

AN AGRICULTURAL DEVELOPMENT  
PROGRAM FOR LAOS

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# AN AGRICULTURAL DEVELOPMENT PROGRAM FOR LAOS

H. Brocks James\*

## I. INTRODUCTION

Agriculture in Laos includes 95% of the population and represents practically all of the Lao economy, except for the contribution of other countries. Agriculture is the foundation on which the nation must build if it is to develop into a sound economic and fiscal system. Unless agriculture is developed beyond the present rice-hunting-fishing stage of development there will be no sound base on which to develop other economic activities.

It is the purpose of this report to suggest some guidelines for developing agriculture as rapidly as practical and to provide a sound basis for the development of the total economy. The approach used in this study has been to study carefully the people, the physical resources, and the present programs underway in the country and to use this as a background from which to develop proposed programs and recommendations. The economic analysis underlying the recommendations is sound and the factual data used are the best available at the present time. The report includes recommendations dealing with production goals for Lao Agriculture, planning for the future, marketing,

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implementation of an agricultural development program for Laos, coordination of closely related activities and organizational structure needed, and suggestions regarding the organization of Lac Agriculture.

## II. LAO BACKGROUND INFORMATION

Laos is composed of 57.6 million acres (90,000 square miles) of land and straddles the 105th meridian and lies between the 12th and 23rd parallels. Two-thirds of the country is covered with forest. Tree growth is rapid in the mountain areas where peaks reach 9,000 feet. The plateaus of de Jars and Bolovens, along with a number of smaller plateaus and the Mekong Valley, comprise the major agricultural areas of the country. Rainfall is light to nil during the period from the last of October to the first of June. The rainy, or monsoon, season usually begins in June and ends in October. Total rainfall is about 98 inches annually. Temperatures are highest during April and May near the end of the dry season (high above 95 degrees) and lowest early in the dry season during December and January (low at night below 60 degrees). The humidity is especially high during the monsoons with some rain occurring most days. Soils in the Mekong river basin are poorly drained and water stands on most of the land during much of the monsoons.

Many plants grow in Laos but the more important cultivated ones are rice, corn, coffee, tobacco and a wide variety of fruits and vegetables. Jungle plants are important subsistence items and even enter the market to a limited extent in some areas. Livestock include water buffalo, cattle, hogs and poultry. Forestry products are important for home use and in the limited channels of trade.

The Lao economy is an agricultural economy. More than 95% of the population is dependent upon agriculture for its livelihood. The economy is

one primarily of subsistence with most of the population being outside of the market economy, or, if involved at all, only to a very limited extent. Per capita income is low (about \$65 annually) and markets are not available for many items in many areas of the country. Transportation is poor to non-existent in many places so that farmers have little incentive to produce a surplus for which there may or may not be a market. Transportation is so difficult that products may go to waste in one area while the people in another area are in short supply.

The population of Laos is estimated at two million. Major ethnic groups include Thai Lao, Thai, Meo, Lolo, Man and Lao Theung. The most important minority groups are Vietnamese and Chinese. There does not appear to be a feeling of national pride and loyalty among the people. Instead, loyalty is more likely to be to an individual local administrator, chief, or to a family. Although the population appears to be moving in the direction of national unity and a consciousness of being a part of a nation, they still have quite a way to go to attain a strong sense of national unity.

The involvement of the people in a market economy along with an improvement in the agriculture of the country would not only improve the level of living of the people and contribute to national unity, but it would provide an important incentive for growth and development. Improvement in health and education is essential to future growth and development. Approximately 15% of the population can read and write, but the number who are functionally literate is much lower. Large numbers of better trained individuals are essential to rapid progress.

Imports in 1963 amounted to 2.3 billion kips, whereas exports for the same year were only 57 million kips. During 1963, the Lao Government spent 5.9 billion kips; had budget revenues of 1.4 billion kips, and a deficit for the year of 4.5 billion kips. Thus, it is obvious that considerable economic growth is essential before the Lao economy or the Lao Government can attain a satisfactory degree of stability as an economy or as a sound fiscal system. Outside assistance is now meeting the balance of payments and fiscal deficits.

