that all four varieties being multiplied suffered from an attack of Narrow Brown Leaf Spot (Cercospora oryzae). Under low fertility conditions the best local variety outyielded three of the rice varieties being multiplied. In the southern provinces (Savannakhet and Pakse) the four varieties, when handled in the comparative variety trials as midseason varieties (as in Vientiane and northern provinces), were not as productive as local varieties grown under similar conditions. It was observed that, when the four varieties were planted and treated as late varieties in farmers' fields, they outyielded by a considerable margin the local varieties handled similarly.

It can be observed from Table II, that all varieties in the trials yielded much more than the national average of 800 kilograms per hectare, with some attaining three to four tons per hectare under conditions of good soil fertility.

In none of the trials were fertilizers applied. The trials indicate further that the varieties responded well under conditions of good soil fertility and that they would probably respond favorably to low application rates of fertilizers. Thus, these rice varieties being multiplied could be used to begin a program of wide-scale utilization of chemical fertilizers, with minimum dangers of lodging.

IMPLEMENTATION PROBLEMS

In this new mission activity we have experienced the normal amount of logistic problems in the first year of operations. Some of them are:

1. The slow arrival of some commodities necessitated emergency local procurement of rice bags, for example, in order to conduct the program.

2. The reluctance on the part of the farmers to plant more than a "token" area under contract for seed reduced the effectiveness of the program somewhat. The average area planted was only 0.43 hectares per farmer.

3. Many farmers planted their contract rice on their poorest land and in soils that were not supplied with sufficient water. This resulted in some poor yield responses.

4. The farmers' distrust in the contract and lack of faith in being paid for the rice seed upon delivery resulted in many farmers' holding back as much as 50 per cent of their seed to keep for their own use or to sell to their neighbors.

5. Also, delays in providing transportation and the inability to make cash payments on the spot to farmers reduced the quantity of seed recovered.

6. The necessity this year of providing only provisional seed storage facilities in Luang Prabang, Savannakhet and Pakse caused some difficulties. New rice seed storage facilities will be built prior to harvest of the 1965 seed crop.

PROGRAM EVALUATION

1. The mission is of the opinion that the Rice Seed Multiplication Program has been a highly successful activity and is a good beginning toward solving the rice deficit problem in Laos.

2. The personnel of the RLG Direction of Agriculture have shown that they are capable of conducting a successful program. Most of the rice team members worked long, hard hours, seven days a week, during the peak work-load period.

3. The farmers' prior attitude of distrust toward contract arrangements with the RLG Agriculture Service for growing rice seed has changed now that they have received full payment for the rice seed according to contract arrangements. Those farmers who

participated in the program the first year now want to continue next year. Many of their neighbors also wish to become rice seed contract farmers.

4. The rice seed grown under contract has served as a demonstration to the rice growers. They have seen the value of the new varieties and have acquired seed informally from the rice seed contract farmers in many cases for their use next year.

5. The program has served as an in-service training experience that has been valuable to provide knowledge and skill to the extension agents and technicians working with the farmers. Such experience will enable smoother operations and better cooperation with the farmers in the future.

6. The program, while recovering only an estimated 50 per cent of the rice seed grown for distribution in the 1965 planting season, has succeeded in making a beginning toward distributing the new varieties widely in many areas of Laos for the first time.

7. Valuable information has been gained concerning the use of the varieties in specific areas of Laos. This is a basis for making sound recommendations to the farmers.

FUTURE ACTION

1. The program will continue during the 1965 planting season with plans for expanding production of seed by three to four times over the first year's operations.

2. New R/D personnel will be recruited and trained to carry out an expanded program in 1965.

3. Plans are being made to begin low rates of application of chemical fertilizers on farmers' fields of poor fertility levels where these varieties will be grown.

4. Experimental work in fertilizer utilization with the new varieties will be conducted in five provinces of Laos during the 1965 planting season.

5. Other plans are being developed to provide necessary markets and motivational prices of rice to encourage increased production.

6. Immediate action before the beginning of the 1965 rainy season will be the distribution of 144,626 kilograms of improved seed of four varieties to approximately 4500 farmers in six provinces of Laos for planting 4500 hectares of land.

The mission will continue to advise AID/W of future developments, as they occur, in efforts toward increasing rice production in Laos.

SULLIVAN

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APPENDIX A.

OPERATION AGREEMENT FOR RICE SEED

MULTIPLICATION PROGRAM

In accordance with the current agreements of the Crop and Soil subactivity, the Extension subactivity of the Agriculture Development Project and this Operational Agreement, the US Agricultural Service and USAID-Vientiane agree to cooperate in an expanded national program for the rapid production of improved varieties of rice seed. The use of this seed by farmers is expected to significantly increase rice production in Laos.

GOALS.

The immediate goals of this program for the rice growing season of 1964 are to increase the 12 tons of improved seed now on hand as rapidly as possible for general distribution to farmers in 1965.

Medium range goals are to produce 3000 tons of selected seed for distribution to 100,000 hectares. Expected increases in production on 100,000 hectares from the use of improved varieties will be an estimated 800 kg. per hectare or 80,000 tons of paddy, which is roughly equivalent to present imports of rice estimated at 50,000 tons of milled rice.

The ultimate goal of self-sufficiency will be reached in 1967-1969 after three to five complete cycles of the program, depending upon the degree of successful implementation.

PLAN OF ACTION.

1. In May 1964 the Agriculture Service will arrange for distribution of 12 tons of seed of four varieties to selected farmers at the rate of 30 kg per hectare for planting 400 hectares near five major cities and cluster areas. Seeds will be distributed under strict control when seed beds are ready for planting. Two additional tons of seed will be distributed in some areas where rigid control is impractical.

2. The yield from the strictly controlled production will be 640 to 1200 tons of pure seed in December, 1964. This seed will be purchased from farmers according to a contract (see attachment).

CONTRIBUTION OF USAID.

USAID will contribute the services of 3 technicians on a part time basis to advise and assist in implementing the activity. Seven IVS technicians will also be assigned to the program to work part time with the Agriculture Chiefs of the provinces and their

assistants in provincial areas and in cluster areas in a manner to be determined by responsible parties. Transportation for these technicians will be contributed by USAID (7 vehicles are required). USAID will provide logistic support in the form of air transportation for USAID and RLG personnel and materials as required. Necessary commodities, including POL, will be provided for implementing the activity. Trucking costs for the transport of materials, construction costs of simple storage facilities and purchase of a maximum of 1200 tons of seed will be financed through a USAID Trust Fund with the kip being transferred from the Counterpart Special Account. Disbursements will be made through area USAID cashiers within established fund and procurement limitations. The USAID Contracting Officers will be charged with procurement of supplies and services in excess of disbursement limitations.

ADDITIONAL ESTIMATED COSTS.

Aside from the contributions that will have been made through existing or past agreements as mentioned above, the following materials, services, construction and purchase costs will be provided by USAID in the first year of operation of this expanded rice program.

	Kip	Dollars
Purchase of up to 1200 tons seed at 25,000 kip per ton.	30,000,000	
Construction of 8 seed storage facilities	2,592,000	
Trucking services 200k/ton/km	6,000,000	
Packing and distribution of seed (Service and labor)	119,000	
Printing and supplies	101,000	
Sacking costs		7,000
Other commodities (tools, equipment)		2,400
Other costs		2,000
	38,812,000	11,400

CONTRACT.

The attached contract agreement to be signed by the individual farmers and the RLG Agricultural Service, including all details, is considered an integral part of this operational agreement in the conduct of this Rice Seed Multiplication Program.

FURTHER AGREEMENTS.

The mode of conducting and financing this cooperative RLG and USAID activity in future years will be determined on a yearly basis according to agreements to be reached in future years. This present agreement is limited to the calendar years of 1964 and 1965. It is understood that this Operating Agreement will be in full effect upon signature of a Project Agreement by RLG and USAID officials.

We, the undersigned, hereby agree to the above conditions of this Operation Agreement on this _____ day of April, 1964 in Vientiane, Laos.

SIGNED:

Charles A. Mann
Director of USAID/Laos

Oukeo Souvannavong
Commissioner for the Plan, RLG

William C. Tucker
Chief, Agriculture Branch, USAID

Thao Somsavath Vongkoth
Director, Agriculture Service, RLG

APPENDIX B.

CONTRACT

Between the Royal Government of Laos, represented by the Service of Agriculture, the party of the first part

And _____, the party of the second part, agree to the defined conditions that follow:

Chapter I - The Party of the First Part

Article 1. The Party of the first part agrees to buy all of the rice harvest produced on the selected cultivated land of the party of the second part, according to the directives of the party of the first part, for the purpose of multiplication of seed of selected varieties.

Article 2. The party of the first part agrees to furnish the seed, the value of which will be deducted from the selling price of the harvested seed.

Article 3. The party of the first part agrees to place at the disposal of the party of the second part for his use such tools, sprayers and other necessary equipment as are needed. These materials remain the property of the party of the first part, but no rental will be charged for their use.

Article 4. The party of the first part agrees to justly reimburse the party of the second part if his yield is reduced by use of the selected seed providing the party of the second part can prove that reduced yields are due to poor seed. No losses will be paid for such natural causes as floods, drought, disease or damage by insects or animals.

Chapter II - The Party of the Second Part

Article 5. The party of the second part agrees to provide the necessary land needed for the multiplication of seeds.

Article 6. The party of the second part solemnly agrees under penalty of cancellation of this contract, not to

- use the land for purposes other than that of seed multiplication as stipulated in this contract.
- introduce plant materials other than that provided for multiplication purposes.

Article 7. The party of the second part agrees to furnish animal and human labor, agricultural materials and equipment that he has available for his own operations and the operations in common within the frame work of the multiplication program.

These operations include: Seed bed preparation, sowing, maintaining, transplanting, irrigating, pest control, harvesting, threshing, bagging, loading and unloading.

He will furnish manure in proportion to the arable land used for multiplication of seed.

The party of the second part agrees to carry out the best possible cultural practices including soil preparation, transplanting, weed control, pest control and harvest. The party of the second part agrees to notify the agent of the Service of Agriculture as soon as possible of any epidemic or attack of insects or diseases, even though trivial, in order that check measures may be taken immediately.

The party of the second part agrees to take the responsibility for obtaining the necessary human and animal labor for his own operations.

Chapter III - Payments

Article 8. Payment will not be paid by the party of the first part for:

- the use of the land
- the use of agricultural material or equipment
- the animal or human labor needed for the operation and the transport of harvested products to the threshing floor
- the work in common as described in Article 7

Article 9. Loaned tools, equipment, sacks and other materials which are lost or damaged by the party of the second part must be paid for by the party of the second part at cost price to be deducted from the value of the seed purchased by the Agriculture Service.

Article 10. The harvest is the property of the party of the second part, however, this party cannot dispose of the harvest by consuming it nor by sale since the party of the first part is the sole purchaser of the entire harvest. In the case of invalidating Article 6 of the contract, the seed will not be purchased by the party of the first part.

Article 11. Payment will be made in kip:

- after deduction of value of seeds supplied for seed bed use, at price to be determined.
- after deduction of value of lost or damaged equipment that was loaned.
- after addition of any reimbursements according to article 4.

Article 12. Upon completion of the contract, payment will be made at 10% above the regional market price at the time of harvest as determined by the Agriculture Service in coolaboration with USAID representative at each center.

Place _____

Date _____

Signed and approved:

_____
The Party of the Second Part

_____
The Representative of the Party of
the First Part, the Service of Agriculture.
(The responsible Authority).

AFC Research Publication 130

AN EVALUATION OF THE AGRICULTURAL DEVELOPMENT ORGANIZATION OF LAOS

Ted L. Jones, Russell D. Frazier, and William L. Henning, Jr.

January, 1969

AGRICULTURAL FINANCE CENTER

Department of Agricultural Economics and Rural Sociology
The Ohio State University

Under Research Contract AID/ea-51 (Laos)
between
The United States Agency For International Development
and
The Ohio State University
Columbus, Ohio

FOREWORD

The Agricultural Finance Center, Department of Agricultural Economics and Rural Sociology of The Ohio State University, through a contract with the United States Agency for International Development (USAID), conducted this short term study. This project was designed to evaluate the organizational structure and operational program of the Agricultural Development Organization of Laos (ADO).

The authors wish to express sincere appreciation for the assistance and cooperation provided by the Director of Agriculture and other senior officials of the Government of the Royal Kingdom of Laos. The counsel, advice, and support of the USAID personnel in Laos is gratefully acknowledged. This study could not have been completed without their assistance and cooperation. A special note of appreciation is due Acting Director Albert Farwell, Deputy Director James Chandler, Walter Nixon, James Urano, and Robert Laubis, all of USAID/Laos. The authors owe a debt of gratitude to the interest and assistance of ADO personnel; Donald Murray, Executive Manager, the staff of the Central Office, and the ADO Field Managers.

Upon completion of the study, Russell D. Frazier returned to his position as Assistant Professor of Agronomy, University of Minnesota. Ted L. Jones and William L. Henning, Jr., Agricultural Economists, returned to the Agricultural Finance Center, Department of Agricultural Economics and Rural Sociology, The Ohio State University.

LIST OF TABLES

LIST OF TABLES (Contd.)

LIST OF ILLUSTRATIONS

LIST OF ABBREVIATIONS

ADO	Agricultural Development Organization
CSO	Commodity Supply Officer
ETO	State Transportation Monopoly (Thailand)
LADO	Laotian American Development Corporation
MBA	Master of Business Administration Degree
OSM	Office of Supply Management, USAID
RLG	Government of the Royal Kingdom of Laos
USAID	United States Agency for International Development
USAID/Agr.	Agricultural Division, USAID
USAID/Laos	Mission to Laos, USAID

Baht	20.5 Baht = $1.00
Kip	500 Kip = $1.00

TABLE OF CONTENTS

TABLE OF CONTENTS (Contd.)

TABLE OF CONTENTS (Contd.)

CHAPTER I

PROBLEM SETTING

Introduction

The economy of Laos is basically agricultural. Approximately 85% of the population live in rural villages and are engaged in subsistence agriculture. The Government of the Royal Kingdom of Laos (RLG) and the United States Agency for International Development (USAID) have jointly undertaken an extensive program to accelerate agricultural development, particularly rice production, so that Laos can move towards economic self-sufficiency. Specifically, present USAID Mission goals call for: (1) self-sufficiency in rice production by 1970; and (2) a 200,000 metric ton rice surplus by 1972. As a result of these goals, the agricultural sector has been given top priority in Laos' development program.

The economic development process is complicated in all countries. The complexity and difficulty of increasing the rate of economic development in Laos is compounded by several major factors. These factors, which particularly hinder development in Laos, include: (1) the security and refugee problems; (2) a balance of trade and balance of payments deficit; (3) a deficit in agricultural production; (4) an inadequate transportation and marketing system; (5) an inadequate banking system; (6) an inadequate educational system and shortage of trained personnel; and (7) ethnic and cultural differences within Laos.

The progress of the Laotian economy during the years ahead will depend primarily upon Laos' ability to increase agricultural production, particularly rice, and to sell this increased production at prices that will reward farm producers for their additional labor, investment, and risk.

The Mission of the Team

The achievement of economic self-sufficiency will require substantial modernization of the Laotian marketing system for both farm inputs and agricultural production beyond consumption requirements, and the establishment of an efficient agricultural credit system to meet the increased need for credit. The major objectives of the Team were: (1) to evaluate the ongoing operations of the Agriculture Development Organization of Laos (ADO) in the fields of rural market development and credit extension; and (2) to make specific recommendations for improving ADO's structure and operation.

In order to achieve the major objectives cited above, the specific objectives requested of the Team were: (1) to study the existing system for marketing agricultural inputs; (2) to study the existing Laotian rice marketing system; (3) to study the existing agricultural credit system; (4) to identify the major problems in marketing and credit that must be overcome if agricultural development is to be achieved; and (5) to investigate the desirability of establishing floor prices for rice and to recommend procedures for determining floor prices, if established.

Limitations of the Study

The objectives of this study are very broad and each is worthy of an intensive, detailed analysis. The time limitation placed upon the Team was 30 days in Laos. Within this time constraint, it was not possible for the Team to generate primary data. The results of this study reflect the analysis of incomplete secondary data and of information and opinions obtained directly from Laotian officials, USAID personnel, and a limited number of local businessmen. This study should be evaluated within the framework of these limitations.

Economic and Related Data

Table 1 provides a brief numerical overview of Laos compared with other Far Eastern countries. The Laotian population of 2.8 illion had a per capita income of approximately US $70 in 1966. The gross national product of Laos in 1966 was about US $173 million. Laos' population density of 30 per square mile is the lowest of any Far Eastern nation. About 85% of the population live in rural villages and are engaged in subsistence farming.[1/] The annual rate of population increase is estimated at two to four percent. Only 24% of the population are literate. Approximately six percent of the population are in school, which is the lowest figure of any country in the Far East.

1/ Background Notes, Laos, Department of State Publication 8301, October, 1967, page 6.

TABLE 1

ECONOMIC AND RELATED DATA
FAR EAST COUNTRIES

Country	Sq. Miles	Pop. Millions 1967	Pop. Density Per Sq. Mi.	Pop. Growth Rate % Per Yr.	GNP Per Capita 1966 $	% Literacy	Life Expectancy Years	People Per Physician	Pupils % of Pop.
Burma	262,000	26.0	100	2.1	70	60	42	4,900	10
Cambodia	67,000	6.0	90	2.1	140	31	44	25,000	12
Indonesia	576,000	113.0	190	3.2	100	43	32	34,820	11
Korea	38,000	29.8	780	2.4	139	85	52	2,710	21
Laos	91,000	2.8	30	2.4	70	24	30	25,700	6
Malaysia	128,000	9.7	80	3.0	306	43	57	6,100	22
Philippines	116,000	35.0	290	3.4	170	72	55	1,700	19
Thailand	198,000	33.7	170	3.3	140	68	50	7,300	16
S. Vietnam	66,000	17.0	260	2.8	126	40-50	35	16,600	13
Taiwan	14,000	13.2	960	2.8	247	78	63	1,500	22
Japan	143,000	100.9	690	1.0	1,074	98	69	900	22

Source: USAID/Laos -- Office of Program Evaluation, July, 1968.

Government expenditures have exceeded government revenues by more than eight billion Kip annually since 1966, as shown in Table 2. Imports, presented in Table 3, were at least 28 times the volume of exports from 1964 to 1966. Tin (42%) and wood (31%) were the major export commodities in 1967.[2/]

The lack of adequate transportation facilities within Laos seriously hinders economic development. There are no railroads in Laos and the all weather road network is not adequate. Rapids and falls prevent the commercial usage of several sections of the Mekong River in the southern part of Laos.[3/] Still, the Mekong River is the major route for transporting commodities in other sections of the country.

Agricultural Development Organization (ADO)
Organization and Operation

Background[4/]

The current annual average rice production in Laos of 550,000 metric tons (milled) has not been sufficient to meet national consumption requirements. The gap between consumption requirements and national production has been met traditionally by the importation of rice from Thailand. The magnitude of Laotian imports has been

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2/ Statistical Report, Laos, USAID/Laos -- Office of Program Evaluation, June, 1968, page 20.

3/ Background Notes, Laos, Op. Cit., page 6.

4/ For additional information on the development of ADO, see "The Agricultural Development Organization and The Rice Problem in Laos" by J. D. Drilon, Jr., December 15, 1965, pages 23-33 and "End of Tour Report" by John B. Sauvajot, April 26, 1966, pages 2-3.

TABLE 2

GOVERNMENT REVENUES AND EXPENDITURES, LAOS
FISCAL YEARS 1965-1968

	1965	1966	1967	1968
		(In Millions of Kip)		
Government Revenues	4,735	4,721	6,391	7,401
Government Expenditures	10,315	14,390	15,310	16,085
Deficit	5,581	9,669	8,919	8,684

Source: Statistical Report, Laos, USAID/Laos -- Office of Program Evaluation, June, 1968, page 12.

TABLE 3

EXPORTS AND IMPORTS, LAOS, 1964-1966

	1964	1965	1966
		(In Thousands of Kip)	
Exports	213,345	240,169	357,724
Imports	6,123,600	7,893,200	10,036,700
Balance of Trade Deficit	5,910,255	7,653,031	9,678,976

Source: Statistical Report, Laos, USAID/Laos -- Office of Program Evaluation, June, 1968, pages 20, 22.

estimated to be from 30,000 to 50,000 metric tons annually. Table 4 shows the amount and price of USAID rice imports for fiscal years 1966-1969. The extent of commercial rice importation into Laos is unknown.

The first joint RLG/USAID/Laos agricultural program, which began in 1956, concentrated upon the selection of local rice varieties and varieties from neighboring countries that were expected to perform well in Laos. As four improved rice varieties became available in 1964, an intensive program of rapid seed multiplication was launched.

This initial step in increasing rice production established the commitment which led to additional projects in support of the rice production program. It become evident that:

1) the improved seeds had to be distributed to farmers;
2) farmers had to be encouraged to grow quantities of rice in excess of their subsistence needs;
3) new capital inputs (such as fertilizer, insecticide, tools, and sprayers) had to be made available to farmers;
4) farmers had to be able to obtain these capital inputs, which meant a need for agricultural credit;
5) farmers had to be taught how to use these new capital inputs (technical advice); and
6) the rice marketing system needed to be improved if the price system was to reward farmers for their additional effort and risk.

TABLE 4

QUANTITY AND AVERAGE PRICE OF MILLED GLUTINOUS RICE IMPORTED INTO LAOS BY USAID FISCAL YEARS 1966-1969[a/]

	Single Bag		Triple Bag Air Drop		Total	
	Quantity Metric Tons	Price US $ Per Ton	Quantity Metric Tons	Price US $ Per Ton	Quantity Metric Tons	Average Price[c/] US $ Per Ton
1966	12,368	120	20,822	136	33,190	130
1967	19,053	143	16,278	171	35,331	156
1968	26,237	137	21,916	155	48,153	145
1969[b/]	7,570	139	320	155	7,890	140

a/ Grade -- 35% broken.

b/ July to October, 1968.

c/ Including bagging.

Source: Office of Supply Management, USAID Vientiane, Laos.

The question then arose as to what type of organization could best implement this expanded agricultural program. Mr. David R. Curtin, Acting Deputy Director of USAID, had proposed the creation of a Laotian American Development Organization (LADO) in November, 1964. He proposed that LADO should function as a modern business corporation to be authorized and initially funded by a project agreement under the USAID Program. The organization was to have two Co-Directors, a Laotian and an American. The purpose of LADO was to facilitate implementation of the AID Program and to promote the overall economic development of Laos. The "Curtin" proposal was carefully reviewed, but LADO was shelved as being too ambitious a program to be implemented at that time.

In February, 1965, Mr. J. Hawes recommended to W. C. Tucker, Chief, USAID/Agriculture, Laos, that a semi-autonomous organization be established to facilitate the RLG/USAID rice production program. On April 22, 1965, after careful study, the Agricultural Development Organization (ADO) was initially established by a project agreement between the RLG and USAID/Laos. A presidential decree issued by the Prime Minister of Laos formally created ADO in October, 1965. The six articles of this decree are as follows:

> "Article I: An organization endowed with legal status and financial autonomy named the 'Agricultural Development Organization' (ADO) is created with a view to stimulate and promote the development of agriculture in Laos.
>
> "Article II: The attached statutes of ADO which are part and parcel of this Order are approved.
>
> "Article III: ADO is entirely financed by the Counterpart Special Fund in Kip from the American Economic Aid.