A careful study of the Lao economy reassures one of the importance of developing the agricultural economy of the country as rapidly as possible to meet the food needs of the people and to provide a sound basis for growth and development in other areas of the economy. Rapid increases in agricultural production along with increased efficiency should provide: (1) food for the population, (2) surplus agricultural products for export and, (3) for the release of manpower and other resources from food production to be used in manufacturing and services essential to the growth and development of the total economy. Rapid economic development in Laos means the rapid introduction of science, technology, and business management to production processes and the continued and rapid reallocation of resources within agriculture and between agriculture and other segments of the economy.

### III. PRODUCTION GOALS FOR LAO AGRICULTURE

Increasing production in a country is not merely a matter of applying science, technology and business management to the production process. Neither does production automatically take place just because people need products in another part of the country. The creation of an environment in which people are stimulated and motivated to increase production is of major importance. There are many important components of this environment. First, there must be security so that people will feel that they can harvest a crop if they plant and produce it. If all decisions are on a day to day basis due to insecurity, it is difficult to get production that requires efforts during an entire growing season.

Second, there must be a market for the product one wants produced. Why produce more rice than you need if you cannot sell it? Not only must there be a market, but people must know about it in advance of the planting season. The farmers must know what the minimum price will be, how and when it will be paid, and where, when and in what condition the product will have to be delivered. These are essential to an orderly production and marketing process. The buyer of the product must be prepared to take the product promptly, pay for it according to the agreement, and store and handle it so as to incur the confidence of the people.

Third, the environment must be free from techniques which may deprive the producer of the benefits of his productive efforts. Graft, extortion, and cheating must not be allowed to undermine the confidence of the producers.



The farmer must feel that he will be allowed to sell his products and use the proceeds for his own benefit including that of his family. Otherwise, there is no incentive to produce.

Fourth, the reward must be worthwhile in the eyes of the producers. Why produce rice for sale if there are no products to buy with the proceeds of the sale. It may be necessary to establish markets of two kinds: (1) for farmers products, and (2) for the things farmers want to buy, either as consumer items or as factors of production. One should recall the contribution made by the route men, trading posts, and country stores in the early development of the United States. A system in which a farmer could carry farm produce to a nearby market and sell it and buy other items to satisfy his needs would be a powerful stimulant to increased production in Laos.

The goals set forth in the following table are based on the data available, the present state of production, the plans and programs underway and the program anticipated during the next few years as set forth in Section VI entitled "Implementation of Production and Marketing Programs". Increased production of crops can be brought about by the introduction and use of better seed as is now being done in the case of rice, corn, and many vegetable crops. The increased use of fertilizer is being tested on many crops and thus far shows promise of increasing production. Compost will increase yields and green manure crops should be tested to determine their practical use here in Laos.

PRODUCTION GOALS FOR PRINCIPAL AGRICULTURAL CROPS, LIVESTOCK & FOREST PRODUCTS

<u>Product</u>	Crop Year Estimated Production			Production Goals		
	<u>1961/62</u>	<u>1962/63</u>	<u>1963/64</u>	<u>1964/65</u>	<u>1965/66</u>	<u>1966/67</u>
Rice-Milled, M. tons	520,000	510,000	520,000	535,000	565,000	600,000
Corn - M. tons	18,000	19,000	18,000	18,500	22,000	22,000
Coffee - M. tons	600	500	600	600	620	640
Tobacco - M. tons	1,800	2,000	2,200	2,400	2,600	2,800
Cotton - M. tons	*	*	*	*	*	*
Cattle-Slaughtered-Head	*	5,990	4,992	5,000	5,400	6,000
W. Buffalo " "	*	11,907	13,303	14,000	15,000	16,000
Hogs " "	*	66,127	67,763	69,500	72,500	75,000
Poultry " "	*	*	*	*	*	*
Eggs - Dozens Consumed	*	*	*	*	*	*
Timber - Cu. Meters	*	50,662	50,395	50,500	50,500	50,500
Firewood - Cu. Meters	*	52,892	85,216	85,500	86,000	86,000
Charcoal - M. tons	*	10,565	10,637	11,000	11,000	11,000
Bamboo - Cu. Meters	*	1,926	2,213	2,300	2,400	2,500
Cattle Hides - Number	*	3,436	1,838	4,000	4,500	5,000
W. Buffalo " "	*	6,622	4,335	7,000	8,500	10,000

\* Data not available.

Estimated production from Lao statistics.

Production goals represent attainable production.

There are many other things which will affect the output of crops in Laos. Water management and irrigation could be a major factor in increasing output of agricultural commodities. Chemicals for insect and disease control will become increasingly important as the agriculture of the country develops.