"Article IV: The direction of the ADO with all the power of management is entrusted to the Director of Agriculture of the Royal Government working in close collaboration with the Chief of the Agricultural Division of USAID/Laos.

"Article V: The exoneration of the land taxes on the movable and immovable properties, the customs tax and duty, the turnover tax as well as the income tax is granted to ADO.

"Article VI: The Minister of National Economy and the Plan, the Minister of Finance, and the Cabinet of the Presidency of the Council of Ministers are charged, each for his own concern, with the execution of this Order."5/

In summary, ADO developed as an expansion of the joint RLG/USAID/Laos Agricultural Devleopment Program. ADO was created: (1) to add flexibility to the RLG/USAID Agricultural Program; (2) to conduct projects that would lend themselves to businesslike methods; (3) to improve the Laotian economy by implementing projects without hindrance from governmental agencies at the provincial and local level; and (4) as a corollary to the above, to develop Laotian managerial abilities.

Original Organization of ADO

The original organizational chart proposed for ADO in 1965 is shown in Figure 1. The overall responsibility for ADO was placed with the Commission for the Plan and the Director, USAID/Laos. The Co-Director's responsibilities were vested in the Director of Agriculture, RLG and Chief, USAID Agriculture Division. As indicated in the organizational chart, their responsibilities included both policy

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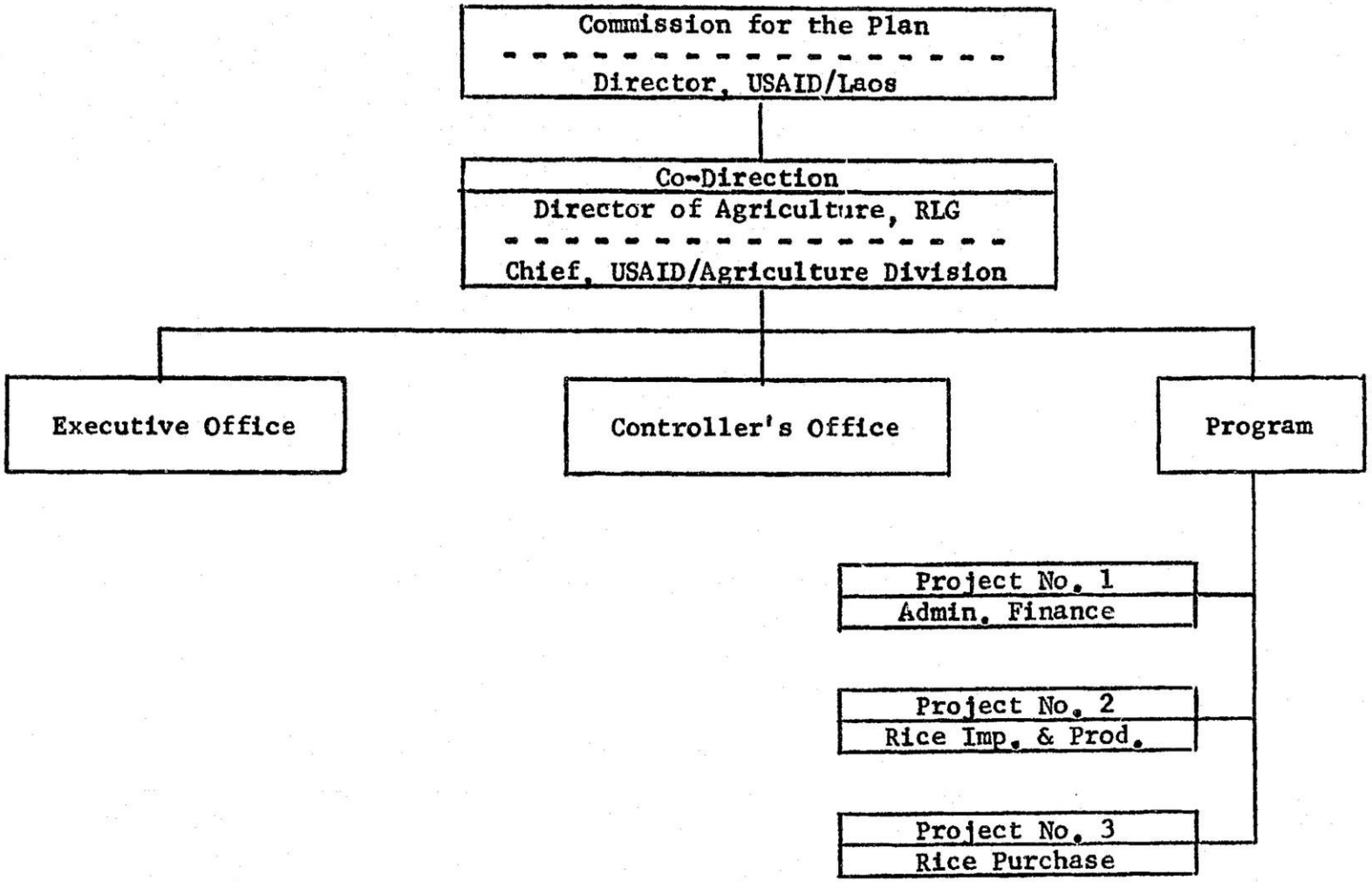
5/ Kingdom of Laos, Presidential Decree, No. 605/PC, October 4, 1965.

FIGURE 1

ORGANIZATIONAL CHART OF AGRICULTURE DEVELOPMENT ORGANIZATION -- 1965



Source: J. Drilon, Jr., "The Agricultural Development Organization and The Rice Problem in Laos," December, 1965, page 33.

making and operations. This was not a sound organizational structure. Soon, therefore, an Acting Executive Officer was assigned to establish ADO and to develop operating procedures and organizational responsibilities. Provincial Offices were established in Luang Prabang, Sayaboury, Thakhek, Savannakhet, and Pakse.

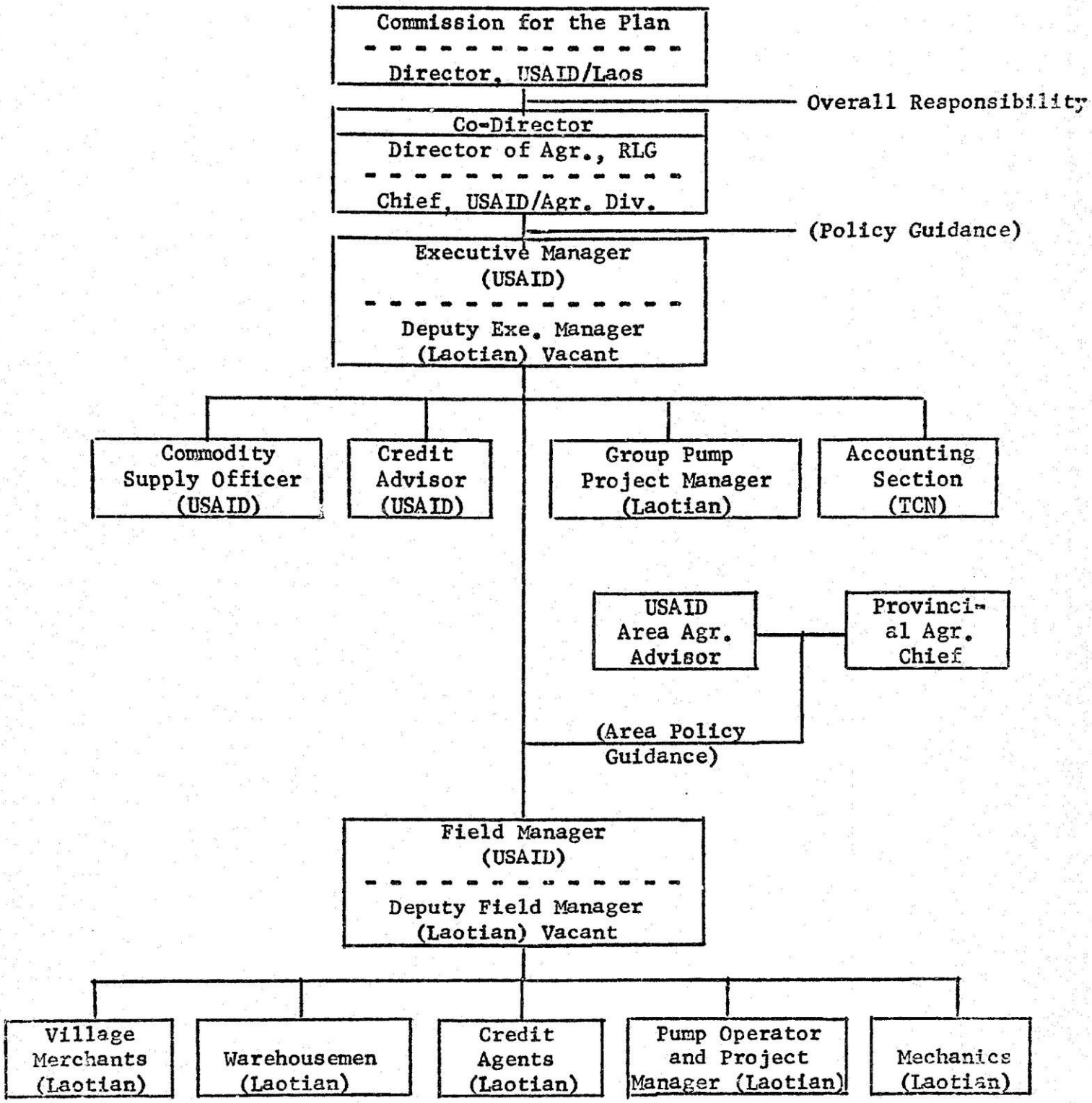
ADO Organizational Structure, 1968

The organizational chart of ADO, 1968 is shown in Figure 2. The present location of ADO provincial and sub-offices is shown in Figure 3. The following section briefly describes the organizational structure of ADO as of December, 1968 and compares it with the organizational structure in 1965.

1. Overall responsibility for ADO -- No change between 1965 and 1968.
2. Co-Direction -- The Co-Directors now provide both policy guidance and overall supervision. They have delegated operational and managerial responsibilities to the Executive Manager.
3. Executive Manager and Deputy -- The USAID Executive Manager is functioning, but the Deputy Manager (Laotian) position is vacant and has been vacant for several months. One of the difficulties in establishing ADO as a viable business organization is reflected in the number of Executive Officers that have been assigned to ADO since it began operations in 1965. Six different Americans have either been Acting Executive Officer or Executive Officer during this 44 month period. Most of the Executive Officers were neither trained as business managers, nor did they have previous experience in managerial positions. The choice and assign-

FIGURE 2

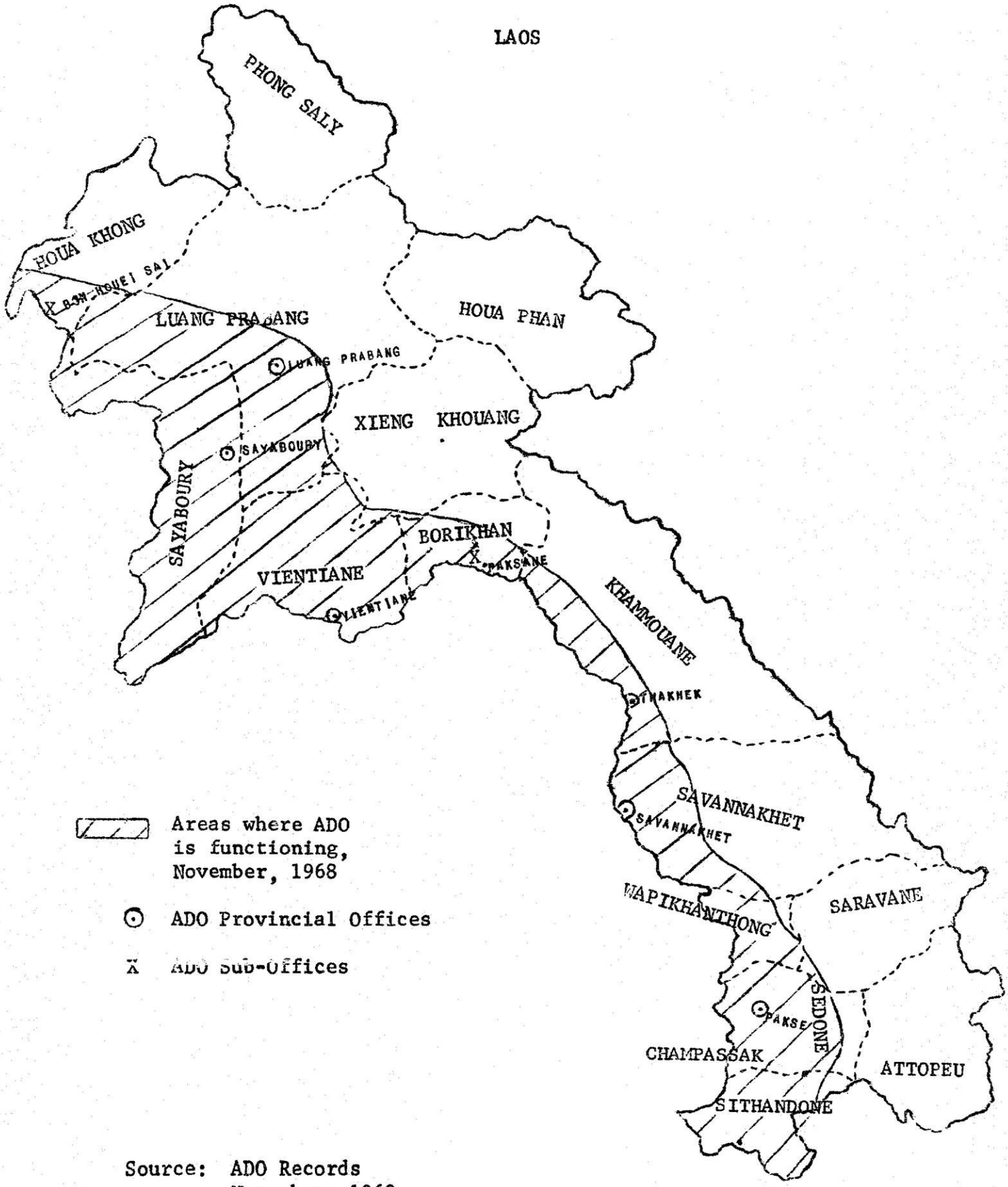
ADO -- ORGANIZATIONAL CHART, 1968



Source: ADO Records, December, 1968.

FIGURE 3

LAOS



Source: ADO Records
November, 1968

ment of the ADO Executive Manager is the responsibility of USAID with the agreement of the RLG Direction of Agriculture. The rapid turnover of Executive Officers indicates that USAID has not provided ADO with management continuity. The present Executive Officer has been in his position for less than one year and expects to depart within three months.

4. Commodity Supply Officer (CSO) -- Not present in 1965. The CSO's primary responsibilities are to order commodities, to make arrangements for forwarding commodities to provincial field offices, and to establish proper procedures for inventory control. He does not have a Laotian counterpart. The present CSO has been on the job for approximately two months.

5. Agriculture Credit Advisor -- Not present in 1965. The Credit Advisor's major duties include: a) developing credit policies for new loans, evaluating existing credit policies, analyzing existing loan procedures, and making recommendations regarding collection policies, etc.; b) developing feasible criteria, procedures, forms, and contracts necessary to implement loan projects; c) assisting in the formation of farmer loan receiving groups; d) assisting ADO field personnel in the areas of credit and cooperatives; and e) providing reports and assisting the Executive Officer as requested. The present Credit Advisor is beginning his second two-year tour in this position.

6. Group Pump Project Manager -- Not present in 1965. This staff position was created as a result of difficulties in managing and

supervising group pump loans. The group pump project represents the first attempt to formally organize Laotian farmers into common interest groups. The Group Pump Credit Contract has not been clearly understood by the farmer members. Also, the terms of the contract have been changed several times. As a result, the pump groups are still in a state of confusion. The pump manager appears to be fully occupied with the present 16 farmer groups.

7. Accounting Section -- The present Accounting Section is comparable to Project Number 1, Administration and Finance in the 1965 organization. But the responsibilities of this section have been increased as the number of ADO personnel has risen, as the number of loans has expanded, and as the volume of commodities distributed has multiplied. The Accounting Section has the responsibility of maintaining a record of inventory on hand in the Central Office as well as in the field offices. To date, this has been a paper control without a regular physical inventory being taken in the field offices.

8. Field Manager (Provincial) -- American Field Managers were first hired in 1965, although they did not appear on the original organizational chart. All of the seven American Field Managers speak the local language, which is a necessary prerequisite for the position. All present Field Managers are either ex-Peace Corps volunteers from Thailand or former members of the International Voluntary Service in Laos. The Field Manager position is essential to the successful operation of ADO. The managers are directly responsible to the Executive Officer for the sale of

commodities for cash or credit; the supervision of Laotian village merchants who handle the cash sales of fertilizer, tools, insecticides, etc.; the supervision of ADO credit agents who contact farmers directly to sell them improved inputs; and the supervision of all other local ADO employees. The Field Managers are responsible for the commodities assigned to them for storage and sale. One of the most pressing problems faced by ADO Field Managers is the difficulty of hiring Laotians capable of assuming the duties of Deputy Field Manager. As the volume of business expands and the number of employees per Field Office increases, the necessity of a second management layer in the Field Offices becomes increasingly apparent.

9. Village Merchants (Laotian) -- Not present in 1965. the ADO Field Managers were instructed to locate capable Laotian merchants in selected villages in their provinces to handle the cash sale of ADO commodities. Commodities were then consigned to these merchants. The ADO merchants sell the input commodities to farmers for cash at prices established and published by ADO. The merchant's consignment inventory is checked monthly. The merchant pays the Field Manager for all ADO commodities that have been sold or lost less a ten percent commission. If a farmer cannot pay cash, the merchant does not sell to him on credit, but rather refers the farmer to the ADC Field Manager who conducts credit sales. The village-merchant arrangement with its obvious locational advantages has strengthened ADO's commodity distribution system. The lack of merchant ability to administer a credit program has limited this project's impact.

The number of ADO village merchants has increased from 41 in 1967 to 83 in October, 1968. Table 5 breaks down the village-merchant project by province. The largest number of village merchants is found in the Vientiane provincial area.

10. ADO Employees -- In August, 1968, ADO had 146 employees in Field Offices and 12 employees in the Central Office in Vientiane. The job classification, salary, and distribution of these employees is summarized in Tables 6 and 7. These figures do not include either the three American employees in the Central Office or the seven American Field Managers.

ADO's Role in Laotian Agricultural Development

During 1968, ADO dramatically expanded its role as a facilitator of agricultural development. Chapter II will describe ADO's activities involving the sale of agricultural inputs. The expanding agricultural credit activities of ADO will be examined in Chapter III. ADO's agricultural marketing activities, particularly the rice buying program, will be described in Chapter IV. Chapter V will include recommendations concerning ADO's organizational structure.

TABLE 5

NUMBER OF ADO MERCHANTS, BY PROVINCE, 1967 AND 1968

Area	1967	1968
North		
Luang Prabang	4	6
Sayaboury	5	13
Central		
Borikhan	2	14
Vientiane	12	19
South Central		
Khammouane	6	12
Savannakhet	5	12
South		
Pakse Area	7	7
Total	41	83

Source: ADC Records, December, 1968.

TABLE 6

JOB CLASSIFICATION, NUMBER OF EMPLOYEES, MONTHLY SALARY, ADO FIELD OFFICES, AUGUST, 1968

Job Classification	Monthly Salary (Kip) a/	Number of Employees						
		Luang Prabang	Sayaboury	Vientiane	Thakhek	Savannakhet	Pakse	Total
Credit Sale Merchant	100,000	-	-	1	-	-	-	1
Secretary	12,000-18,000	2	1	4	2	1	1	11
Merchant Control	12,000-15,000	-	-	1	-	1	-	2
Credit and/or Sales Agent	12,000-14,000	11	9	11	4	6	9	50
Credit Collector	14,000	-	-	1	-	-	-	1
Warehousemen	7,000-11,000	-	1	1	1	2	2	7
Warehousemen/ Purchase Agent	12,000	-	5	20	3	5	5	38
Driver	14,000-16,000	-	-	2	-	-	-	2
Pump Operators	5,000	-	-	25	3	-	5	33
Laborer	6,000	-	-	-	-	1	-	1
Total	1,844,220	13	16	66	13	16	22	146

a/ Includes five percent salary increase.

Source: ADO Records, November, 1968.

TABLE 7

JOB SSIFICATION, NUMBER OF EMPLOYEES, AND MONTHLY SALARY, ADO CENTRAL OFFICE, VIENTIANE, AUGUST, 1968 a/

Job Classification	Number of Employees	Monthly Salary Kip
Secretary	2	25,000 - 35,000
Accountant Assistants	5	17,500 - 27,500
Mechanic	3	12,000 - 22,750
Janitor	1	13,000
Guard	1	15,000
Total	12	262,700 b/

a/ Does not include USAID/American employees.

b/ Includes five percent salary increase.

Source: ADO Records, November, 1968.

CHAPTER II

AGRICULTURAL PRODUCTION

Traditional Rice Cultivation[6/]

The traditional method of growing glutinous (sticky) rice in paddies in Laos follows a pattern that involves very little modern equipment, materials, or technology.

Paddy land is generally plowed in May after the annual rains have moistened the soil, but before the paddies become flooded. A single water buffalo is used for power, normally pulling an iron share, single bottom plow. After plowing, the dikes around the paddies are examined and repaired as necessary. A second plowing occurs when a few centimeters of water have accumulated in the paddy. Finally, a simple wood-toothed harrow is pulled by buffalo through the flooded paddy to remove clumps of weeds and complete the process of soil puddling.

After the ground has been prepared, rice seedlings are transplanted from the seed bed to the paddy. Seedlings are generally planted three to five per clump at roughly 30 centimeter spacing. Generally speaking, little attention is given to orderly row spacing. The transplanting of two hectares of rice will normally require the labor of three people working half days for roughly one month.

6/ Taken in part from Development of the Plain of Vientiane, Agricultural and Soil Study, Societe Grenobloise d'Etudes et d'Applications Hydrauliques by Marinet, Seguy, and Andre, 1961.

Throughout the growing season, labor is required for hand weeding and dike maintenance. Water control depends mainly upon natural rainfall.

Prior to harvesting, the dikes are cut and the paddies drained in order to facilitate field work. Cutting is generally done with a hand sickle. The bundles of rice are hand tied and left in the field on top of the stubble to dry. After about three days of drying, the sheaves are gathered and stacked near the threshing floor.

The threshing floor is generally made of packed earth or concrete. A variety of threshing methods are used. Threshing is most commonly done by buffalo trampling or by hand striking the sheaves on a rack or simple piece of wood. As a final threshing, bamboo switches are used to beat the detached grains. The grain is then winnowed and dried for a few days in the sun.

Each family generally stores its rice in a large split bamboo basket kept in the house. This rudimentary grainary is often one meter (three feet) in diameter and one-and-a-half meters (four and one-half feet) high.