Lao agriculture is not ready for the kind of mechanization found in the United States, but much progress can be made within the present Lao framework of agricultural production. The improvement of simple tools could result in better seedbed preparation and improved harvesting techniques. There are many things of this kind that can contribute to the production of more agricultural products in Laos.

Livestock production is not well developed in the country although it is an important part of Lao agriculture. Horses are not used in Lao agriculture. Water buffalo and cattle are used for work animals and for meat. Animals are not kept for milk and Lao agriculture is not yet ready for the dairy industry. Hogs and poultry are important but, like buffalo and cattle, scavenge for themselves with the help of the farmer, but normally without confinement and feeding.

Increased production of livestock is based on improved breeding, feeding and better management including insect and disease control. New breeds of swine have been introduced and a crossbreeding program on native stock is already underway. New breeds of ducks have been introduced and look promising at this time. Some progress is being made with poultry.

Improved management applied to crops, livestock and forest products could be effective in increasing output. Better management is needed in connection with the planning, production, harvesting, storage and marketing of forest

products, crops, and livestock.

The first essential to progress in Lao agriculture is the development of a trained staff of RLG employees to handle the research, education (extension) and service programs needed in the country. Programs designed to train people to work on these activities should be developed as rapidly as possible. Increased agricultural production in the years ahead is dependent upon trained leaders and workers.

#### IV. ADDITIONAL PLANNING AND PROGRAMS NEEDED

Future agricultural (and total economy) programs for Laos should combine the intelligence, experience, scientific, technical and business management knowledge of top level officials of USAID and RLG with the common sense and practical knowledge of the leaders at the village level. With the knowledge and guidance of skilled technicians, programs should be developed at the village level for every village in Laos: the people in each village should develop specific goals for the major crops and livestock appropriate to their particular conditions. Means for attaining these goals should be spelled out in detail, step by step, setting forth exactly what is to be done, by whom, when, and how it is to be accomplished. This would provide a specific and accurate list of manpower and material needs for each village and would provide a practical approach to increasing agricultural output.

Village plans, including input and output data, could be summarized and analyzed by appropriate subdivision and division so that one would finally arrive at an agricultural program for Laos that would carry a great deal of meaning and dependability. Also, it would provide a realistic list of the inputs needed to attain the production goals set for the country.

Planning of the kind envisioned in this discussion would provide a basis for setting up a marketing system to handle supplies, consumption items, and farm products. In addition plans and programs of this kind could work village by village, area by area, even though the entire country could not be programmed at one time. It puts planning and program execution on a practical basis which would work under everyday conditions. It could be operated at different levels

of sophistication and still remain practical and dependable. The range in sophistication could easily be from a linear programming technique to one using only simple arithmetic. Steps should be taken to get the village planning and programming process under way as soon as possible.

## V. MARKETING

Conditions in Laos vary widely with respect to the marketing of (1) farm products, (2) supplies farmers use in the production process, and (3) consumption items. Some of the hill tribes and small groups would not even be considered a part of the market economy, i. e. they do not buy and sell items, or trade with others outside of their own limited groups. Others are involved in the market economy to a very limited extent, buying and selling or trading very few items. Still others, and this is especially true of those in and near the larger towns in the country, are involved in the market activities of the country. They may sell produce as well as their personal services and use the proceeds to purchase production supplies and consumer items.

More and more people are becoming involved in the market economy. This pyramids the importance of making sure that the marketing system works well and that it facilitates and stimulates production. It can do this by increasing the desire to produce and by handling the products and factors of production in an efficient manner. Also, it can serve as an efficient means of getting consumer goods to the right people at the right time. If one visualizes a free market economy for Laos in the long run, it becomes terribly important that it receive enough assistance and modification in the early stages of its development to insure its success in the end.

If the people are to increase production they must be able to buy factors of production (seed, fertilizer, chemicals, etc.) but they cannot buy these things and pay for them unless they can sell something. To sell something

there must be a market where produce can be sold or traded. Also, if the level of living of the people is to increase very much it is obvious that they will have to become involved in the market economy.