Physical Inputs

Seed

Seed multiplication and distribution was the initial project under the RLG-USAID increased rice production program. ADO has functioned as the operational organization for implementing the rice seed project. ADO distributes seed to selected farmers for

multiplication and re-purchase. This re-purchased seed is then resold by ADO to any and all buyers as improved rice seed. Figure 4 shows the magnitude of the rice seed project. Given the present wide-spread use of the available improved varieties of rice seed, the demand for ADO seed is expected to be roughly 200 metric tons in 1969.

The mechanics of the seed multiplication project have been developed to the point where the present critical factor is the suitability of the rice seed to local conditions within the various regions of Laos. The problem of improving available varieties is a continuous one that demands local, sophisticated research on a on-going basis. Laos has historically lacked this research capability, but current work holds promise of progress.

In addition to rice seed, ADO currently distributes small amounts of various vegetable seeds. This program dovetails Laotian needs for an improved, diversified diet.

Fertilizer, Insecticides, and Small Tools

The efficient use of fertilizer and insecticides is an integral part of agricultural development and goes hand in hand with the use of improved seed. Prior to 1967, the use of artificial fertilizers and insecticides in Laos was minimal. Since then, the RLG and USAID have undertaken to introduce these inputs into Laotian rice production.

ADO has served as the operational vehicle for distributing both fertilizer and insecticides. Table 8 shows the amount of fertilizer nutrients that ADO has introduced into Laos.

FIGURE 4

VOLUME OF ADO'S RICE SEED DISTRIBUTION PROGRAM

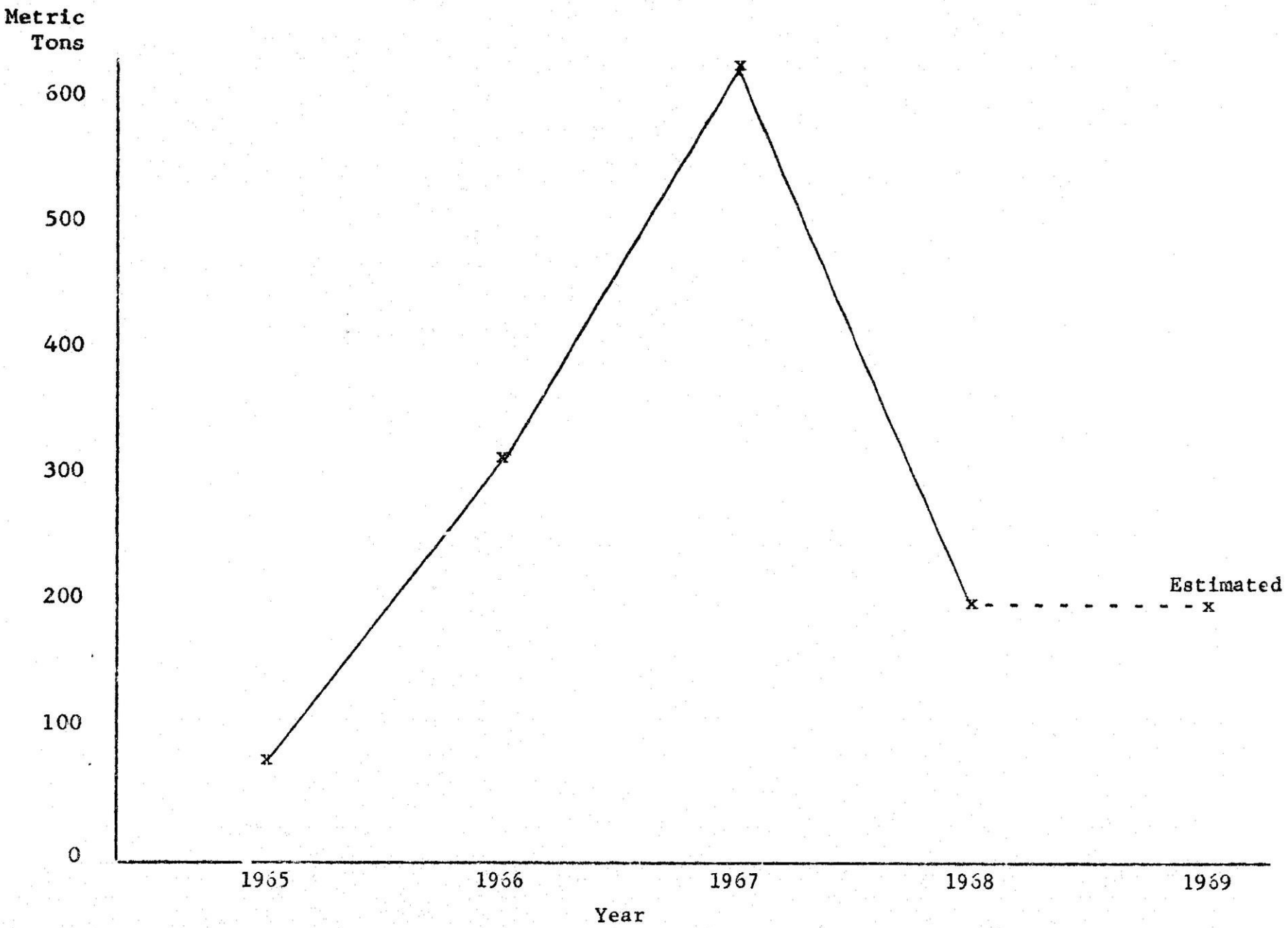


TABLE 8

TONS OF FERTILIZER NUTRIENTS USED
LAOS 1967-1968

	1967		1968
	Wet	Dry	Wet
N	68	25	163
P_2O_5	24	20	163
K_2O	21	0	0

Since fertilizers are relatively new to Laos, little research has been done on the fertilizer response of local rice varieties under local soil and climatic conditions. Figures 5, 6, 7, 8, and 9 summarize the available data on fertilizer use. It is clear from these data that additional work will need to be done to assure the most efficient use of fertilizer by Laotian farmers.

Utilizing the above data on fertilizer response as a guideline, Table 9 presents a rough estimate of the fertilizer demand for Laos through 1971. The actual use of fertilizer over the next three years will depend, first, upon producers' rate of adoption and, second, upon the marketing system's ability to supply the amount of fertilizer desired by rice producers.

Both fertilizer analyses and amount used can be expected to vary among the different provinces of Laos. Table 10 summarizes the past use of fertilizer by province. It can be concluded from Table 10 and a knowledge of local conditions that the rate of adoption and the overall demand for fertilizer will vary widely among the different parts of Laos.

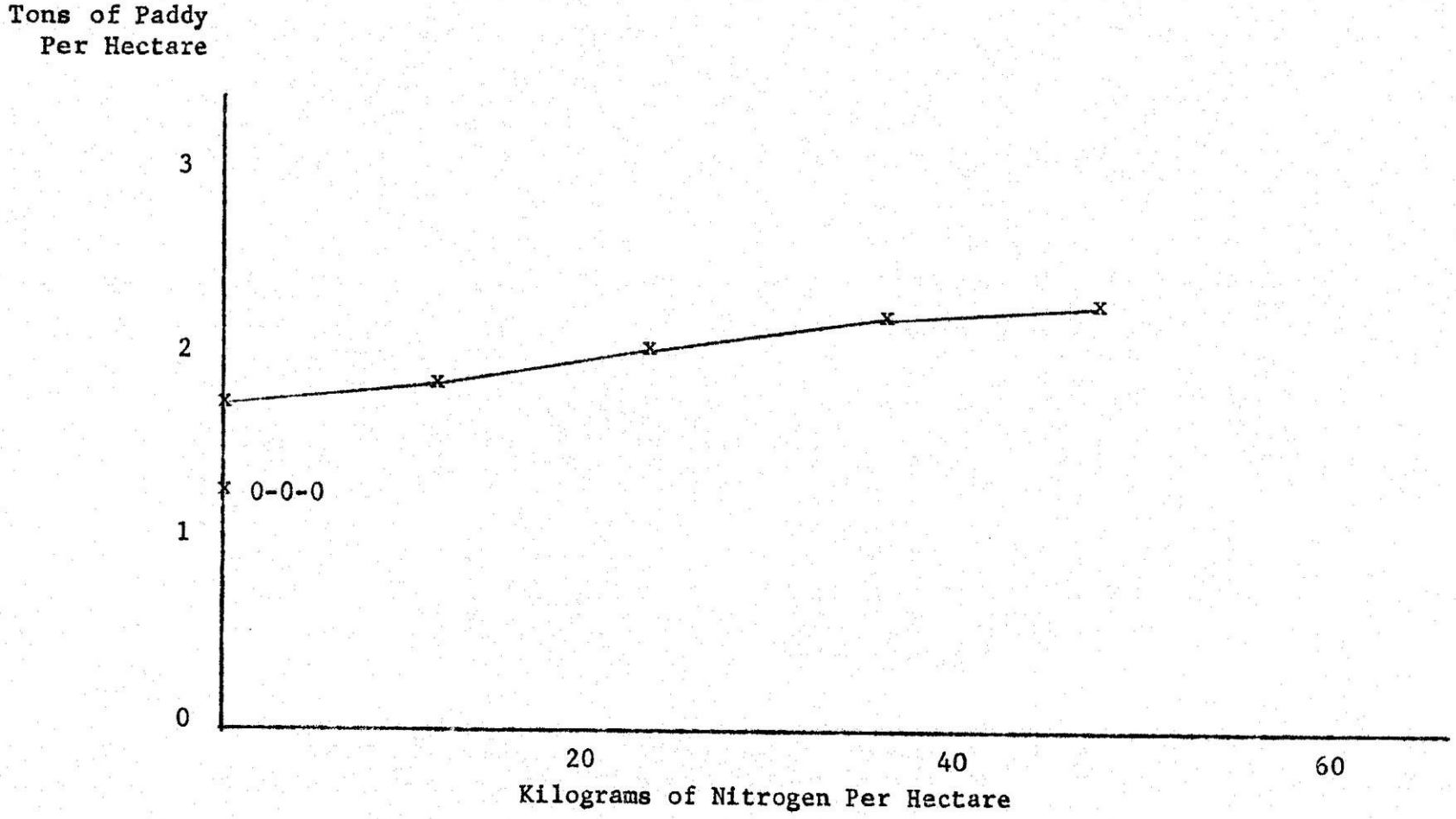
ADO presently distributes sprayers, barbed wire, and a variety of hand tools to Laotian farmers. These inputs compliment ADO's other projects.

Water

Water management plays an increasingly important role as rice producers expand their use of improved seeds, fertilizers, and insecticides. The need for water in any dry season rice program is

FIGURE 5

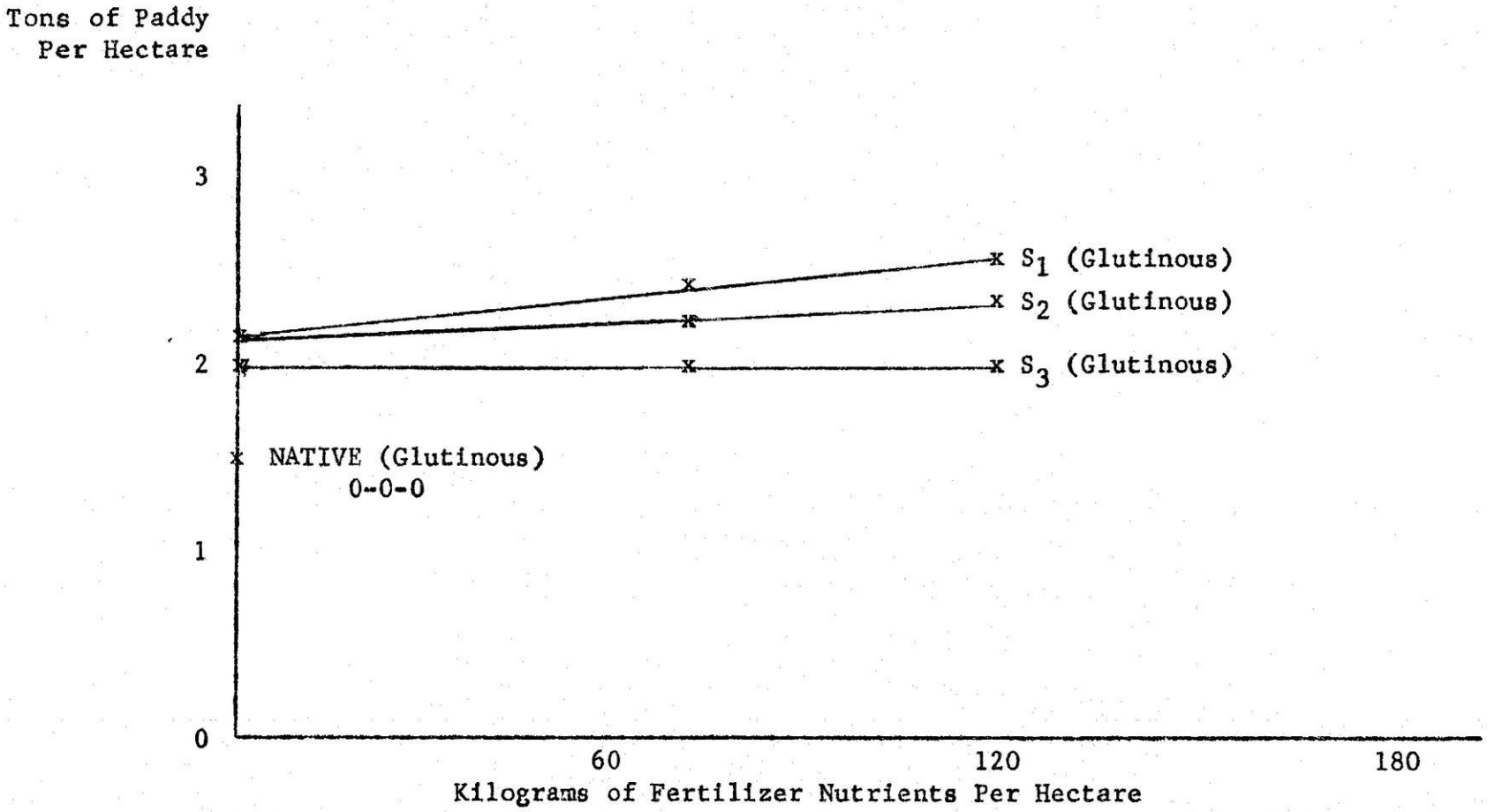
INDICA VARIETIES RESPONSE TO NITROGEN -(N-25-0)
NORTHEAST THAILAND 1960-1963
132 Farmer Field Trials



Source: Sompoth & Scoville, 1965.

FIGURE 6

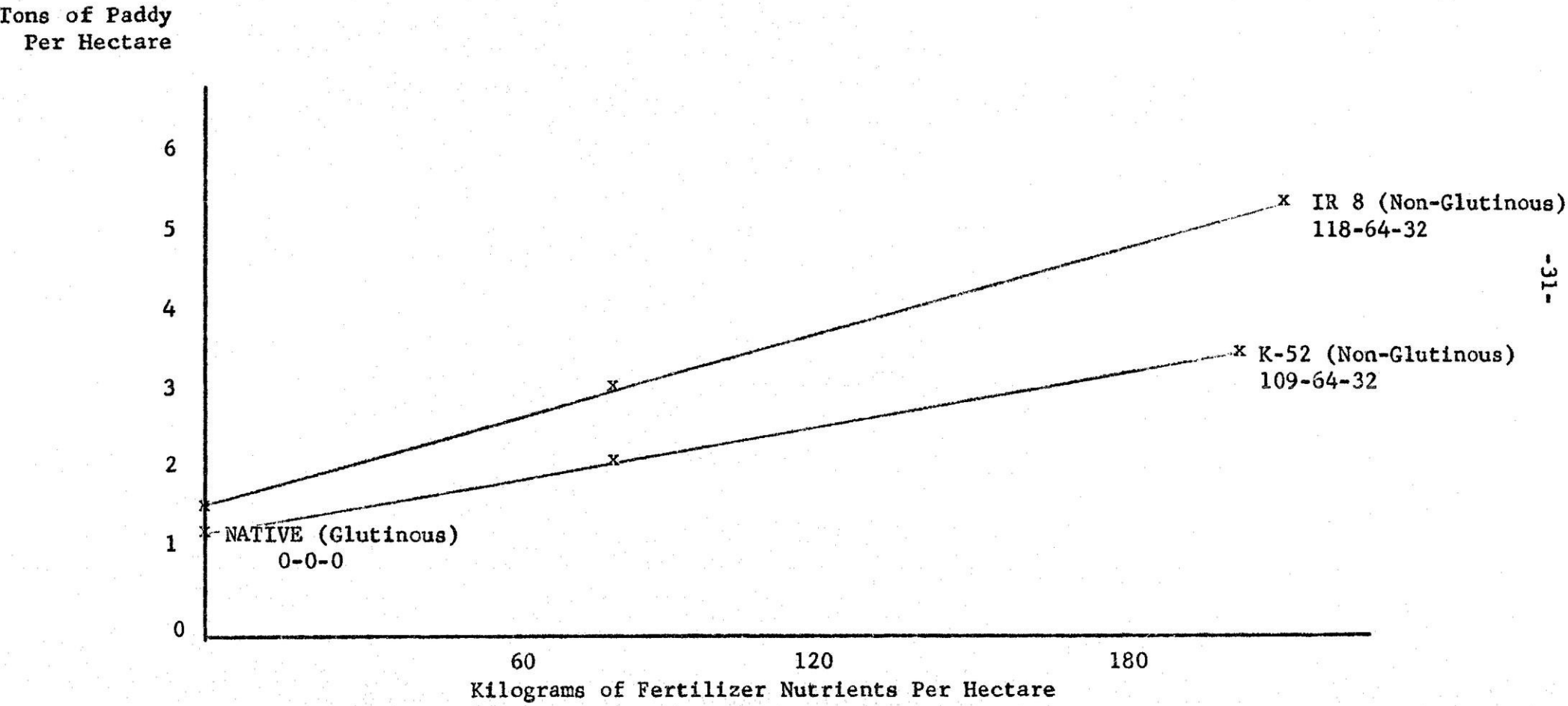
VARIETY RESPONSE TO FERTILIZER - (60-45-20)
LAOS, WET SEASON 1966



Source: Boun Nong & Leinbach, July, 1968.

FIGURE 7

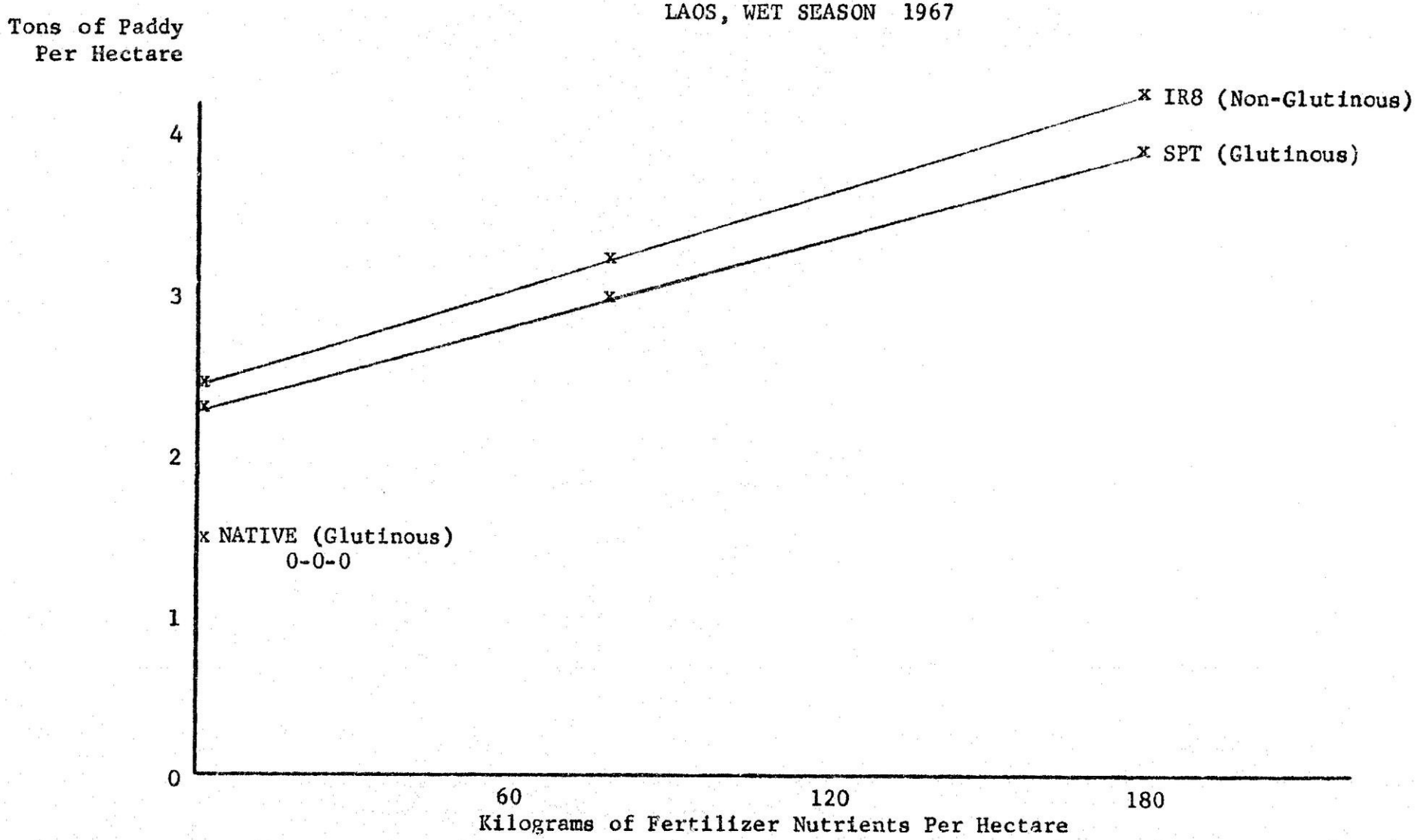
VARIETY RESPONSE TO FERTILIZER USE
LAOS, DRY SEASON 1966-1967



Source: Boun Nong & Leinbach, July, 1968.

FIGURE 8

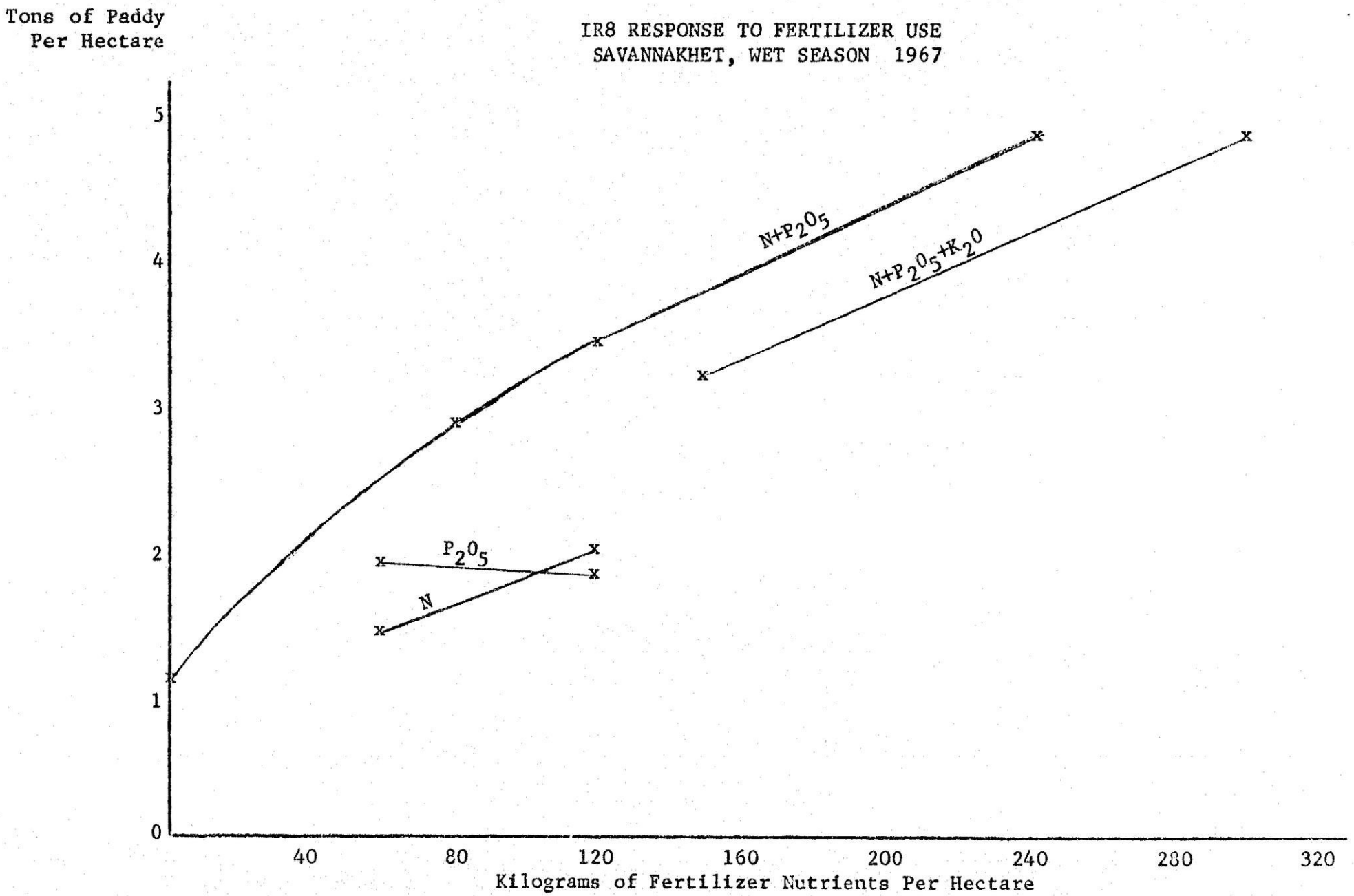
VARIETY RESPONSE TO 86-64-32 FERTILIZER
LAOS, WET SEASON 1967



Source: Boun Nong & Leinbach, July, 1968

FIGURE 9

IR8 RESPONSE TO FERTILIZER USE
SAVANNAKHET, WET SEASON 1967



Source: Veui & Muhr, November, 1968.

TABLE 9

ESTIMATE OF FERTILIZER DEMAND
LAOS, 1968-1971

	Dry Season		Wet Season	
	Hectares[a]	Tons of Nutrients[b] (1-1-0)	Hectares[a]	Tons of Nutrients[b] (1-1-0)
1968	960	80	3,950	330
1969	2,000	166	8,000	735
1970	3,900	325	19,200	1,600
1971	6,500	540	32,000	2,750

a/ Based on rice production estimates of January 8, 1968.

b/ Assumes an application rate of 100 kilograms of 40-40-0 per hectare.

TABLE 10

FERTILIZER USE BY PROVINCE
LAOS, 1967-1968

Area	Fertilizer (tons)
North	
Luang Prabang	180
Sayaboury	28
Central	
Borikhan	31
Vientiane	155
South Central	
Khammouane	81
Savannakhet	210
South	
Pakse Area	263
Total (tons)	948

obvious. The RLG and USAID have inaugurated several different irrigation projects including both gravity systems and large and small pumps.

ADO has helped to implement both the small and large pump projects. ADO began small pump sales in early 1967, and large group pump distribution later the same year.

Although hard research data are not available, it is believed from observation of Thailand, and the little available experience in Laos, that small water pumps may well have a large role to play in the future agricultural development of Laos. The main physical barrier to expanded small pump use in Laos is the lack of a maintenance and repair capability. It is anticipated that individual farmers will use small pumps for dry season vegetables, for dry season rice, or, as necessary, for supplemental wet season irrigation.

The use of large group water pumps is handicapped by a lack of trained operators and managers as well as by a lack of maintenance and repair capabilities. Experience, up to this point in time, has yet to demonstrate convincingly the economic justification for large pump groups in Laos.

Mechanical Power[7/]

The primary sources of power for Laotian agriculture are hand

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7/ Much of the data for this section comes from Tractor Survey Report by Robert E. Laubis, July, 1968.

labor and water buffalo. The present use of mechanical power in Laos is quite limited.

A number of 45-60 horsepower tractors have been introduced into Laos in recent years. Some of these tractors have been imported under the auspices of foreign assistance programs. The limited maintenance and repair capabilities of the Laotian agricultural sector are a particular problem with this highly complex machinery. Expected tractor life in Laos has been estimated to be only half as great as in other countries. Available research data indicate that the full cost of tractor operation in Laos is roughly twice the cost of operation in Thailand.

Cost studies further indicate that on the Vientiane Plain tractor preparation of paddy land provides no economic advantage compared to hiring the work done by water buffalo. Because of the difficulty of breaking new ground, it does appear that tractors can open new paddy land more efficiently than water buffalo.

Almost no attention has been paid to determining the suitability of small hand tractors to Laotian agriculture because of the interest of sponsors of foreign assistance programs in introducing their own large tractors. A very limited number of hand tractors have entered Laos through private commercial sources.

In 1968, ADO brought mechanical threshers into Laos on a limited trial basis. The results of this experiment are not yet known.

Production Activities

Double Cropping

The RLG and USAID have undertaken to encourage the expansion of double cropping in order to rapidly expand Laotian rice production. To the Laotian farmer, double cropping means the adoption of an entire package of improved practices (seed, fertilizer, and insecticide) as well as irrigation.

Figure 10 provides a very rough estimate of dry season rice production through 1974. Because of the difficulties of cultural change and limitations of the marketing system, dry season rice production is not expected to expand by more than 2,000 hectares per year over the next four or five years.

The actual amount of double cropping in Laos over the next several years will depend upon the decisions of individual producers. These decisions, in turn, will depend upon the expected costs of and returns from dry season rice. Table 11 attempts to show the relative costs and returns of both wet and dry season rice in Laos.[8/]

It is the personal and professional opinion of Dr. Sala, Director General of the Rice Department of Thailand, that individual subsistence rice producers in Thailand, because of their inability to duplicate demonstration conditions, do not normally undertake to change production practices unless government testing experience

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8/ Table 11 is discussed further in Appendix A.

FIGURE 10

ESTIMATION OF DRY SEASON RICE PRODUCTION
1969-1974

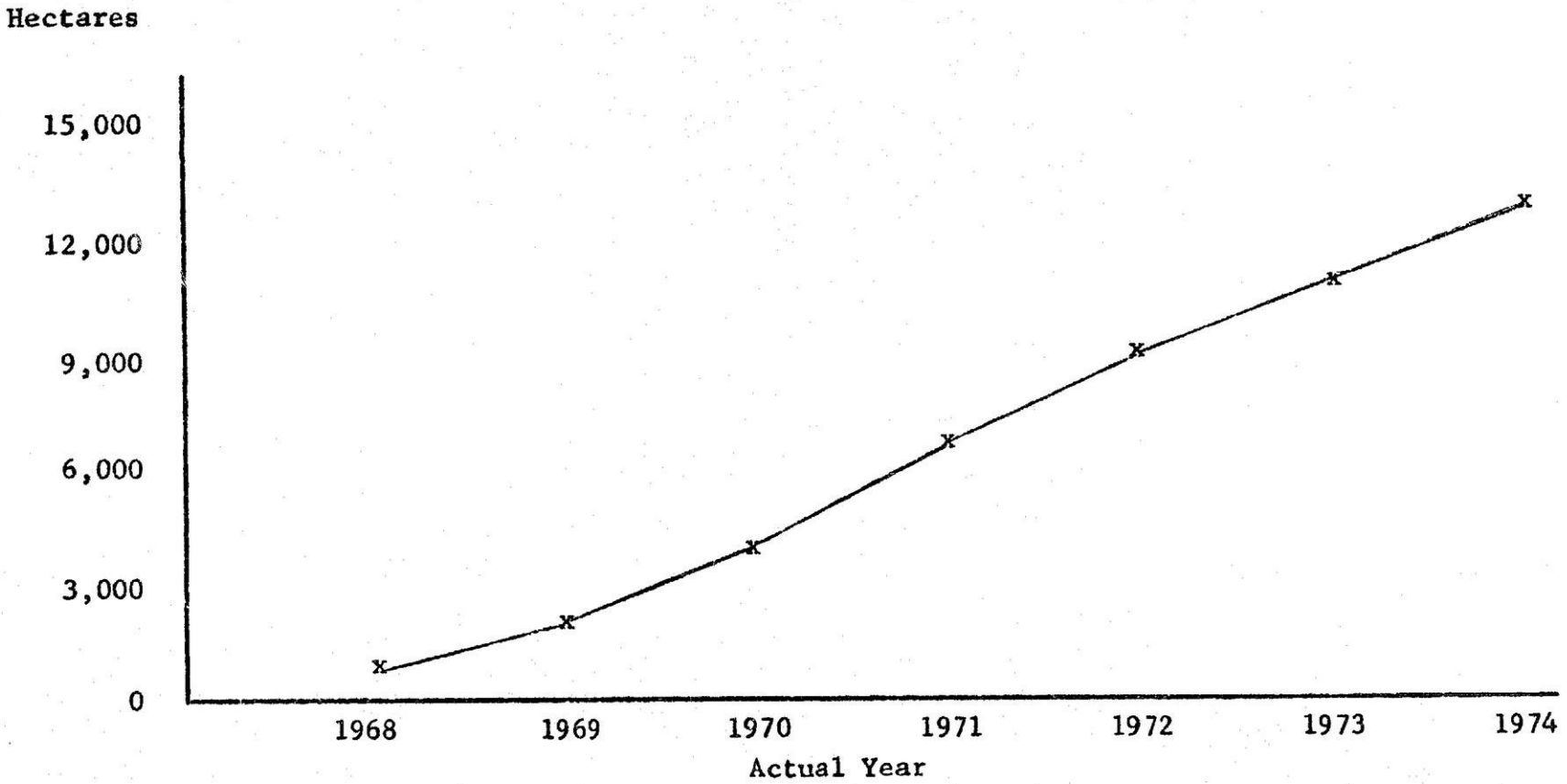

TABLE 11

RICE PRODUCTION COSTS AND RETURNS a/
PER HECTARE

	Costs (Kip)	
	Wet	Dry
Technical Inputs	35,050	35,050
Labor	39,462	39,462
Water	0	20,000
Total	74,512	94,512

	Returns (Kip)	
	Wet	Dry
Income	126,000 b/	150,000 c/
Cost	74,512	94,512
Profit	51,488	55,488
Rate of Return	69%	59%

a/ Based on RLG extension demonstration experience and ADO group pump cost estimates.

b/ Based on a yield of 4.2 metric tons per hectare and a paddy price of 30 Kip per kilogram.

c/ Based on a yield of 5.0 metric tons per hectare and a paddy price of 30 Kip per kilogram.

shows a 200% rate of return. This analysis is probably valid for Laotian subsistence farmers who are also unable to match demonstration conditions in their own paddies. The estimated rate of return of 59% for dry season rice, as shown in Table 11, is far from 200%.

The health of both farmer and buffalo may be another physical barrier to dry season rice production. Some farmers are not interested in dry season rice because they feel it will leave them or their buffalo too tired to efficiently work the following wet season crop. Although this situation may indicate a farmer's high valuation of leisure time, it may also be literally true, and reflect the inadequate diet of the Laotian subsistence rice producer.

Alternative Crops

The opportunities in Laos for crops other than rice appear to be manifold. It is understandable that the subsistence farmer, who lives a precarious existence, devotes almost all of his energies to raising his staple food crop, rice. However, by using modern technology, each farmer can be expected to gradually increase his rice production beyond his own family needs. Then the average Laotian rice producer can be expected and encouraged to channel some of his efforts into broadening and improving his diet. As the economy, as a whole, becomes able to adequately meet the overall demand for rice, some producers will begin to specialize in raising and marketing crops other than rice, and then buy rice for their own family consumption.

In developing a plan to encourage the production of alternative crops in Laos, regional differences in climate, culture, and potential

markets must be considered. At present, paddy land generally lies idle during the dry season. With irrigation, dry season vegetable production could be expanded. Dry edible beans, potatoes, tomatoes, eggplant, green peppers, and white onions are all crops whose expanded production may be feasible and which might have an impact on Laotian eating habits.

Fruits, at present, are generally produced in a casual fashion with very little modern technology. Laos may have a potential for expanding the production and consumption of bananas, pineapples, papayas, strawberries, and citrus fruit.

Possibilities exist for expanding and diversifying upland agriculture through the production of grain sorghum, maize, peanuts, tobacco, cotton, and sugarcane. Coffee, tea, and soybeans present additional upland crop potential subject, however, to particular marketing or processing problems. Kenaf, with dry season irrigation, could become an important source of fiber for sacking.

As the caloric deficit in Laotian nutrition is eliminated through expanded rice production, there appears to be a great potential for improving diets through expanded livestock production, both fowl and ungulate. Increased livestock production would probably involve the expansion of feed grain, grass, and legume production as well.

CHAPTER III

AGRICULTURAL CREDIT

Introduction

The credit and other financial services of an agricultural credit institution in a less developed country are not provided in a vacuum. The types and kinds of financial services that will best facilitate agricultural development must be determined after the economic, social, political, technological, and marketing environments have been analyzed for the country in question.9/

Laos is no exception to this basic principle. Chapter I indicates that the majority of Laotian farmers exist near the subsistence level. The unavailability of improved technology, the lack of modern capital inputs, the problem of low incomes, the lack of savings, the lack of credit services, the inadequacy of education, and the underdeveloped marketing system are all factors inhibiting the transformation from traditional to commercial agriculture.

The financial and monetary system of Laos is rudimentary. There are only six commercial banks in the entire country. All are located in Vientiane with only one or two banks having branches or agents in other cities. Because commercial banking only began in 1953 and because of the limited number of bank offices, the local economy is little involved with the banking system. Few individuals maintain

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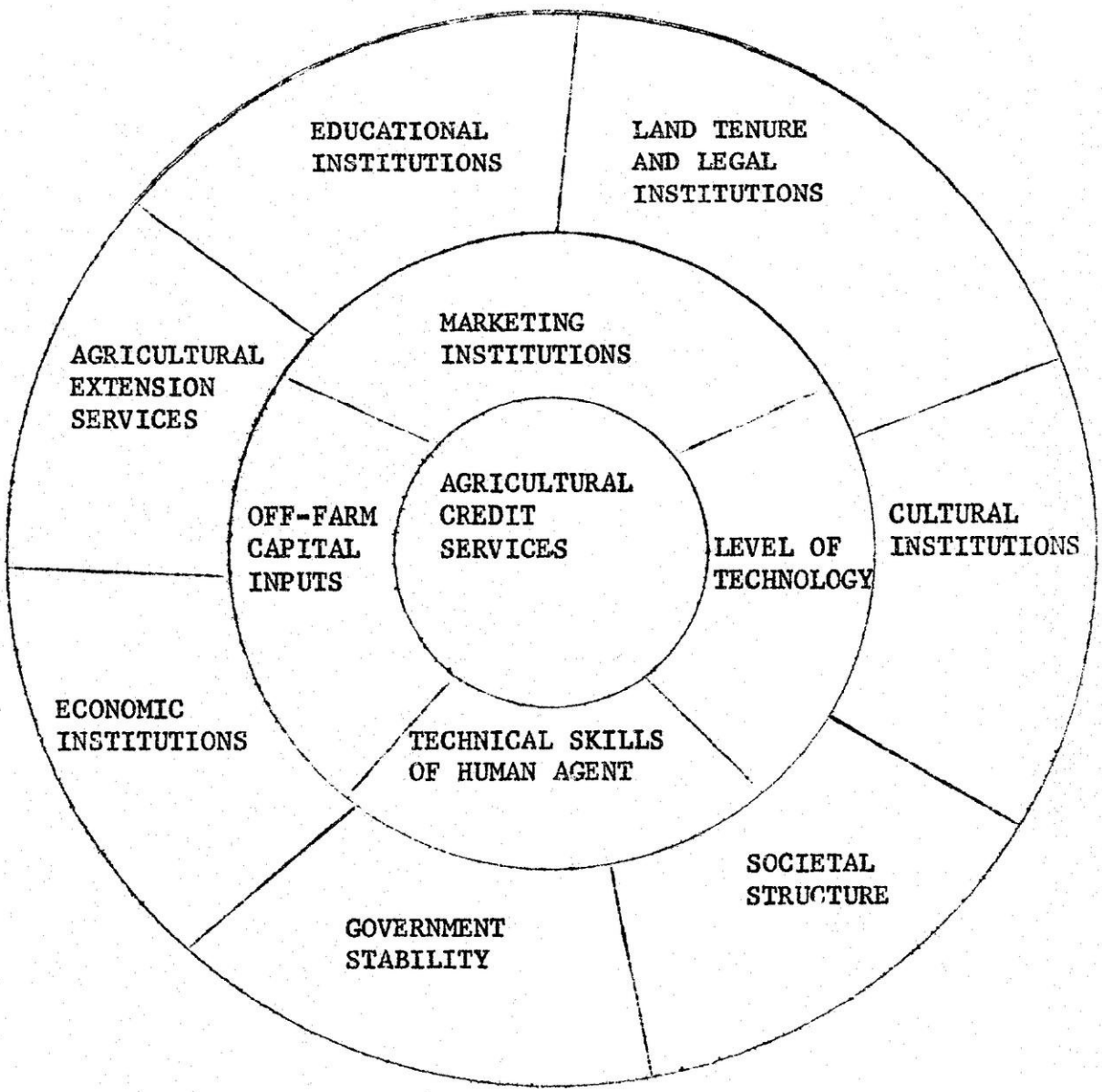
9/ Figure 11 (following page) and Appendix B further develop this principle.

FIGURE 11

ENVIRONMENTAL FACTORS INFLUENCING THE AGRICULTURAL CREDIT SERVICES REQUIRED FOR INCREASING THE RATE OF ECONOMIC DEVELOPMENT



demand deposits (checking accounts). Short-term credit for the financing of foreign trade is available from commercial banks, but medium or long-term credit for developmental purposes is not generally available.[10/] Individuals with personal savings generally either keep their cash in their homes or buy gold, jewelry, or other compact, high value objects.

The traditional moneylender, usually Chinese, is the financial institution with which most Laotian farmers are familiar. Borrowing from moneylenders for either consumption or production purposes is expensive with effective interest rates of 100 percent or more per annum. The moneylender is often the merchant who sells supplies to the villager and who buys his excess production. This moneylender-merchant, in his position as both the seller of goods and the buyer of production, can artificially adjust both the price of goods and rice to his own advantage. The repayment of loans is usually made in kind (for example, paddy) rather than in cash. This system of repayment in kind seems reasonable and is understandable to the Laotian farmer who regularly barters for goods, but who does not understand the abstract concept of interest. The familiarity of the farmer with the moneylender and his way of doing business as a seller of agricultural supplies and as a buyer of produce must be strongly considered by any institutional source of credit that may be developed.[11/]

10/ Area Handbook for Laos by T. D. Roberts and others, U. S. Government Printing Office, December, 1966, page 274.

11/ Roberts and others, Ibid., pages 274-275.

Requirement for Capital and Credit Services in the Agricultural Development of Laos

Conventional economic theory assumes that the traditional subsistence economy is in equilibrium. Given the traditional level of technology, the individual farmer is allocating, organizing, and utilizing his existing resources in a near optimum manner. In other words, none of the resources -- land, labor, or capital -- could be reduced without decreasing total production.

The subsistence economy model further assumes that increased total production can occur only through a complete reorientation of the agricultural system. This reorientation towards increased production requires (1) a change in the level of technology, (2) the introduction of new capital inputs, and (3) an improvement in farmer management capabilities. If the traditional agricultural economy is to be changed to a commercial one, markets for excess (beyond subsistence) production must be available to reward the farmer for his increased efforts.

These facts have been recognized by RLG and USAID personnel for several years. Sauvajot stated in 1964 that the basic conditions inhibiting the economic development of Laos were:

1) a lack of credit facilities;
2) a lack of commercial (capital input) supply services;
3) a lack of transportation facilities;
4) a lack of motivation for farmers to produce beyond their subsistence needs; and
5) a lack of trained manpower.[12/]

12/ John B. Sauvajot, End of Tour Report, Department of State, May, 1966, page 5.

The RLG and USAID created ADO to facilitate the agricultural development of Laos. Figure 12 shows how the ADO program has naturally developed over time: first, to introduce new technology and capital (improved rice seed project); second, to provide agricultural credit (buffalo loan project); third, to develop an input distribution system (village-merchant project); fourth, to develop a marketing system (rice buying and milling projects).

ADO's main focus has been the introduction of new capital into Laotian agriculture. In order to accomplish this goal, each ADO project has involved the use of credit.

To summarize, historically, Laotian farmers; (1) have not had modern inputs available, (2) have not had sufficient capital or credit to modernize their operations, and (3) have not had a well developed market for their surplus rice.

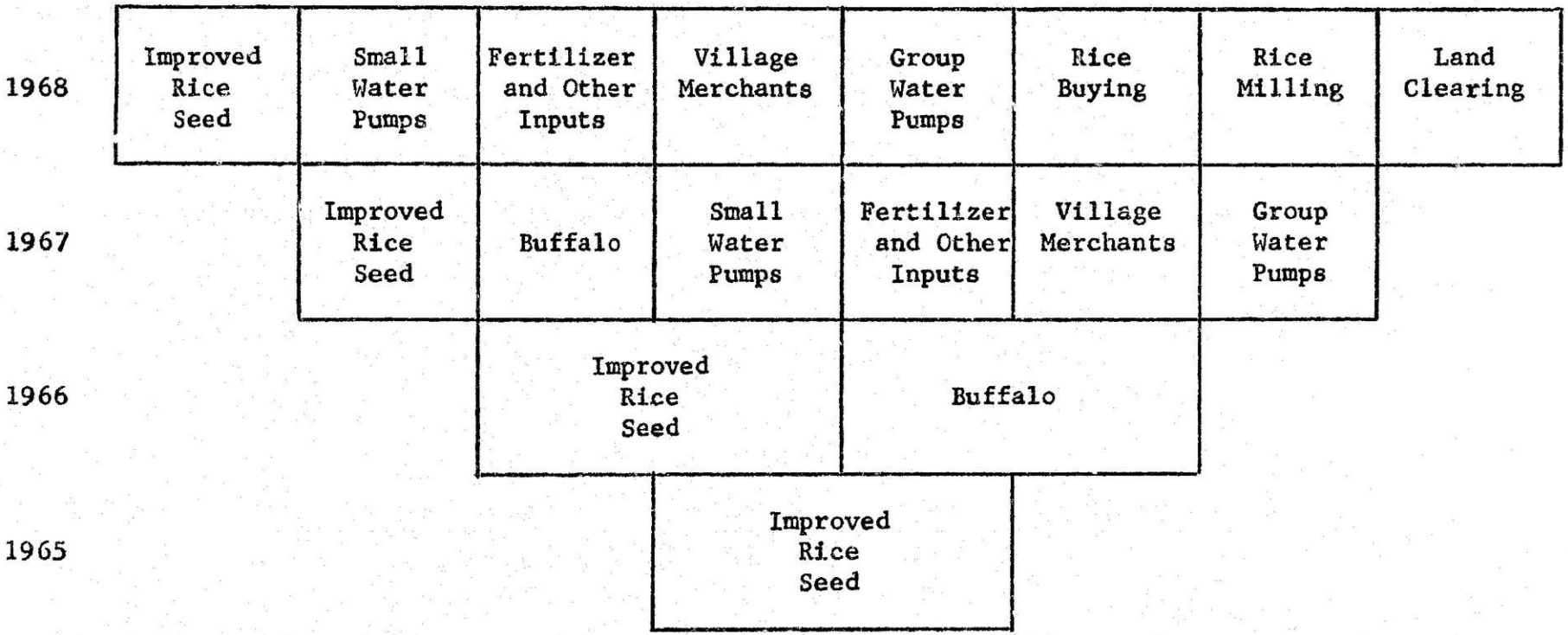
Inputs were discussed in Chapter II while marketing will be discussed in Chapter IV. The following portions of Chapter III discuss the credit services of ADO.

ADO Credit Activities

The agricultural credit activities of ADO were designed to facilitate the agricultural development program of Laos, given the RLG/USAID emphasis upon increasing rice production. It should be emphasized that prior to ADO's entering the credit field, Laotian farmers were not familiar with institutional sources of agricultural credit.

FIGURE 12

DEVELOPMENT OF ADO PROJECTS



Non-institutional agricultural credit, from moneylenders, was the framework within which Laotian farmers experienced and learned about credit. This experience with moneylenders should lead Laotian farmers to a greater appreciation of a well-run, efficient source of institutional credit. Laos is not saddled, as are so many countries, with a history of institutional credit failure.

ADO's management has viewed its credit projects as essential to the successful operation of other ADO business activities -- such as the sale of agricultural inputs and the purchase of paddy. The credit projects have expanded and grown as the total ADO operation has increased. The development of ADO credit activities is summarized in Table 12.

ADO has developed one credit project to be put into effect during the Fall of 1969 or the Spring of 1970. This credit project is associated with the development of the Nam Tan irrigation project in Sayaboury Province. ADO has contracted with a commercial firm to cut the timber from 1,500 hectares of land that will be put under paddy cultivation after the irrigation dam is completed.[13/] The cost of the land clearing is 50,000 Kip per hectare. The farmers that will be settled on this land will be required to pay these clearing costs. They will have to sign a contract with ADO before moving onto the land. These farmers will repay their loans in Kip or paddy with an interest rate of six percent on the original loan principal. The length of the loan will be from two to five years depending upon the amount of land each farmer agrees to cultivate. The farmers will receive title to the land when the clearing costs have been paid.

13/ ADO currently has one direct-hire employee supervising the

TABLE 12

DEVELOPMENT OF ADO AGRICULTURAL CREDIT PROJECTS
1965-1968

Date Initiated	Project[a/]	Loan Cost Ratio (Percent)	Interest Rate (Percent)	Length of Loan	Type of Repayment	Project Active Nov., 1968
Spring 1965	Improved Rice Seed	100	0	6 Months	1 kg. Paddy for 1 kg. Seed	Yes
June 1966	Buffalo	100	3	2 Years	Paddy or Kip	No
Spring 1967	Buffalo (Refugee Relief)	100	3	3 Years	Paddy or Kip	No
Spring 1967	Fertilizer, Insecticide, Sprayer, Barb Wire, etc.	100	1% per Month	6 Months	Paddy or Kip	Yes
Spring 1967	Small Water Pump	60	1% per Month	1 Year	Paddy or Kip	Yes
Fall 1967	Large Water Pumps (Group Loan)	100	6	3 Years	Paddy or Kip	Yes
August 1968	Consumer Loan (In Conjunction with a Rice Purchase Contract)	n/a	0	4-6 Months	Paddy Only	Yes
1969-1970[b/]	Land Clearing	100	6	2-5 Years	Paddy or Kip	No

a/ All but the Consumer Loan Project provided credit in kind. The consumer loans were actually cash advances on the future purchase of paddy.

b/ Production loans to individual farmers will be given after land is cleared.

Analysis of ADO Credit Projects

The types of credit projects developed and implemented by ADO reveal a clear understanding of the necessity of injecting new and improved capital inputs into agriculture in order to bring about increased production. The low income farmer does not have sufficient savings to buy the needed improved inputs so agricultural credit is provided to finance this additional capital. Credit in kind instead of cash is provided to help insure that new capital is used for productive purposes and not for consumption.

Improved Rice Seed -- The first credit project undertaken by ADO was to finance the multiplication of improved rice seed as a first step in the LG/USAID rice production program. Credit in kind (seed) was offered to farmers selected by RLG Extension with the loan to be repaid with paddy at a rate of one kilogram of paddy for each kilogram of seed lent. ADO further contracted with the borrower to purchase all additional paddy produced from the improved ADO seed at a 15 percent premium over the local market price.

Buffalo -- The buffalo loan projects were not successful. Several factors were involved, but one of the major ones was that loans were made in areas that later came under Pathet Lao control. As a result, many buffalo loans could not be collected. In some areas, the project was hampered by the death of buffalo from disease. In other areas, the borrowers did not completely understand the terms of the credit contract and were reluctant to repay their loans.

During the Spring of 1967, buffalo loans were made in conjunction with the refugee relief program. These loans went to refugees who were unfamiliar with the use of buffalo in paddy production. It should be recognized that the buffalo loan project did not introduce new capital inputs into agricultural production, but rather simply represented a transfer in ownership. A net increase in total rice production would occur only if the borrowing farmer was a more efficient user of buffalo than the previous owner.

Sixty-two percent of the buffalo loans outstanding and 54 percent of the volume outstanding were past due on October 31, 1968. At the request of ADO's Executive Manager, the Co-Directors discontinued the buffalo loan project in the Spring of 1968.

Production Inputs -- Fertilizer, insecticide, sprayer, barb wire, and small water pump credit projects were put into effect in 1967. This was a logical extension of the concerted effort to introduce new capital inputs into Laotian agricultural production. This credit project has been quite successful except for collection problems in the North area.

Large Water Pump -- The large water pump loan project is the first credit to be extended to a group rather than to an individual farmer. This project must be viewed as an experiment and, as such, has several inherent problems. First, a well planned and well conducted educational program must present the entire pump project to the group before any contract is signed. This is time consuming, but essential if group projects are to be successful. Second, the terms of the credit contract must be carefully spelled out to each farmer in advance

of his signing and not changed after the contract is signed. Third, the pump project itself must be supervised by ADO personnel to insure that the pump is properly utilized and that each farmer in the group receives a fair share of the water. Fourth, the necessary maintenance and spare parts must be readily available.

There appears to be little in the cultural background of Laotian farmers to indicate that they will willingly work together in groups for economic gain or be jointly responsible for group loans. If future group loan projects are to be developed, they will need to be carefully planned, carefully implemented, and carefully supervised.

Consumer Loan -- The consumer loan project (cash advance on a rice purchase contract) was started in August, 1968 on an experimental basis. This project represents ADO's initial effort in rice marketing. The rice buying project was undertaken: (1) to help meet the rice needs of USAID's Office of Supply Management (OSM) for refugee and military support programs, and (2) to assure program participants of a better paddy price than they would receive from the traditional marketing system.

The custom on the Vientiane Plain has been for paddy buyers to make loans to paddy farmers in the few months prior to harvest (usually in Kip) to be repaid in paddy at harvest time. As a result, there is normally only a small amount of "uncommitted" paddy at harvest.

The cash advance project was undertaken to assure that ADO would have adequate rice to fulfill the OSM contracts. This project cannot be evaluated until the farmers have completed their harvesting, threshing, and repayment which will be in January and February, 1969.

Land Clearing -- The land clearing credit project has not yet been implemented so it cannot be evaluated. However, this particular project appears to have several significant weaknesses:

1) this will be the first time that Laotian farmers have been obligated to pay land clearing costs;
2) the magnitude of each loan is large (50,000 Kip per hectare) with repayment required over a period of several years;
3) some of these farmers have not grown paddy in the past;
4) land clearing represents only a part of the credit needs of these farmers -- ADO must be prepared to provide production credit or the farmers will simply be unable to farm the land; and
5) ADO will not be able to select its borrowers, but will be expected to provide credit to all farmers in the irrigation project.

The prerequisites of the Nam Tan credit project are educational preparation prior to resettlement and support and training after resettlement. This work will have to be done by Area USAID personnel and by the Provincial RLG staff. The credit project itself does not appear to have a solid economic base.

ADO's Current Credit Situation

ADO is, at present, the only institutional source of agricultural credit in Laos. ADO began making loans in 1965, but did not greatly expand its credit activities until 1967. Table 13 summarizes by area the present status of ADO's credit activities. ADO had 10,424 individual loans totaling 108,900,000 Kip ($218,000) outstanding as of October 31, 1968. The average loan size was 10,400 Kip ($21).

TABLE 13

NUMBER AND SIZE OF LOANS, VOLUME OF CREDIT OUTSTANDING, NUMBER AND VOLUME OF DELINQUENT LOANS, BY AREA, LAOS, OCTOBER 31, 1968

Areas	Number of Loans Outstanding	Volume of Credit Outstanding Kip (Millions)	Average Size of Loan Kip (Thousands)	Number of Loans Carried Over From 1967	Loans Past Due No.	Loans Past Due Percent	Volume of Credit Past Due Kip (Millions)	Volume of Credit Past Due Percent
North								
Luang Prabang	1,231	17.1	13.9	1,214	449	36	6.7	39
Sayaboury	927	7.3	7.9	172	39	4	.4	a/
Central								
Borikhan	214	1.4	6.5	16	16	7	.01	a/
Vientiane	1,996	14.2	7.1	74	153	8	5.7	40
Market Advance*	3,000	31.0	10.3	-	-	-	-	-
South Central								
Khammouane	1,077	8.3	7.7	627	81	8	2.0	24
Savannakhet	1,264	12.7	10.0	82	54	4	.8	a/
South								
Pakse Area	715	16.9	23.6	342	288	40	6.5	38
Total	10,424	108.9	10.4	2,527	1,080	10	22.11	20

a/ Less than one percent.

* Cash advances as a part of rice buying program.

Source: Monthly Reports - ADO, October 31, 1968.

As shown in Table 14, fertilizer loans, cash advances for paddy purchase, buffalo loans, and pump loans made up 37, 29, 20, and ten percent, respectively, of the loans outstanding.

Ten percent of the loans and 20 percent of the loan volume were past due. A breakdown of past due loans by type and area is found in Table 14. Past due is not necessarily the same as expected loss, but it does give an indication of where problems exist. ADO has not had enough credit experience to estimate loan repayment rates. ADO does expect about 95 percent repayment under normal conditions.

Analysis of Current Loan Problems

The agricultural credit situation as of October, 1968 clearly indicates great variation among the areas of Laos. The classifications of North for Luang Prabang and Sayaboury Provinces, Central for Vientiane and Borikhan Provinces, South Central for Khammouane and Savannakhet Provinces, and South for Sedone, Champassak, Sithandone, Saravane, and Attopeu Provinces are used throughout this report.

These areas differ in market system, land productivity, level of technology, and transportation facilities. The South normally produces surplus rice, while the North and Central areas do not generally produce enough rice to meet their consumption requirements. An analysis of ADO's credit problems clearly points out some of the regional differences in Laos. Table 15 breaks down ADO's outstanding loans by area and type, while Table 16 breaks down past due loans by area and type.

TABLE 14

NUMBER AND SIZE OF LOAN, NUMBER AND VOLUME DELINQUENT, BY AREA AND TYPE OF LOAN, LAOS, OCTOBER 31, 1968

Areas	Kind of Loan: Fertilizer				Pump				Buffalo				Other[a/]			
	No.	Av. Size (Kip)	No. Past Due %	Vol. Past Due %	No.	Av. Size (Kip)	No. Past Due %	Vol. past Due %	No.	Av. Size (Kip)	No. Past Due %	Vol. Past Due %	No.	Av. Size (Kip)	No. Past Due %	Vol. Past Due %
North																
Luang Prabang	649	14,125	28	50	4	88,750	75	89	99	39,220	-	-	479	7,690	55	53
Sayaboury	347	4,132	6	19	4	41,000	-	-	97	30,920	-	-	430	6,210	4	5
Central																
Borikhan	191	5,906	-	-	-	-	-	-	-	-	-	-	23	10,678	70	5
Vientiane	1,817	4,298	-	-	84	33,860	93	90	84	42,040	89	89	11	5,090	-	-
South Central																
Khammouane	801	4,321	-	-	21	62,950	7	14	91	32,310	81	61	164	3,622	-	-
Savannakhet	1,178	6,355	2	17	47	109,940	28	8	37	27,440	43	19	2	4,000	-	-
South																
Pakse Area	353	26,846	-	-	18	33,000	4	17	318	20,937	89	95	26	6,659	-	-
Total	5,336	7,489	4	15	178	58,680	54	34	726	28,960	62	54	1,135	6,547	26	28

a/ Excludes 3,000 loans made in Vientiane Province as advances for rice purchases.

Source: Monthly Reports -- ADO, October 31, 1968.

TABLE 15

PERCENTAGE OF TOTAL LOANS OUTSTANDING BY NUMBER AND VOLUME,
BY TYPE OF LOAN, AND BY AREA
LAOS, OCTOBER 31, 1968 a/

Areas	Type of Loan: Fertilizer Number (%)	Fertilizer Volume (%)	Pump Number (%)	Pump Volume (%)	Buffalo Number (%)	Buffalo Volume (%)	Other Number (%)	Other Volume (%)	Total Number (%)	Total Volume (%)
North	14	14	b/	b/	3	9	12	8	29	31
Central	27	11	1	4	1	4	b/	b/	30	20
South Central	26	14	1	8	2	5	2	b/	31	27
South	5	12	b/	b/	4	9	b/	b/	10	22
Total	72	51	2	13	10	27	16	9	100	100

a/ 7,424 loans for a total of 77,900,000 Kip were outstanding as of October 31, 1968.

b/ Less than one percent.

Source: Monthly Reports - ADO, October 31, 1968.

TABLE 16

PERCENTAGE OF TOTAL LOANS PAST DUE BY NUMBER AND VOLUME,
BY TYPE OF LOAN, AND BY AREA,
LAOS, OCTOBER 31, 1968 a/

Areas	Type of Loan									
	Fertilizer		Pump		Buffalo		Other		Total	
	Number (%)	Volume (%)	Number (%)	Volume (%)	Number (%)	Volume (%)	Number (%)	Volume (%)	Number (%)	Volume (%)
North	20	26	b/	2	0	0	27	8	47	35
Central	0	0	7	11	7	14	b/	1	14	27
South Central	b/	b/	2	2	9	8	0	0	11	10
South	0	0	b/	b/	27	28	0	0	27	28
Total	20	26	9	15	43	50	28	9	100	100

a/ Of a total of 7,424 loans representing 77,900,000 Kip, 1,080 loans totaling 22,110,000 Kip were past due.

b/ Less than one percent.

Source: Monthly Reports - ADO, October 31, 1968.

Although the North had 29 percent of the total number of loans outstanding, only 17 new loans were made in 1968. The other 1,214 loans were carried over from 1967. Forty-seven percent of all past due loans were in the North. Only in the North were more than one percent of fertilizer loans past due. Since no buffalo loans were yet due in the North, the credit situation probably looks more favorable than in fact it is. The credit problems in the North probably reflect cultural and physical differences relative to the rest of Laos and are not the responsibility of ADO field personnel.

The South had 22 percent of the total loan volume outstanding, but only ten percent of the loans. This means that loans in the South are roughly twice as large as elsewhere in Laos. Ignoring the buffalo program, less than one percent of all loans in the South were past due. Because of the regular rice surplus and market orientation of the area, credit programs should be more successful in the South than in the rest of Laos.[14/]

The pump loan project in the Central area represented 11 percent of the total past due volume. The buffalo loan project alone accounted for 50 percent of all past due loans. Many of the overdue buffalo loans are in unsecure areas and therefore impossible to collect.

To date, ADO's credit projects have been designed at the Central Office with identical procedures for implementation in all areas of Laos. The above analysis indicates that credit projects for Laos need to be designed on an area rather than country-wide basis. ADO further needs to conduct loan problem analysis on a regular basis by area and by project.

14/ The excellent teamwork of the RLG, USAID, and ADO personnel has

Estimated Demand for Agricultural Credit

The estimated demand for agricultural credit for fertilizer, pumps, and other inputs in Laos through 1971 is shown in Table 17. The credit demand for the Nam Tan land clearing project and cash advances for paddy purchase is not included in the estimates found in Table 17.

The peak demand in 1971 of 430 million Kip represents an increase of 650 percent in number of loans and 400 percent increase in loan volume over current projects. ADO cannot provide credit services of this magnitude given the present size and training of its field force. Recommended changes in ADO's organization and training will be discussed in Chapter V.

ADO's Credit Problems

Trained Personnel (Laotian)

A lack of trained manpower is probably the greatest limiting factor inhibiting the success of ADO. The difficulties in designing and implementing a continuing training program for individuals that have had six years of formal education or less are obvious, but an internal formal training program for ADO is needed now.

This extreme shortage of trained personnel seriously restricts ADO's credit program. The sending of 18 men to Thailand for three months of credit training is an excellent first step in developing a permanent credit training program for ADO. These 18 men should be viewed as a cadre of credit trainees for Laos.

TABLE 17

ESTIMATED DEMAND FOR AGRICULTURAL CREDIT THROUGH 1971

Fiscal Year	Fertilizer Loans				Pump Loans		Other Inputs Loans		Total Credit Loans	
	Wet Season Loans		Dry Season Loans							
	Number	Volume (Kip)	Number	Volume (Kip)	Number	Volume (Kip)	Number	Volume (Kip)	Number	Peak a/ Volume (Kip)
1967	560	3,610,000	-	-	140	5,000,000	50	185,000	750	8,795,000
1968	5,300	36,100,000	750	5,250,000	150	9,000,000	1,100	6,000,000	6,550	56,350,000
1969	10,000	70,000,000	2,400	17,800,000	300	15,000,000	2,000	12,000,000	12,300	114,800,000
1970	23,000	150,000,000	5,000	35,000,000	600	30,000,000	4,600	27,600,000	28,200	242,600,000
1971	40,000	280,000,000	7,500	52,500,000	1,000	50,000,000	8,000	48,000,000	49,000	430,500,000

a/ Any loan carry over will add to peak volume requirements.

Record Keeping

ADO presently has more than 10,000 loans outstanding. This number is expected to increase rapidly in the near future. The present manual method of processing, storing, and analyzing loan dockets is inadequate. Each field office should receive a statement from the Central Office at least twice a month to show loans that are currently due and all loans that are past due. ADO will need to shift its credit records to an automatic data processing system as the credit program expands.

Analysis of Loan Applications

ADO is aware of the limited financial analysis that loan applications presently receive. As the credit program expands, loan analysis will be necessary to assure both ADO and the borrower that the economic returns from the loan will be sufficient to make repayment.

Basic information such as size of farm, hectares of paddy, size of family, and estimated farm yield or income could presently be used by ADO in establishing the criteria for future credit activities. As Laotian farmers become educated to borrowing in Kip and repaying in Kip (rather than in kind), the need for a more complete credit analysis will increase.

ADO Solely as a Credit Institution 15/

Proposals have been advanced that ADO withdraw from the distribution and sale of agricultural inputs and become a pure credit institution. Given the present environment and outlook in Laos, this would be a mistake.

15/ The principles of a "pure" agricultural credit institution are discussed in Appendix C.

Laotian agriculture is faced with a complete lack of effective modern institutions. ADO's main strength is its broad balanced approach of considering all the institutional needs of Laotian agriculture.

For ADO to function as a credit institution only, other organizations would have to supply capital inputs, to improve the marketing system, and to provide technical assistance. No such institutions exist and to create them would both complicate and slow the development process. To efficiently promote the agricultural development of Laos, ADO will, for the present, need to remain in a wide variety of programs.

Development of Private Institutions

As the feasibility of various ADO projects is demonstrated, ADO should encourage the private sector to develop the capability of performing these services. The development of the village-merchant program is an excellent example. The reopening of a rice mill in Savannakhet is another case of ADO working effectively with the private sector. ADO will need to proceed deliberately and cautiously in these endeavors to protect itself and Laotian agriculture.

ADO's objectives should be to reform already existing institutions or develop new ones and not to reinforce the present institutions that hinder economic development. No hard and fast rules can be offered to guide ADO in working with local institutions. ADO's development of the private sector will call for good judgment and a good understanding of the hidden consequences of a given course of action.

Two Thailand based chemical companies have discussed with ADO the possibility of selling fertilizer and related inputs in Laos. This is to be encouraged on a trial basis. The South, as the most agriculturally developed area in Laos, would be a natural starting point. It would be in error for a private company to jump in throughout the country. The North, in particular, will not be a viable commercial market in the foreseeable future.

Farmer Credit Groups

There has been much discussion in ADO of forming credit receiving groups. There is much merit in developing a long range project of this sort.

The large pump project demonstrates many of the problems in organizing farmer groups. The sale of fertilizer to credit groups has been tentatively proposed to ADO. ADO is capable of organizing a large number of groups to accomplish this. ADO is not capable of adequately educating or guiding these groups.

For the present, ADO should experimentally form 15 to 25 credit groups in two areas of the country. From this experience, ADO can develop its expertise in cooperative organization and management for gradual expansion throughout Laos.

CHAPTER IV

AGRICULTURAL MARKETING

Function and Need for a Marketing System

The basis of economic development is specialized production. The benefits of specialized production depend upon the efficient mutual exchange of goods and services between various economic entities. This exchange of goods and services is called marketing. Marketing occurs to a lesser or greater extent in all societies whether tribal or industrial. Laos is no exception. Marketing in a rudimentary fashion occurs throughout the country even among the hill tribes.

In a traditional subsistence economy, the family or tribal unit produces for its own needs exclusively. Economic contact outside the basic social unit is kept to a minimum, often involving only necessities such as salt, cloth, and iron goods for cutting and cooking. As economic development proceeds, subsistence producers become more and more dependent upon the marketing system.

First, farm producers need a marketing system to provide them with the modern inputs necessary to increase their agricultural production. Producers then need a marketing system to absorb the surplus production beyond their own family needs. Producers also need a marketing system to provide them with consumer goods (radios, metal roofing, etc.) so that their surplus production can be effectively converted to an increased standard of living. In addition, as producers increasingly devote their efforts to expanding their specialized production, they need a marketing system to provide them with products that they have previously supplied for themselves.

Thus, for example, if a subsistence farmer decides to raise a second crop of rice, he will have to be able; 1) to buy the seed, fertilizer, insecticide, and pump necessary to grow more rice; 2) to sell the extra rice that he produces; 3) to buy consumer goods with the returns from his increased production; and 4) to buy the baskets he made and the fish or birds he caught when he did not grow a second crop of rice.

The agricultural development of Laos will depend upon, among other things, the development of an effective marketing system. This marketing system will need to assure the rapid and inexpensive transfer of goods and services as shown in Figure 13.

Marketing Problems in Laos

Fragmented Markets

In terms of agricultural inputs and outputs, Laos does not present itself as a single market. Rather Laos has several distinct markets some of which are interrelated. A lack of dependable and inexpensive transportation is the main factor that prevents Laos from functioning as a single agricultural market. Figure 14 presents a rough outline of the agricultural market structure of Laos.

The major rice markets in Laos and estimates of their population are given in Table 18. In addition, USAID has an annual requirement of roughly 50,000 tons of milled rice for the military and refugee relief programs. In effect, the cities in Table 18 are the commercial consumption markets for rice in Laos. Each Laotian village, as a small subsistence economy, markets rice locally only on an informal unstructured basis.

FIGURE 13

MARKET MOVEMENT IN LAOTIAN ECONOMY

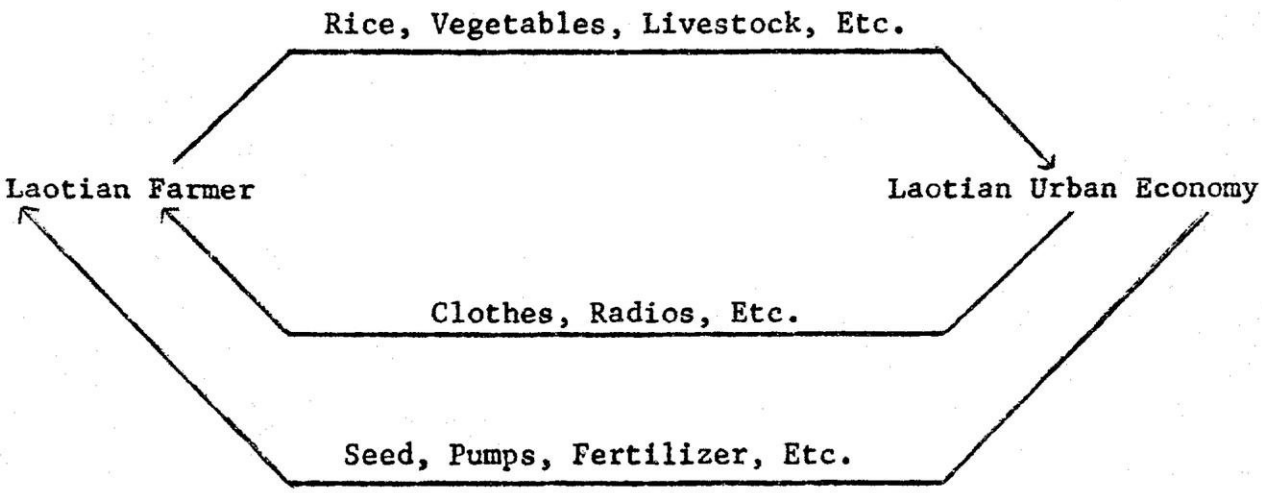


FIGURE 14

IMPORTANT AGRICULTURAL MARKETS OF LAOS

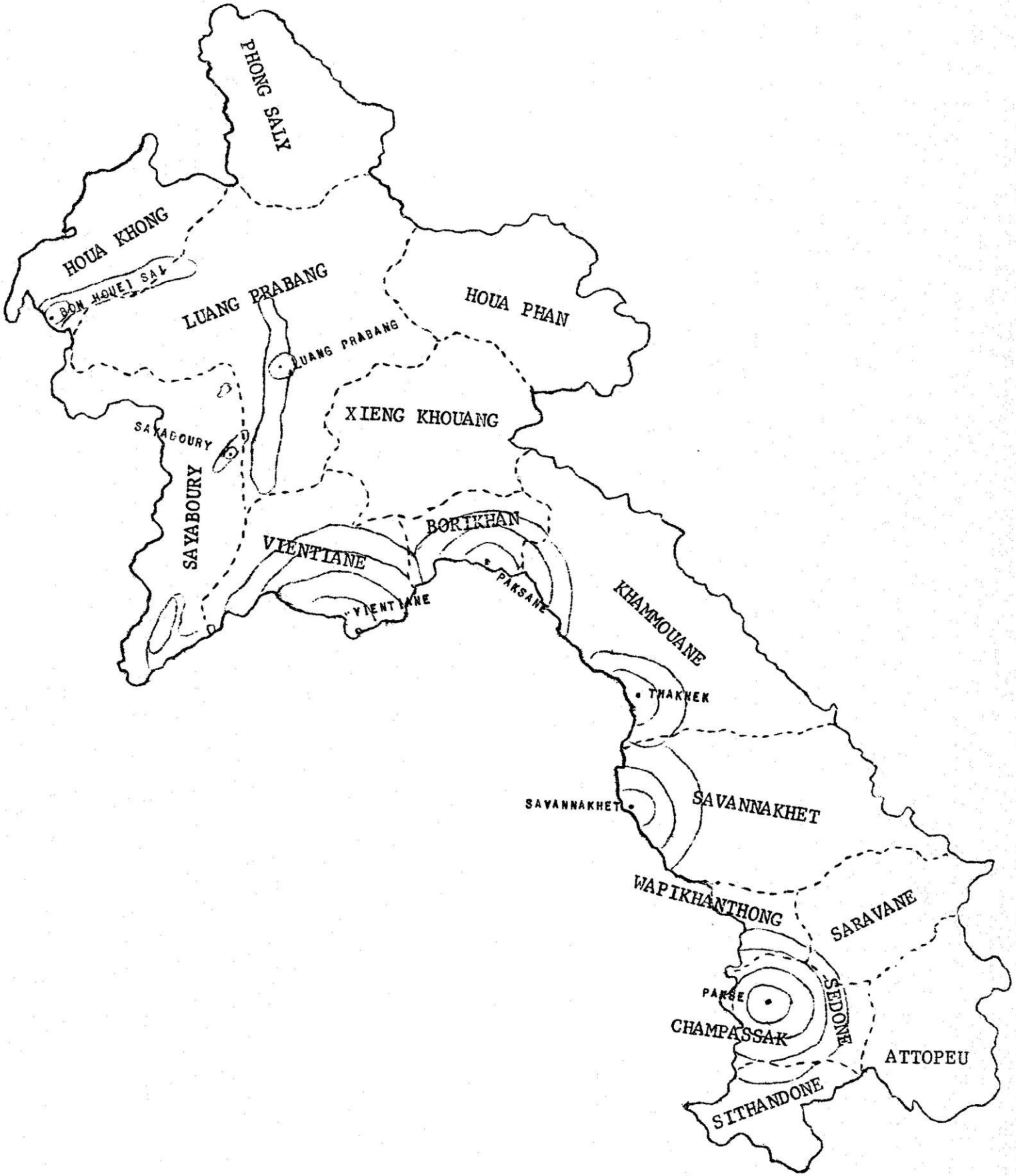


TABLE 18

MAJOR RICE MARKETS OF LAOS

City	Population Estimate a/
Vientiane	132,000
Savannakhet	36,000
Luang Prabang	22,000
Pakse	19,000
Thakhet	10,000

a/ Fact Sheet, Office of Program and Economic Affairs, USAID/Laos, October 1, 1967.

Transportation

Ox carts, elephants, and horses (in the mountains) have been the traditional modes of transportation for Laotian agriculture.

At present, there are three modern methods of transportation used within Laos. First, there are large barges which are generally limited to trafficking on the Mekong River. Small water craft can also travel on the Mekong and some of its tributaries. The capabilities of water transportation are subject to the seasonal changes in river level. Second, long distance truck transportation is available paralleling the Meking River from Vientiane south through Cambodia. Short haul trucking is also generally available in the major local market areas. Truck transportation is inhibited by the shortage of all weather roads in Laos. Finally, air transportation, which is widely used for people and high value commodities, is too expensive for normal agricultural use.

Tables 19 and 20 show some representative barge and truck rates for Laos. In Vientiane, a commercial truck including driver, but excluding fuel can be hired for local use for about 200,000 Kip ($400) per month.

Relationship With Northeast Thailand

The Mekong River, which is Laos' major transportation route, forms much of Laos' political boundary with Thailand and serves as an economic facility rather than a hindrance to cross river trade. This close tie to Northeast Thailand means that shifts in marketing structures on one side of the river may lead to offsetting responses from the

TABLE 19

TRUCK TRANSPORTATION RATES
KIP/TON

Vientiane to			
Long Haul		Short Haul	
Thakhet	6,050	Phone Hong (75 km.)	1,500
Savannakhet	7,250	Paksane	1,800
Pakse	13,200		

Source: ADO estimates, December, 1968.

TABLE 20

MEKONG RIVER BARGE COSTS BY SEASON, 1968
KIP/TON

From	Season	To: Vientiane	Sayaboury (Includes Truck)	Luang Prabang	Savannakhet	Pakse	Thakhet	Bon Houei Sai	Paksane
Vientiane	dry		17,000	19,800	4,500	4,500	4,000		2,500
	wet		10,000	13,500	3,600	4,000	3,500		2,000
Sayaboury (Includes Truck)	dry	10,000		8,000					
	wet	8,000		5,000					
Luang Prabang	dry							8,000	
	wet							5,000	
Savannakhet	dry	4,500				1,000			
	wet	3,600				(Truck)			
Pakse					3,000 (Truck)				
Thakhet	dry	4,000			1,000				
	wet	3,500							
Bon Houei Sai	dry			10,000					
	wet			5,000					
Paksane	dry	2,500			3,500				
	wet	2,000			2,000				

Source: Navigation Association, Vientiane; USAID; and ADO.

opposite bank. For example, a relatively high rice price in Laos could, and from an economic standpoint should, lead to massive imports of rice from Northeast Thailand. This relationship between Laos and Northeast Thailand needs to be considered by the makers of Laotian marketing policy.

Laos and World Markets

Being a landlocked country, Laos' international trade is dependent upon the goodwill of its neighbors. Traditionally, Laos has both imported and exported via the Mekong River or alternatively across the mountains to Hue. For political reasons, neither of these routes is dependable at the present time. Today, Laos' international trade route is through Thailand to Bangkok. Table 21 shows the transportation rates (identical for truck or train) between Bangkok and Vientiane. All imports originating outside of Thailand must be transported from Bangkok to Laos via the Thailand state transportation monopoly (ETO). It is believed that freight rates from Bangkok to the southern part of Laos are about the same.

Of ultimate importance is the fact that the relatively long distance from Laos to the sea means that overseas imports are more costly and that exports must be cheaper to compete on a world market. At the present time, the ETO monopoly in Thailand increases this differential even more than commercial trucking would. When the political stability of Southeast Asia increases, Laos will want to re-examine its marketing structure in general and its international trade routes in particular.

TABLE 21

TRANSPORTATION RATES - BANGKOK TO LAOS

	Baht/Ton[a/]	Kip/Ton[b/]	$/Ton
Commercial Truck	227.5	5550	11
State Monopoly	330.0	8000	16

a/ Conversion rate: 20.5 baht = one dollar.

b/ Conversion rate: 500 Kip = one dollar.

Source: Office of Supply Management, USAID, Vientiane, Laos.

Potential Markets in Laos

Rice Marketing in Laos

If Laos is able to increase its rice production (as is expected), an improved commercial rice marketing system will need to be developed.

At present, three critical factors inhibit more efficient rice marketing. These are transportation, milling, and hidden socio-political costs. Improvement in any of these areas could, conceivably, in the short-run, both increase the paddy price to farmers and reduce the milled rice price to the consumer.[16/]

ADO is already involved in three separate rice marketing (buying) programs. First, as a part of the USAID/RLG improved rice seed distribution program, ADO has provided an assured market for farmers participating in this program. Second, ADO has forward contracted with farmers for 1968 wet season rice to fulfill contracts with USAID. Third, ADO has undertaken a Vientiane Plain Rice Price Stabilization Program.[17/]

Export Marketing of Laotian Rice

When talking of domestic rice in Laos, one is speaking almost exclusively of glutinous or sticky rice. In Laos, the market for non-glutinous rice is limited primarily to Chinese-Laotians and Vietnamese. Outside of Laos and Northeast Thailand, non-glutinous

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16/ See Appendix D for an economic explanation of the long-run effect of changes in rice technology.

17/ See Appendix E for a description and evaluation of this program.

rice predominates. Thus, the world marketing of Laotian rice will mean the production and export of non-glutinous rice.

The long-run success of any export marketing program depends upon Laotian production costs relative to the world's major exporters (currently for rice, Thailand and the United States). At the present time, Laos has neither the productive technological capability nor the marketing system necessary to compete on the world market. In the long-run, as Laos adopts modern technology, there appears to be no physical barrier to more efficient rice production. A more efficient marketing system can undoubtedly be developed, but the problems and cost of transporting both inputs into Laos and exports out of Laos will remain.

For the near future, if Laos is to become an exporter of rice on the world market, ADO will have to spearhead the project. In order to effectively compete on the world market, Laos will need to solve problems of production techniques, local transportation, storage, milling quality and quantity, and hidden socio-political costs. A final problem of unknown magnitude is Thailand's reaction to Laos entering the world rice market. Since Laotian rice exports would have to go through Thailand, the government of Thailand can probably, if it wants, thwart any Laotian rice marketing program.

Non-Rice Marketing of Agricultural Products in Laos

As incomes increase and rice production expands, it is to be expected that the production of agricultural products other than rice

will rise more than proportionally.[18/] Increases in livestock, fruit, and vegetable production should help to meet this increased demand. Marketing of these products will probably have to remain intra-provincial in the near future because of transportation and socio-political problems. For example, at present large animal livestock marketing in the Vientiane area is inhibited by a meat packer monopoly.

The Bolivens Plateau region in South Central Laos has a long-range potential for producing a variety of crops including tea and coffee. Coffee from the Bolivens is presently exported (primarily to Singapore) outside of the International Coffee Agreement. There is a long-range need to develop a better marketing arrangement for coffee than now exists.

ADO's Role in Developing the Marketing System in Laos

ADO has become involved with commodity marketing in a backdoor fashion. The main thrust of ADO's program to develop Laotian agriculture has been to encourage the introduction of modern inputs and technology. As ADO's input projects have succeeded, ADO has had to help assure farmers of an efficient marketing system for their excess produce. Agricultural development certainly involves market development and ADO appears to be in a position to encourage a restructuring of the traditional marketing system.

18/ This results from a two-pronged income and substitution effect. First, as incomes rise, people will spend more money on higher cost products such as fruits, vegetables, and meat (income effect). Second, as rice becomes more plentiful, consumers will substitute more bread, noodles, meat, etc. into their diet (substitution effect).

The physical separation (because of transportation costs and security) of markets in Laos provides an unique opportunity for ADO to develop its marketing policies in an orderly fashion. Programs can be started in one area and then expanded into other sections of the country as they prove themselves and as ADO's resources permit.

As ADO begins to influence the marketing structure, there will be negative reactions from those who stand to lose from changes in the status quo. More specifically, if ADO cuts the hidden costs in marketing, people who have made their living in this way can be expected to react, probably by political means although the possibility of physical action must not be overlooked. ADO will also want to consider potential means of incorporating these forces into the marketing structure on a formal and functional (productive) basis.

CHAPTER V

PROPOSED ORGANIZATION FOR ADO -- 1969-1970

Framework

Introduction

ADO was established in 1965 to administer a wide variety of activities that were necessary to supplement what could be accomplished by the RLG and USAID. The present priority USAID goals for the agricultural development of Laos are 1) self-sufficiency in rice production by 1970, and 2) a 200,000 metric ton rice surplus (beyond consumption needs) by 1972. ADO was planned as a flexible organization that would operate in a professional businesslike manner to implement various agricultural development programs.

The organizational structure of ADO should be designed so that program goals can be reached in the most efficient manner possible. The proposed organizational chart for ADO -- 1969-1970 was prepared in line with ADO's present program activities, RLG and USAID goals, and Laotian agricultural needs as examined in Chapters II, III, and IV. In addition to considering the objectives of agricultural development in Laos, the proposed organization was designed with an eye to the practical limitations of finances, Laotian and American staff capabilities, and policy and operational control.

Financial Evaluation

One method of evaluating the progress of an organization over a period of years is to examine balance sheet and income statement changes.

In the case of ADO, any financial evaluation must be conducted in a very subjective manner since 1) there are no established criteria by which the performance of an organization as unique as ADO can be measured, 2) ADO has been engaged in some activities that are not expected to return a profit (subsidized sale of fertilizers and other inputs), and 3) many of the benefits from ADO's activities are of a non-monetary nature (changes in production methods, farmer attitudes, etc.).

From July, 1965 through June, 1968, USAID provided ADO with commodities and Kip valued at 476,484,256 Kip as shown in Table 22. The Laotian Government has not contributed to the capitalization of ADO. The ADO balance sheet for June 30, 1968 shows the capitalization contribution from USAID as 415,120,224 Kip. Thus, 87 percent of USAID's total contribution to ADO remains for ADO's use as shown in Table 23. No value judgments concerning ADO's performance can be made directly from these data.

Expenditures for American salaries are maintained in a separate budget and are not charged to ADO's general budget. In addition to American salaries, the total USAID effort supplied to ADO and not included in ADO's budget includes some transportation services, some warehouse construction, and both technical and field assistance from various USAID divisions. The above data indicate the degree of contribution and support that ADO received from USAID. ADO does not regularly prepare a profit and loss (operating) statement either monthly or annually.

TABLE 22

NET CONTRIBUTIONS BY USAID TO ADO
IN U.S. DOLLARS AND KIP, BY FISCAL YEARS, 1966-1968 a/

Fiscal Years	Dollar Assistance Converted to Kip b/	Assistance in Kip	Total Kip
1966	17,365,000	69,614,880	86,979,880
1967	248,782,000	14,215,740	262,997,740
1968	104,661,000	21,845,636	126,506,636
Total Contribution	370,808,000 c/	105,676,256	476,484,256

a/ Actual expenditures by fiscal years.

b/ Conversion rate, one dollar = 500 Kip.

c/ The dollar assistance excluding salaries of direct-hire employees was as follows: 1966, $34,730; 1967, $497,564; and 1968, $209,322 or a total of $741,616 during the three year period.

Source: Records from the Office of Controller, USAID, Vientiane, Laos, December, 1968.

TABLE 23

CHANGE IN ADO CAPITALIZATION, USAID SHARE, FISCAL YEARS 1966-1968

Contribution of USAID to ADO Fiscal Years 1966-1968	476,484,256 Kip
Contribution of USAID as shown on ADO Balance Sheet, June 30, 1968 a/	415,120,224 Kip
Difference	61,364,032 Kip
Percent Change in Capitalization	-13

a/ British contributions are carried on the ADO Balance Sheet at full value.

Source: Records from the Office of the Controller, USAID, Vientiane, Laos and ADO Balance Sheet.

Organizational Problems

The following organizational problems were considered in designing the proposed organization for ADO, 1969-1970.

1) ADO policymaking has had limited Laotian representation and participation.
2) ADO is viewed as an exclusively American organization by many individuals in the RLG and by many Laotian farmers and businessmen.
3) Laotian participation in the management of ADO at the Central and Provincial Offices has been limited.
4) ADO has suffered from a lack of management continuity.
5) ADO field personnel have received little supervision or support.
6) Effective and standard reporting procedures from ADO to the Co-Directors have not been established.

Operational Problems

The following operational problems influenced the proposed organization for ADO, 1969-1970.

1) Although ADO has been operational since 1965, adequate audits have not been made on a regular basis.
2) The Laotians and the Americans on ADO's staff have not received sufficient formal training.
3) Inventory control at the provincial level has been insufficient.
4) Management has been reluctant to write off bad debts.
5) Distribution of inputs among the various provinces has been inefficient (example, fertilizer excess in the North and deficiency in the South for the 1968 wet season).

6) ADO has undertaken too many programs to be adequately conducted and supervised with the present level of staffing.

7) ADO has not had an adequate formal evaluation of past programs (why some failed and why others were successful).

8) ADO, USAID, and the RLG have generally failed to recognize regional differences in establishing, implementing, and evaluating ADO programs.

Each of these operational limitations is a factor that needs to be considered by ADO management. In general, these problems do not reflect upon the over-all job that has been done by the limited ADO staff. One major and uncontrollable factor that affects the ADO program is the loss of security in areas where ADO has warehouses, loans, or other operations.

Organizational Outline, ADO -- 1969-1970

Organizational Chart

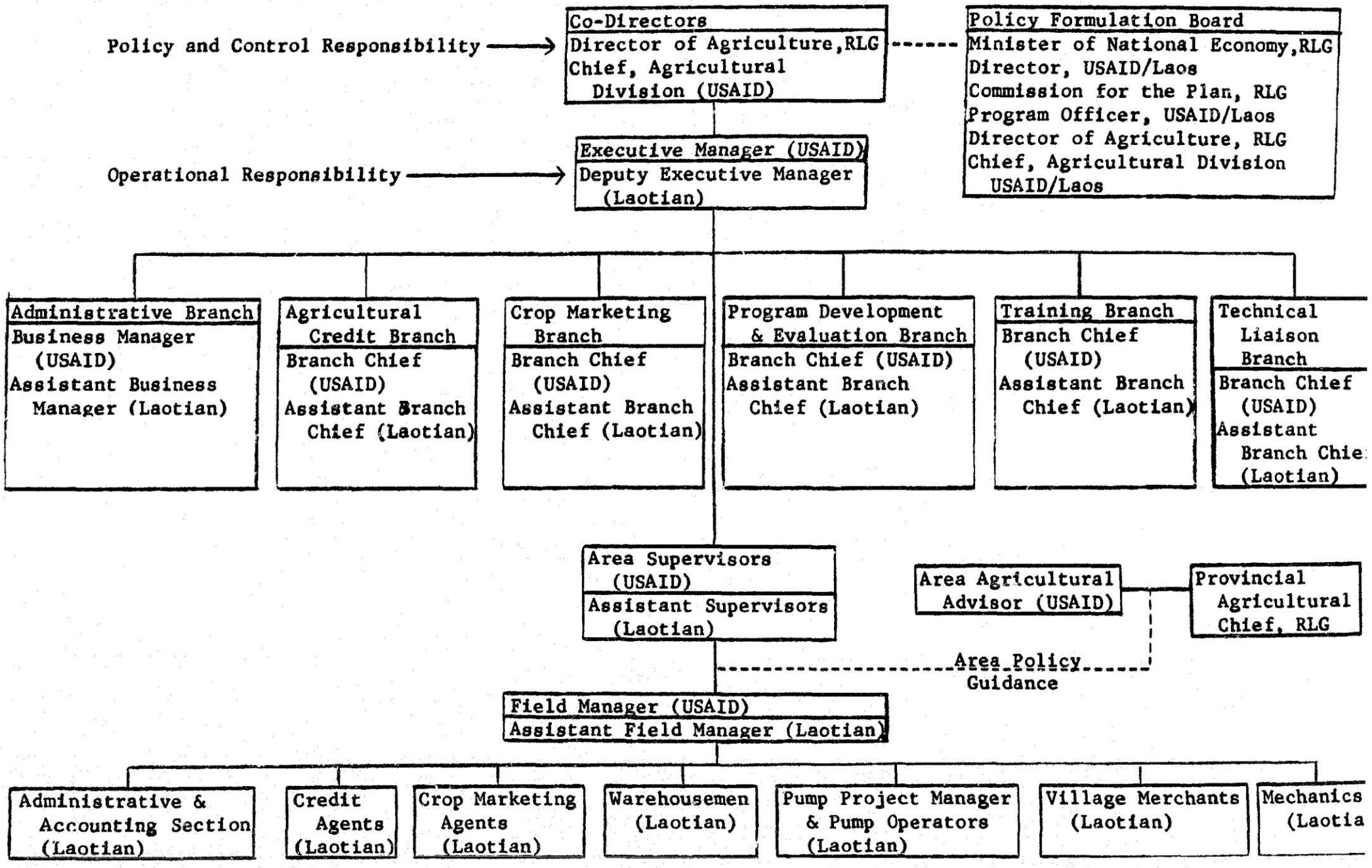
The proposed organizational chart for ADO, 1969-1970 is shown in Figure 15.

Organizational Responsibilities

Policy Formulation Board -- The Policy Formulation Board is proposed 1) to formalize already existing informal policymaking procedures, 2) to increase RLG policy participation, and 3) to integrate ADO's program into the over-all development plans of Laos.

FIGURE 15

PROPOSED ORGANIZATIONAL CHART, ADO -- 1969-1970



Since agriculture plays such a large role in the development of Laos and since ADO represents a major portion of the agricultural program, high level participation is needed in forming over-all ADO policy. It is expected that the Policy Formulation Board will meet regularly once a month.

Co-Directors -- The Co-Directors are to be 1) members of the Policy Formulation Board, 2) responsible for implementing ADO policy, and 3) responsible for ADO's organization, direction, and control. As long as USAID is the major contributor of capital and management to ADO, it is recognized that the USAID Co-Director will exercise primary leadership for the ADO program.

Executive Manager -- The Executive Manager is to be appointed by and responsible to the Co-Directors. The Co-Directors will delegate operational responsibility for ADO to the Executive Manager. It should be clear that operational flexibility is one of the strong points of the ADO program.

Administrative Branch -- The Administrative Branch is to be responsible for accounting, personnel, payroll, supply management, inventory control, and administration. The functions of the Administrative Branch call for particular attention to assure the efficient and smooth operation of ADO. Only to the extent that these "housekeeping" details are adequately performed can ADO concentrate on and expand its development projects.

Agricultural Credit Branch -- The Agricultural Credit Branch is to be responsible for designing credit projects in line with the needs of Laotian agriculture and of the various areas in Laos. The Credit

Branch will advise and assist the field offices in their implementation of various credit projects. The Credit Branch will further cooperate with the Training Branch and the field offices in the training of Laotian Credit Agents.

Crop Marketing Branch -- The Crop Marketing Branch is to be responsible for planning and organizing marketing projects. This Branch will advise and assist with marketing programs in the field as well as coordinate ADO marketing operations between the various markets (areas) of Laos. The potential scope of activities within which the Marketing Branch can operate is quite large. The actual activities of the Marketing Branch will depend upon an evaluation of the marketing needs in each area of Laos.

Program Development and Evaluation Branch -- The responsibility of the Program Development and Evaluation Branch is 1) to help identify the needs of Laotian agriculture to which ADO can address itself; 2) to help other Branches to plan new ADO programs from an organizational, economic, political, and social viewpoint; 3) to assist the Executive Manager in a regular and continuing assessment of current projects; and 4) to advise the Executive Manager on policy and long-term planning for ADO.

Training Branch -- The Training Branch is to be responsible for the developing and administering of a formal training program for ADO personnel, both Laotian and American. No organization can be better than its personnel. Training and education are functions that tend to be slighted in an operationally oriented organization such as ADO.

Training and education of Laotian personnel must be accomplished if ADO is to 1) operate efficiently, 2) expand its program, and 3) have continuity beyond an American presence.

Technical Liaison Branch -- The function of the Technical Liaison Branch is to see that ADO receives the technical advice necessary to the successful development of operational projects. ADO is not to develop its own technical staff, but rather the Technical Liaison Branch is to coordinate the professional and technical resources of USAID and the RLG with the needs of ADO. The Technical Liaison Branch will need to keep abreast of relevant research outside of Laos as well as with the RLG/USAID Experiment Station, Crops and Soils, and other Branches of USAID and the RLG.

Area Supervisors -- The Area Supervisor is to hold line authority and responsibility for the Field Managers and field operations in his area. The Area Supervisor in addition to supervising operations and personnel will 1) contribute to the regional analysis of Laotian agricultural needs, 2) assist in the planning and organizing for regional implementation of ADO projects, 3) participate in the evaluation of ADO projects by region, 4) help provide orientation and training for Field Managers in his area.

Field Manager -- The Field Manager is to be responsible for all ADO operations, all ADO personnel, and all ADO material in his geographical sector. The Field Manager is the key operational arm of ADO. Field Managers are not to be expected to provide the major training function for Laotian field personnel.

Field Office -- The proposed Field Office organization is presented as a guideline that will need to be revised and adopted to local and area conditions by the Field Manager and Area Supervisor. As the ADO program expands, greater attention will need to be given to the organization and management of Field Offices.

Implementation

It is expected that the proposed organization for ADO, 1969-1970 will be gradually put into effect 1) as personnel are recruited, and 2) as ADO's program expands. For the present, with only six Field Offices, two Area Supervisors may well suffice. As the number of Field Offices expands, the number of Supervisors might rise to four. ADO will need to have some organizational flexibility in order to retain the crucial operational flexibility in the ADO program.

Staffing

American -- In an organization as unique as ADO, the prime attributes of American personnel must be 1) an ability to understand and work with the Laotian people; 2) an ability to adopt modern techniques, institutions, and experience to the peculiar needs of the people of Laos; and 3) adequate training prior to joining ADO. Every organization must have both a downward and an upward flow of information and ideas. When the ultimate purpose of an organization is to effect change in people's attitudes and ways of living then this flow becomes critical.

The unique contribution of American personnel to ADO and Laotian agriculture is in the realm of management and organization (entrepreneurship). It is this factor which allows modern capital and technology to be used effectively. Because the environment in Laos is not like that of America (or Thailand, etc.), ADO personnel must be able to create or adopt solutions that will answer the unique needs of Laos. If American personnel are to provide the entrepreneurial function for ADO and Laos, they must have had adequate training or experience in management and organization as well as in their specific area of responsibility.

In addition to the over-all requirements for American personnel, some general guidelines can be offered for filling specific positions. The Executive Manager should have business training and management experience. The Business Manager should be trained in business methods. Ideally, these men might have a Master of Business Administration degree.

The Chief of the Agricultural Credit Branch might best be trained in economics and finance. The heads of the Crop Marketing Branch and the Program Development and Evaluation Branch might ideally have a background in economics.

The Chief of the Training Branch could well be a trained educator, but a real commitment to the training function is more important. The Branch Chief for Technical Liaison should probably be trained in one of the agricultural sciences.

Laotian -- ADO has existed for three years without having taken any substantive step towards including Laotians in its management structure. The proposed organizational chart for ADO -- 1969-1970 includes Laotian personnel as line assistants in each management position. The personnel

in these positions are not counterparts. What is eventually envisioned is an upward movement of Laotians, as they develop the necessary experience and confidence, into the principal management positions. Americans will continue to serve as assistants or principals where qualified Laotians are not available. The requirements for Laotian management personnel will be similar to the requirements for American personnel.

If ADO cannot find enough adequately trained Laotians to fill the necessary management positions, then ADO must undertake to train Laotians for management responsibility. This means that ADO will need to sponsor the long-term foreign training of selected potential Laotian management personnel. If ADO wants to eventually have Laotian management, then ADO will have to develop Laotian managerial capabilities.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

Summary

The Problem

The economic development process is always complex, but the task which faces the RLG and USAID is particularly challenging and frustrating. The prospect for rapid economic development in Laos is not favorable.

The traditional indicators of the level of economic development are:

1) per capita income;
2) a commercial agricultural economy;
3) balance of international trade;
4) balance of payments;
5) availability of trained personnel;
6) adequacy of banking system;
7) transportation facilities; and
8) educational facilities.

Laos has a problem in each of these areas. Other factors inhibiting economic development in Laos include: 1) the security and related refugee problems, 2) the difficulty and high cost of marketing exports, and 3) ethnic and cultural differences within Laos.

The Goals of Agricultural Development in Laos

Laos is basically a subsistence agricultural economy except in the Pakse area where surplus rice has been produced in recent

years. With an eight to ten percent increase in production per hectare, the present estimated 700,000 hectares of paddy rice and 300,000 hectares of Hai (upland) rice would be more than sufficient to meet the consumption needs of the Laotian population.

The RLG and USAID have given agriculture top priority in Laotian developmental efforts with a major emphasis upon increasing rice production. The present goals for agricultural development are self-sufficiency in rice production by 1970 and a 200,000 metric ton surplus by 1972.

The first goal of self-sufficiency in rice production for Laos appears to be both technically feasible and economically practical. The second goal of producing a 20 percent annual rice surplus (beyond domestic consumption) needs to be re-evaluated in depth. A detailed examination of the "200,000 ton" goal is beyond the scope of this report. The present evaluation of ADO and the recommendations in the following section do point to several problems that may affect the over-all practicality of sustained and substantial surplus rice production in Laos.

ADO's Role in the Agricultural Development of Laos

ADO was established in 1965 as a flexible organization to administer a wide variety of activities that were necessary to supplement what could be accomplished by the RLG and USAID. ADO was expected to operate in a professional businesslike manner and to train Laotians to eventually take over key managerial roles in the organization.

The initial efforts of ADO were concerned with seed multiplication and distribution. In a natural progression, ADO then became involved in: the sale of improved agricultural inputs (fertilizer, herbicides, tools, etc.); the establishment of an agricultural credit system; and the improvement of the existing marketing system.

ADO's activities have expanded rapidly in the past year and a half. With its present level of staffing and its present organizational goals, ADO has reached a plateau in its operations. The objective of this evaluation is to assist ADO in planning its role in the further development of Laotian agriculture.

Recommendations

Agricultural Production

1. Seed -- The continued development of glutinous rice varieties suited to local conditions throughout the various parts of Laos is a necessity. The continued distribution of vegetable seed by ADO deserves encouragement.
2. Fertilizer and Insecticides -- Additional field research is needed to develop specific guidelines for fertilizer and insecticide use in Laos. Because of the inexperience of Laotian farmers in using modern technology, improved packaging and improved instructional methods are needed for both fertilizers and insecticides to insure the effective and safe use of these materials.
3. Water -- A change in emphasis from creating large pump groups to meeting the expanding demand for small pumps is indicated. The distribution of barbed wire, hand tools, and sprayers deserves continued support.

4. Mechanical Power -- The demand for and the practicality of small hand tractors in Laos needs to be determined. Large tractor use should be expanded only as it proves to be economically feasible.
5. Double Cropping -- Primarily because of the tremendous number of cultural problems and the large financial risks involved in introducing double cropping, the upgrading of wet season rice production would most efficiently meet Laotian rice needs while, at the same time, increase the well-being of the largest possible number of Laotian farmers.
6. Alternate Crops -- As rice production in Laos expands to meet local needs, there should be a parallel development of other crops that will improve both the Laotian diet and, when marketed, the Laotian farmer's economic well-being. It is to be expected that ADO will play a role in this broadening of Laotian agriculture.

Agricultural Credit

1. Emphasize the present credit projects for short-term inputs (fertilizer, insecticides, herbicides, and small tools). These inputs represent the most effective and efficient means of expanding farm output.
2. Develop a method of credit analysis for loan application that will be suited to the needs of Laos. For those farmers that have borrowed from ADO in the past, evaluate their repayment records. For new applicants, estimate their repayment ability.
3. Continue, in the short-run, to provide credit in kind and to accept loan repayment in paddy. Prepare an educational program to explain credit to borrowers in terms they can understand.

The long-range objective is to obtain interest and loan repayment in Kip. Repayment in Kip will indirectly encourage the development of commercial marketing.

4. Establish approximately 20 credit groups in the Vientiane Plain and the Pakse area in 1969. This would be a pilot project to develop the necessary techniques for supplying credit to groups of Laotian farmers rather than to individuals. This pilot project will require effective planning, a strong educational and organizational program, adequate supervision, and extensive evaluation to ensure a meaningful trial. Members must completely understand both group and individual responsibilities and obligations.

5. Work closely in the Nam Tan irrigation project with area USAID personnel and the Provincial RLG staff on a program of credit education for the farmers who will be settled in the Nam Tan irrigation project.

6. Shift credit records to an automatic data processing system. The success of automatic data processing will hing upon complete and accurate reporting by credit personnel in the field. An adequate training program will have to be conducted for field personnel to ensure their capabilities and understanding of loan processing and reporting procedures.

7. Evaluate the possibility of ADO's buying fertilizer from commercial chemical companies on credit in 1970. If this project is feasible, it would provide additional private capital for the agricultural development of Laos. ADO should continue to market fertilizer until a commercial firm determines that the market is sufficiently large and well developed to warrant its direct entry.

Agricultural Marketing

ADO needs to continue to encourage the development of an efficient commercial agricultural marketing system in Laos. ADO should confine itself to acting as a catalyst rather than assuming complete marketing responsibilities. Neither ADO nor any other single organization, private or government, can meet all of the many and varied agricultural marketing needs of Laos in a manner consistent with accepted social, political, economic, and ethical principles.

Before ADO can effectively promote agricultural market development, an identification and evaluation of functional bottlenecks and a determination of ADO's ability to affect these problem areas will be required. Because only limited information is available concerning the indigenous marketing system in Laos, it is impossible to outline a specific marketing plan for ADO.

The following marketing functions will be of concern to ADO in its efforts to encourage the development of a commercial marketing system. The short comments are by no means exhaustive, but rather examples of the direction ADO has taken or may take in affecting marketing in Laos.

1. Buying and Selling -- The Vientiane Plain Rice Program has generated data that reveals hidden buying costs amounting to 20 percent or more of the actual on the farm paddy price. ADO should not attempt to operate a rice price support program.
2. Storage -- ADO has both constructed its own warehouses and encouraged others to develop or expand their storage facilities. An evaluation of on-the-farm rice storage is needed.

3. Transportation -- In Laos, this marketing function is the one least open to improvement by ADO for both physical and political reasons. Transportation will define the boundary of market development both within Laos and in international trade.

4. Processing -- ADO has contracted with private enterprise to improve and expand rice milling in selected areas. The results of these pilot efforts should be carefully analyzed.

5. Standardization -- How many kilograms in a mong (kerosene can), 14 or 16? As commercial rice sales increase, the grading of paddy may become necessary.

6. Financing -- ADO is currently financing farmer marketing with cash advances on an experimental basis. ADO has also financed at least one rice miller.

7. Risk-Bearing -- Marketing in Laos has high risks especially because of security problems and hidden socio-political forces. ADO with its resources (large relative to indigenous institutions) may wish to assume reasonable market risks. ADO must not overcommit itself. ADO's position vis-a-vis other Laotian marketing institutions is not the same as ADO's strength relative to the entire marketing system.

8. Market Intelligence -- ADO, with the support of USAID and the RLG, is in an excellent position to both collect and disseminate useful marketing intelligence. ADO has both collected rice prices and used radio to publish price information. An evaluation of market intelligence needs could be undertaken by ADO.

In changing the market structure of Laos, ADO will work against entrenched socio-political forces that will not welcome reform. ADO can use its economic power to improve market performance either through direct intervention or by the implicit threat of competition.

ADO will need to maintain flexibility in its approach to marketing problems. As a marketing force, ADO will have to react quickly and effectively to changes in the marketing environment.

ADO Organization

1. Recommendations for the organizational structure of ADO are given in Chapter V, pages 85-89.
2. Encourage the Laotian Government to expand its involvement in ADO by contributing capital equal to ten percent of the USAID contribution.
3. Expand ADO's contact and cooperation with lower level RLG personnel as is consistent with ADO's operational objectives.
4. Do not develop third country participation in ADO except on a project basis. To be effective, ADO policy, management, and operations must remain under USAID and RLG control until Laotian resources, both personnel and capital, become dominant.
5. Require the Executive Manager to deliver a monthly report (oral and written) of ADO's operations and management activities to the Co-Directors.
6. Develop an adequate and regular system for auditing ADO.
7. Provide ADO with management continuity.

ADO Operations

1. Develop adequate training programs for the specific needs of Laotian field employees.
2. Increase the effectiveness of inventory control in the Field Offices.
3. Develop closer working relationships with RLG provincial agricultural personnel to ensure that farmers receive adequate training in the use of improved inputs.
4. Plan input sales, credit, and marketing programs and estimate market demand on an area basis.
5. Market improved inputs on an economic basis (cost plus overhead and profit) whenever possible.
6. Expand and develop indigenous retailers (village-merchants) and wholesalers. ADO will need to train, support, and supervise the commercial activities of these businessmen.
7. Encourage private firms to take over the importation of selected inputs as soon as economically viable markets develop.
8. Study past due loans, by areas and types of loans, at least one time per year. Develop procedures for writing off past due loans when the collection effort is not successful.

APPENDIX A

ECONOMIC ORIENTATION OF LAOTIAN RICE PRODUCTION

The analysis used in Table 11 in the text assumes that producers use modern techniques and hire all inputs. In fact, for his wet season crop, the typical Laotian rice farmer generally uses no modern or "bought" technical inputs and uses only family labor (perhaps pooled with neighboring family units).

Wet season rice is a non-monetary crop to the extent that producers have no money cost and that they eat rather than sell their output. Dry season rice, on the other hand, does require purchased inputs and, since in general there will be enough wet season rice for consumption, does require selling the product. The reorientation involved in adding a second crop of rice is quite extensive for the typical subsistence producer.

Because the wet season rice crop is a non-monetary one and because it is necessary for survival, the estimation of wet season costs and returns in Table 11 has little relevance to the actual decisions of subsistence farmers. Dry season estimates of costs and returns, on the other hand, are probably at least representative of a rice producer's situation. Although producers can reduce their dry season monetary costs by using their own labor, this is at least partially offset by a need to purchase goods that the farmer previously obtained or made for himself during the dry season.

Table 11 further assumes the existence of a market for the producers' dry season rice. At present, Laos does not appear to

have an indigenous marketing system capable of handling large amounts of dry season rice. A large increase in the supply of rice might lead to a drop in the price of paddy rice that would tend to discourage further dry season production.

APPENDIX B

THEORETICAL BASIS FOR EMPHASIZING AGRICULTURAL CREDIT IN ECONOMIC DEVELOPMENT

The economic development process involves interrelated variables. Economic development must be concerned with the non-farm sector because as physical output changes, the technical and institutional environment changes as well. Too often in the past, economists have attempted to simplify their explanation of the economic development process by calling attention to a single limiting factor and then trying to remove this restraint as if it existed in a vacuum. The result has been development programs to solve the educational problem, the production problem, the marketing problem, the credit problem, or the cooperative problem. This approach has not been very successful as the interrelationship of variables is ignored.

Christensen has pointed out that historical records clearly show that no country has moved from chronic stagnation into the take off stage of economic development without first achieving a substantial gain in agricultural productivity.[1/] Christensen has further observed in analyzing the process of economic development that:

1) the technical skill and managerial ability of the human factor must be improved;
2) the agricultural sector must generally shift from subsistence to market orientation; and
3) capital must be used where marginal returns are largest.

1/ Raymond P. Christensen, "Economic Progress of Agriculture in the Less Developed Countries," paper presented before the Conference on the Economic Development of Agriculture, Center for Agricultural and Economic Development, Iowa State University, November 11, 1964.

Gadsby supports Christensen's thesis by pointing out that a shortage of capital is the feature that most distinguishes advanced countries from less developed ones. The role of capital in making possible higher total production and higher income per farm must be recognized. At the same time, it must also be recognized that capital alone will not automatically assure economic development.

Nurkse has presented one of the first arguments for capital formation in less developed countries. In explaining the vicious circle of poverty, he said, "There is a small capacity to save resulting from a low level of real income. This low real income is a reflection of low productivity, which in turn is due largely to the lack of capital. This lack of capital is the result of the small capacity to save."[2/] How is this circle to be broken?

Capital formation is the social process of investment by entrepreneurs or by government and the parallel development of a capacity to save and reinvest. It is through the process of capital formation that the circle of subsistence is broken.

Once a shortage of capital has been identified, many questions must still be answered before an effective capital and credit program can be designed to promote capital formation. These questions include:

1) what is the demand for new capital?

2) to which sectors and enterprises should new capital be added?

3) what form should new capital take?

4) what will be the productivity of new capital used?

2/ Ragnar Nurkse, Problems of Capital Formation in Underdeveloped Countries, Oxford University Press, New York, New York, 1963, page 5.

5) when should new capital be added?

6) where should this new capital be obtained?

7) how is capital to be transferred between sectors of the economy?

8) what are the costs of introducing new capital?

In the past, this shortage of capital in less developed countries has led almost automatically to the establishment of agricultural credit institutions. Agricultural credit can be a source of capital for farmers and a powerful force for development if loans are used to inject the appropriate capital inputs into agriculture. These inputs should not be otherwise available to farmers through their own financial or physical resources. The borrowing farmer must also know how to effectively utilize these more productive inputs that reflect new technology.

It should be clear that agricultural credit does not automatically bring about an increase in agricultural production. The transformation from traditional to commercial agriculture depends upon changes in the non-production environment as well as changes on the farm. The injection of capital through credit must be accompanied by an effective demand for production at prices that are profitable to the farmer. Then savings from increased farm income can be reinvested in productive enterprises. This system makes capital formation self-sustaining.

In the long-run, domestic savings will have to provide the major share of the capital accumulated within a country. It is unrealistic to expect external lenders to inject capital into an economy indefinitely.

In summary, capital formation is one of the necessities of economic development. Agriculture presents the main opportunity for increasing economic well-being in most of the world today. Agricultural credit, effectively developed and administered, can contribute to capital formation. Capital formation along with associate environmental changes should lead to increased levels of living.

APPENDIX C

CRITERIA FOR AN EFFECTIVE AGRICULTURAL CREDIT INSTITUTION

The functions of an agricultural credit institution that is not directly involved with input sales or with the purchase of agricultural production are as follows:

1) to mobilize domestic savings. Also, the agricultural credit institution may obtain capital from foreign sources for investment in domestic agriculture;
2) to allocate loan funds among prospective farm operators. This implies the analysis of loan requests as to eligibility and productiveness;
3) to service, administer, and control loans; and
4) to collect and reallocate loan funds to qualified borrowers.

The establishment of an agricultural credit institution and the disbursement of loan funds to farm producers will not automatically contribute to the economic development of a country. For an agricultural credit institution to be effective and for economic development to be advanced, it is necessary that:

1) loan funds be used to inject improved and more productive capital inputs into agricultural production;
2) increased agricultural production be marketed at prices high enough to cover the costs of production, to give farm producers sufficient incentive to incur the added risk of using credit, and to produce sufficient income to repay the loan; and
3) farm producers be <u>willing to repay</u> their loans so that these loan funds can be relent and continue the process of capital formation.

APPENDIX D

ECONOMIC EFFECT OF NEW PRODUCTION TECHNIQUES

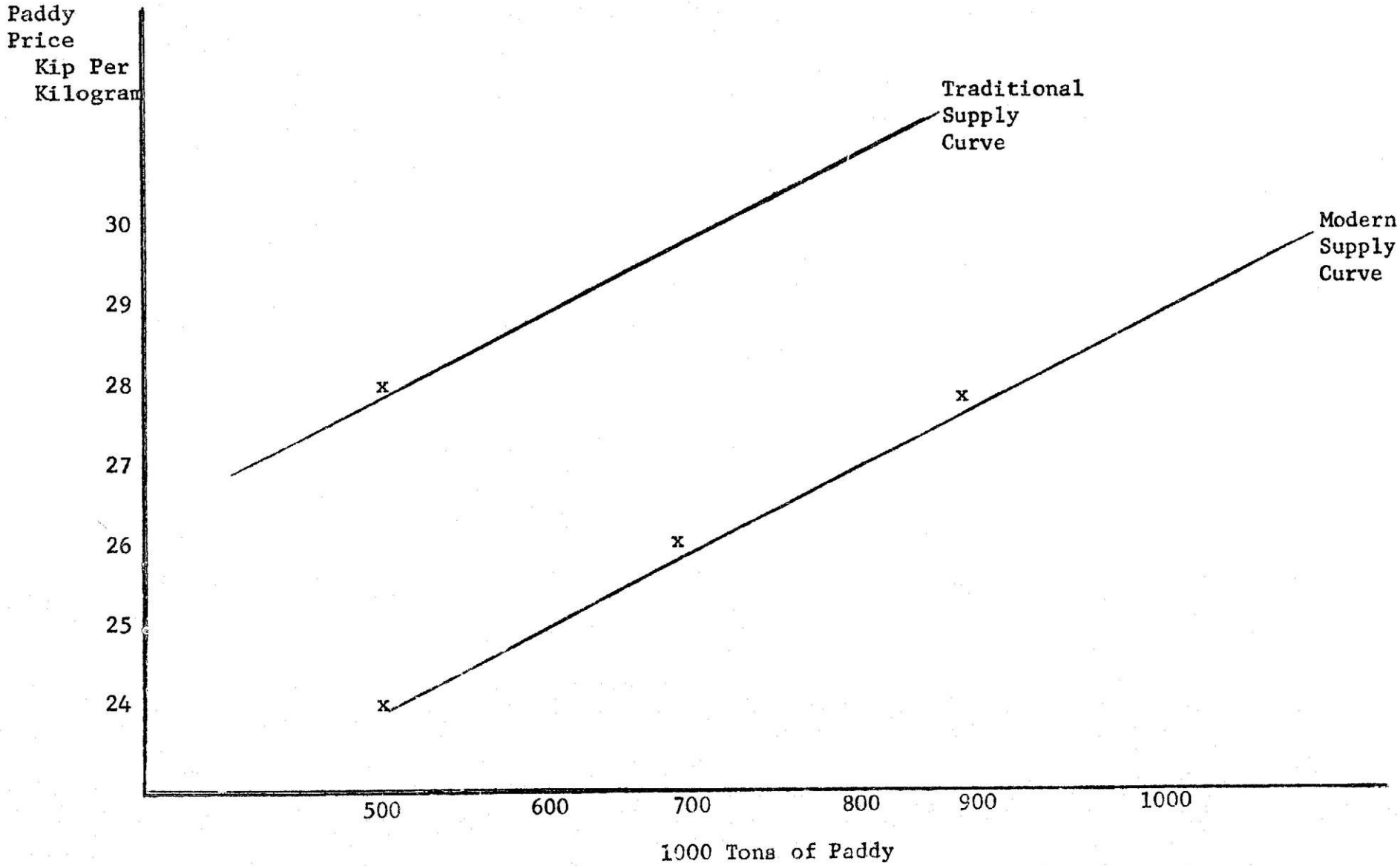
Figure 1 presents a graphic economic example of the long-range outlook for the Laotian paddy market. As farmers adopt new technology (which allows for greatly expanded production), the amount of rice that farmers will be willing to produce at any given price will increase dramatically as is shown by the shift from the traditional to the modern supply curve in Figure 1. Assuming a traditional situation with a paddy price of 28 Kip and annual production of 500,000 tons, three things could occur when new production practices take hold. First, if the price of paddy would remain at 28 Kip, production would almost double to 900,000 tons. Second, paddy prices might drop to 24 Kip leaving production stable at 500,000 tons. Third, and in fact what will probably happen, is that both price will drop and production increase (perhaps to 26 Kip and 700,000 tons).

In the long-run, the introduction of new technology generally means lower prices to the consumer. For farmers as a whole, the economic benefits depend upon the costs of this new technology, the amount of increased production that is sold, and the size of the drop in paddy prices. If the increase in paddy production can be sold for more than 1) the cost of the new inputs, and 2) the drop in paddy prices times the old amount sold, then farmers will increase their income by adopting the new technology.

Individual farmers who fail to adopt new technology will suffer reduced incomes to the extent of the price drop times the amount of rice they sell. But the true subsistence farmer can remain aloof from improved technology. Since the subsistence farmer neither buys inputs nor sells paddy, he is effectively insulated from outside forces.

FIGURE 1

EFFECT OF NEW TECHNOLOGY ON RICE PRODUCTION --
SHIFT IN THE SUPPLY CURVE



APPENDIX E

SHORT EVALUATION OF ADO'S PROPOSED RICE PRICE STABILIZATION PROGRAM FOR THE VIENTIANE PLAIN WET SEASON 1968-1969[1/]

Introduction

The Ohio State Contract Team has been asked to provide a rapid evaluation of ADO's proposed rice price stabilization program for the 1968-1969 wet season in the Vientiane Plain area because of ADO's request for an 85,000,000 Kip loan from USAID funds.

Purpose of Program

The objectives of this program are both short and long range. Within the current marketing season (roughly December, 1968, to February, 1969), ADO hopes to assure the Vientiane rice farmer an economic return for his excess rice production. In the long run, ADO feels that as the rice farmer becomes confident of profitable market price (such as this program proposes) he will orient himself to regularly producing a rice surplus.

In oversimplified terms, the Laotian farmer presently tries to produce only enough rice to meet his current family consumption needs. As a result, the farmer will have some years of real deprivation, some of bounty, and some years which are considered normal. The 1968 wet season appears to be a bountiful one.

The "traditional" marketing system would see this surplus absorbed by local merchants perhaps at a price of 20 Kip per kilogram

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1/ Written for USAID and RLG use, December 4, 1968.

or less. The actual price level is probably related to the rice crop (and price) in Northeast Thailand. The actual amount of rice which traditionally moves between Northeast Thailand and Laos is unknown but may be substantial.

A lack of transportation, storage facilities, milling capacity, and effective consumer demand have all acted to prevent the development of an "orderly" and economically efficient, commercial scale, rice marketing system in the Vientiane Plain area. ADO proposes to develop over a period of time an effective commercial rice marketing system on the Vientiane Plain.

The current surplus situation gives ADO a unique opportunity to demonstrate now to the rice farmer that his rice surplus is an economic asset. ADO hopes that this year's experience will markedly shorten the transition from production for consumption only to planned surplus production.

Technical Feasibility

To engage in the proposed rice buying program, several technical factors are crucial. ADO needs to have the physical, financial, and managerial inputs necessary to carry out a marketing program of this scale.

It appears that transportation needs can be met by utilizing USAID equipment or by local hire. ADO presently has an agreement with a Vientiane businessman who is constructing a rice mill and storage facilities that will be utilized for this program.

Present plans call for the milled rice to be sold wholesale on the local commercial market. A proposed alternative market is to

sell rice retail at a slight discount to government employees. USAID needs for refugee relief and the military are final market possibilities.

ADO proposes to budget this program as shown in Table 1. ADO has previous experience with small scale rice buying. Although commercial rice marketing will be a new experience for ADO, ADO appears to have the necessary management ability.

Economic Feasibility

ADO proposes to maintain the market price of approximately 25 Kip per kilogram for paddy rice on the Vientiane Plain in early 1969 by its judicious purchase of 3,000 tons of rice. It is estimated that ADO will be competing directly in a market of 10-12,000 tons size.

ADO's proposed program is not and should not be intended to influence the consumer (milled) rice market. ADO hopes that, as the major buyer on the surplus rice market, it will be able to influence the unorganized buyers to match ADO's price. In the final analysis, ADO's ability to influence the market price of paddy rice will depend upon the managerial skill with which ADO can utilize its resources and upon the market skill of ADO's competitors. ADO will especially need to monitor any potential or actual movement of rice between Laos and Thailand that may effect the rice price stabilization program.

Evaluation

ADO does have an excellent opportunity 1) to demonstrate to (at least some) Vientiane Plain farmers the potential economic rewards of surplus rice production and 2) to operate a pilot project rice

TABLE 1

PROPOSED BUDGET FOR 1968-1969 WET SEASON
RICE PRICE STABILIZATION PROGRAM

	Costs (Kip)	
	Per Kilogram	Total
Purchase Paddy - 3,000 tons	25	75,000,000
Transportation, Handling	2	6,000,000
Milling & Storage	1	3,000,000
Interest (1/3%/monthly for average of six months on 85,000,000 Kip)		1,700,000
Direct Costs		85,700,000
Overhead at 15 percent		13,000,000
Total Costs		98,700,000

Price Kip per Ton	Income a/ Kip	Cost Kip	Return Percent
50,000	91,500,000	98,700,000	- 7.1
55,000	100,650,000	98,700,000	1.9
60,000	109,800,000	98,700,000	11.2
65,000	118,950,000	98,700,000	20.5

a/ From 1,830 tons of milled rice.

marketing system. ADO may be able to influence rice prices beyond its own physical purchases, but this will depend upon the marketing ability of both ADO and its competitors.

It can not be expected that this program will change the long run rice marketing structure of the Vientiane Plain. To do that, ADO would need to repeat its market manipulation each season in the near future. Even though more efficient indigenous marketing organizations may gradually develop, the expected growth in surplus rice will require ADO's continued presence as a market force to maintain the desired market performance.

A rice stabilization program which attempts to maintain an "uneconomic" price has the inherent danger of calling forth excess supply either by movement from adjacent areas or through new production. The need for transportation, milling, storage, financial, and personnel resources would rapidly increase as rice moves to the artificial market. Any price stabilization program to be economically and operationally viable must limit its accessibility to a very tightly controlled portion of the actually potential market supply.

The current level of ADO's managerial ability will allow for relatively effective administration of this program. ADO can not expect to have its present management abilities indefinitely. Nor can ADO's present management abilities be expected to cope with a program of any greater size.

Assuming the proposed program is successful, there will be a natural tendency to spread it in future seasons to areas such as Pakse and Savannakhet. Given the limits of ADO's managerial resources

and USAID's Kip budget and the expected increase in rice production, this program can not be endorsed on a national basis over the next three to five years.

Assuming a price for milled rice of 60,000 Kip per ton, the proposed program appears to be budgeted on a sound basis with a reasonable profit expectation. It must be recognized that ADO is assuming a market risk. Given the currently expected rice production of Laos and Northeast Thailand, the possibility of a milled rice price below the breakeven point of about 54,000 Kip per ton (milled) must be recognized. If the price of rice should fall appreciably, USAID may need to provide ADO with a profitable market.

Summary

In summary, it appears that the proposed Vientiane Plain rice price stabilization program would 1) serve as an effective testing ground for ADO's rice marketing capabilities and 2) generate useful intelligence on the effects and feasibility of rice market stabilization programs in Laos. Farmer benefits must be considered a secondary effect because of the limited scope of the program and the temporary nature of its existence.

The proposed contract needs to limit the physical area of the program's operation to the Vientiane Plain and to limit the recycling of funds.

A final word of caution. The proposed program can not be thoroughly evaluated until farmers' 1969 wet season production and marketing strategy is observed.

APPENDIX F

BIBLIOGRAPHY

Andre, Marinet, and Seguy. Development of the Plain of Vientiane, Agricultural and Soil Study. Societe Grenobloise d'Etudes et d'Applications Hydrauliques, 1961.

Background Notes, Laos. Department of State Publication 8301, October, 1967.

Drilon, J. D. Jr. "The Agricultural Development Organization and the Rice Problem in Laos." December, 1965.

Kingdom of Laos. Presidential Decree, No. 605/PC, October, 1965.

Laubis, Robert E. Tractor Survey Report. July, 1968.

Office of Program and Economic Affairs. Fact Sheet. USAID/Laos, October, 1967.

Roberts, T. D. Area Handbook for Laos. Government Printing Office, December, 1966.

Sauvajot, John B. "End of Tour Report." Department of State, May, 1966.

Statistical Report, Laos. USAID/Laos, Office of Program Evaluation, June, 1968.

TO : See Distribution Date: July 1, 1971

FROM : S. E. Snyder, Soils Advisor

SUBJECT: Trip report on Land Classification for Refugee Resettlement Areas at Savannakhet and Pakse

The purpose of this three day trip to Savannakhet and Pakse was to perform a sub-reconnaissance land classification on selected areas to determine the agricultural potential for refugee settlement.
There were six areas classified at Savannakhet:

Area # 1 Name and Location: The Ban That area is one square kilometer in size and is located about ten kilometers northeast of Savannakhet on the south side of Highway 9.

Soils: Deep, reddish brown, medium textured, moderately permeable, well drained soils with a fine sandy loam topsoil and a sandy clay loam subsoil. Moderately acid with low to moderate inherent fertility and very low in organic matter.

Slope: Gently rolling 1 to 3%

Vegetation: Closed forest under native conditions but has been subjected to slash-and-burn culture and how supports a dense regrowth of bamboo and brush. Few large tree remain.

Recommendation: Deep rooted crops such as trees and shrubs for sustained production. Shallow rooted crops such as upland rice would maintain production for about three years.

Area # 2 Name and Location: Islands and river levees down the Mekong river from Savannakhet to Ban Na Pak Soun.

Soils: Deep, dark brown, medium textured, moderately permeable, well drained fine sandy loam to silt loam soils. Slightly acid with moderate to good inherent fertility and moderate in organic matter.

Slope: Gently undulating 0 to 1%

Vegetation: Closed forest under native conditions. All degrees of agricultural development exist in these areas.

Recommendations: These island and river levee soils are capable of sustained production of all crops ranging from paddy rice in the poorly drained positions to vegetable crops and fruit plantations on the well drained sites. The flood hazard during the wet season and the need for supplemental water during the dry season are the principle limitations.
At the present time 30 to 80% of these areas have been developed for agriculture. The remaining percentage supports closed forest or a dense growth of tall grasses, bamboo and brush.

Area # 3 Name and Location: The Paksong-Na Pak Soun area begins about 70 kilometers southeast of Savannakhet on Highway 13 and lies on both sides of a new road being constructed by USAID. The area is bounded on the south by the Mekong river, on the west by Highway 11, on the north by Highway 13 and on the east by the Xe Banghiang river.

Soils: Except for the narrow river levee soils (described above) along the Mekong and Xe Banghieng rivers all of the lands suitable for agricultural development are already in established rice paddys. The dominant soil in this vast area is an improverished, shallow, very acid, sandy soil with very low inherent fertility and with little or no organic matter. Bedrock and/or laterite exposures are common throughout the area.

Slope: Undulating to rolling 1 to 3%.

Vegetation: Savannah - like aspect with scattered trees10-15 meters tall and a scant understory of bamboo grass.

Recommendation: Because the soils are of such low quality agricultural development is not recommended.

Area # 4 Name and Location: The KM-37 area begins about 21 kilometers south of Seno airfield, or 37 kilometers southeast of Savannakhet, and lies on both sides of Highway 13. The gross area observed was approximately 1000 hectares.

Soils: Two distinct soils occur in this area a deep, permeable, fine sandy loam soil, similar to soil at Ban That, occupies the higher lying lands and supports a dense regrowth of bamboo and brush. A shallow, sandy soil of poor quality occupies the lower lying areas and supports a savannah-like vegetation of scattered, low growing trees with a scant understory of bamboo grass.

Slope: Undulating to moderately steep 1-5%

Vegetation: The higher lying lands supported closed forest originally but slash-and-burn culture has produced a dense regrowth of bamboo and brush. The lower lying lands support a low open forest that is relatively undisturbed.

Recommendation: The higher lying lands that support the dense vegetation are of minimum suitability for agricultural development. Deep rooted crops such as trees and shrubs will produce moderately well for many years, however, shallow rooted crops would be limited to the first two or three years. The lower lying lands are not recommended for agricultural development because the soils are shallow to laterite and/or bedrock, strongly acid, very low in inherent fertility and organic matter.

Area # 5 Name and Location: This area is an extension to the south of the Seno Project.

Soils: The soils are the same as those under development within the present boundaries of the Seno Project.

Recommendation: It is strongly recommended that further agricultural development in this area be delayed under the end of the current wet season. Observations during this growing season and the results of the harvest will determine whether further development is warranted.

Area # 6 Name and Location: The Ban Kengkabao area is located about 23 kilometers north of Savannakhet on the Mekong River and encompasses about 1000 hectares.

Soils: The northern portion of the area is occupied by a deep, well drained, medium textured, reddish brown soil very similar to the soil at Ban That. Numerous bedrock outcrops were visible in the cleared areas. The southern portion of the area is occupied by a shallow, strongly acid, sandy soil of very low agricultural potential.

Slope: Undulating to steep 1 to 15%

Vegetation: The northern portion with its deep soil was originally covered by closed forest. Most of the area has been subjected to slash-and-burn culture and now supports a dense regrowth of bamboo and brush. The southern portion with its poor quality soil supports a low open forest that is relatively undisturbed.

Recommendation: The northern portion is of minimal suitability for agricultural development. Deep rooted crops will produce moderately well but shallow rooted crops will be limited to the first two or three years. The southern portion with its poor quality soil is not recommended for agricultural development.

There were three areas investigated at Pakse west of Muong Phonthong in Khoueng Champassak. Since this investigation was conducted on a sub-reconnaissance level all three areas are treated equally in this report. Adequate base maps are being requested for this area. As soon as the maps are acquired time and facilities

will be scheduled to gather adequate ground truth, (in the form of soil borings for laboratory analysis, underlying materials, topography, vegetation and drainage) so that a more detailed land classification can be performed. This classification will be useful in planning the agricultural development of the area by delineating those areas with the most productive potential.

Soils: The dominant soil in the area has a sandy surface soil 15 to 30 centimeters deep that is moderately permeable, moderately acid and low in inherent fertility. The subsoil is a sandy clay loam 20 to 30 centimeters thick that is slowly permeable and moderately acid. Underlying the subsoil is a dense clay barrier that is very slowly permeable.

Slope: Nearly level to gently undulating 1-3%

Vegetation: Low open forest with a thin ground cover of sedges and grasses.

Observations: Bedrock occurs at or near the surface in numerous places throughout the area. Especially in the vicinity of the escarpment that divides Thailand and Laos along the western edge of the area.

Recommendations: This area is suitable for agricultural development as a wetland rice culture area. The nearly level areas should be developed first not only because it is more economical but because the soils are more productive. Although the topsoil has a higher sand content than is desireable favorable results can be expected from the application of commerical fertilizers.

AGR:SESnyder:ck:7/2/71

Distribution: OD
LHRasmussen, AGR — AC/Savannakhet-2
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JLWilliamson, RAO — CDS Pakse-2
HWBrady, RRL — AGR-3

Williamson

OFFICE MEMORANDUM July 23, 1971

TO : See Distribution

FROM : Stanley E. Snyder, Soils Advisor

SUBJECT : Land Classification for Refugee Resettlement

File

On July 18, 1971 a sub-reconnaissance land classification was conducted on the following four areas in northern Laos.

XIENG NGEUN-MUONG NANE lies south-southwest of Luang Prabang and encompasses some 31,500 hectares. Except for those small areas already developed for paddy rice the area is suitable for upland crops. The soil is a deep, medium textured, silty clay loam with good moisture holding capacity. The area has been subjected to slash and burn culture and now supports a dense stand of bamboo. The topography is hilly with slopes ranging from 5% to 30% or more. Due to the slash and burn culture the inherent fertility of this soil is low. Deep rooted crops such as trees and shrubs will produce fair yields for many years but shallow rooted crops such as upland rice will be limited to two or three years.

SOUTH NAM POUY lies south of Nam Tan in Muang Pak-Lay on both sides of proposed Highway 1. The area encompasses some 66,600 hectares. The only possibility of developing additional wetland rice paddys is on the nearly level lands that are intermixed with, or adjacent to, existing rice paddys. Even then it would only amount to a few hectares. The balance of the area has rolling to steep topography with slopes ranging from 3% to more than 30%. Except for the steepest slopes the area has been subjected to slash and burn culture. The dominant soil is a deep, well drained, medium textured silty clay loam with low inherent fertility. Trees, shrubs and other deep rooted crops will produce fair yields for many years but shallow rooted crops will be limited to a two or three year period. The most likely looking area for upland crop development is immediately east and north of Ban Na Deua and Ban Nale. The topography is more favorable on this 1,000 to 1,500 hectare area.

BAN DONE VALLEY lies approximately 110 kilometers northwest of Vientiane. Within this 16,800 hectare valley there are several sizeable areas that warrant further investigation for agricultural development. While it is difficult to evaluate lands during the wet season all of the indicators are favorable.

1. Numerous developed rice paddys that are not being farmed this year which would indicate and excess of paddy land.

2. The large forested areas that show no evidence of being subjected to slash and burn culture which indicates that there has been no demand for upland crops.

3. The type and density of vegetation on these undisturbed areas indicates that the soils are deep and at least moderately fertile.

4. The topography is favorable except for several obviously steep hilly areas scattered about the valley.

From the above observations the Ban Done Valley has more favorable land resources than any other undeveloped area observed in northern Laos.

BAN HOUAY HIN LAP lies east of the Ban Done Valley, west of the Phou Pha Deng ridge, and south of the Nam Lik River. This 12,700 hectare valley is drained by the Nam Set river, a tributory of the Nam Lik. There appears to be a small amount of potential rice paddy land along the Nam Set and its major tributaries. The balance of the area is rolling to steep with 3% to 20% slopes. Nearly all of the area has been subjected to slash and burn culture and now supports a dense growth of bamboo. The dominant soil is a deep, medium textured, well drained silty clay loam with low to moderate inherent fertility. Trees, shrubs and other deep rooted crops will produce moderate yields for many years but shallow rooted crops will be limited to a two or three year period.

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AC/Sayaboury - 2
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