A market economy is supposed to do a number of things among which are (1) tell producers what the market wants and what they should produce, and thus allocate resources, (2) bring together the price making forces so that prices get determined equitably, and (3) provide for the physical handling and storage of products, goods, and services in an efficient and effective manner. In the early stages of the development of a market economy, or during other periods of undue stress, the marketing system, for a number of reasons, may not perform these functions as efficiently or effectively as desired, or for that matter, under unusual conditions of stress may perform completely unsatisfactorily. Thus, one may find it necessary to specify the economic rules of the game, both positive and negative, to insure that goods and services get produced and distributed.

Increased production of goods and services in Laos, at this time, is heavily dependent upon the proper functioning of the marketing system. To insure the proper functioning of the marketing system in the years immediately ahead will require assistance from some group interested in the total development of Laos and of all of her people. The appropriate group to assist the marketing system would appear to be the Royal Lao Government or a corporation owned by the government and authorized to act on behalf of the people of Laos.

To be more specific, the marketing task in Laos, in many cases, is one of creating a market in the physical sense and in the sense of setting and



guaranteeing minimum prices for specified products and over specified periods of time. It is felt that this is essential to increasing production. Under such a system the producer would know ahead of the planting season that there would be a market at a fixed minimum price for certain products. Before discussing specific commodity purchase programs it should again be emphasized that the route system (Peddler), trading post, and the country store ideas have much to offer in terms of increasing production and bringing the people into the market economy. Support of these activities should seek to avoid the normal abuses which may grow up with such developments.

If one assumes that the objective of a commodity purchase program is to stimulate orderly and efficient production (there are alternative objectives) one should develop ways and means of implementing the program so as to get the full benefit of the stimulation provided by the program. The following would be important in this connection: (1) announce the program well in advance of the production planning and planting season, (2) conduct a thorough educational program to explain the program in detail and be sure that all producers understand it and how it will affect them, (3) follow up with an educational campaign giving specific technical recommendations and demonstrations on ways and means of increasing production, and (4) provide farmers with materials essential to increased production such as seed, fertilizer, chemicals, etc. at reasonable prices, on credit, or contract as seems appropriate under prevailing circumstances.

The program itself should: (1) provide minimum prices, for specific grades of the product to be delivered at specific locations, (2) specify locations where the product will be bought, (3) set dates on which the purchase program

will operate, i. e. , the date on which the market will be open, and (4) prescribe and announce a simple straightforward method of paying for the product, such as payment in cash on the spot or other appropriate method.

As a practical matter in Laos I would suggest that a purchase program be initiated for rice immediately and that it become effective for the present crop. I would suggest that locations for purchasing rice be established as soon as possible and that the minimum price be set for Vientiane and varied for each location depending mainly on the cost of transportation between the purchase point and Vientiane. Thus the base price would be at Vientiane and other prices would deviate from the base price, usually being lower although a specific purchase point could carry a higher price if there was sufficient justification for it. The setting of the base price would be influenced by many factors but would be most heavily influenced by the effect it would have on Lao production. Other factors to be considered include prices for competitive products, prices in competing countries, cost of production, cost of living, etc.

For the program to work reasonably well there would have to be adequate facilities for handling and properly storing the rice and eventually disposing of it. Capable and dependable individuals would need to be hired or designated to do the buying and handling. Good storage is essential, otherwise spoilage will take its toll and reduce the effectiveness of the program.

In addition to operating the purchase program it would be good public policy for the same corporation or agency or some other agency of government to announce of disposal plan for getting the rice back on the market and into the channels of trade. In Laos I believe this part of the program should include

prices at which rice would be sold to the public and put back into the marketing system.

One final word of warning, a purchase program should be free from graft and should be handled so as to inspire the confidence of the public. It would need to continue over a period of years to be effective in bringing up the production of a number of commodities. As soon as the rice program is operating smoothly and effectively consideration should be given to expanding the commodity purchase program to include other commodities in short supply.

Another marketing suggestion should be considered for Laos. Where farmers do not have access to adequate supplies, an RLG sponsored corporation should consider operating a "country store" or "trading post" to buy and sell so as to meet the needs of the farmers. One might be surprised at the increase in production one would get for many items if a system of this kind was inaugurated and backed up with educational programs and technical know-how.

One last comment is essential in connection with a discussion of marketing in Laos. The importance of transportation, storage and processing facilities must not be overlooked. The development of all three should go hand-in-hand with the development of marketing and a market economy for Laos.

## VI. IMPLEMENTATION OF AN AGRICULTURAL DEVELOPMENT PROGRAM FOR LAOS

Agriculture now represents practically all of the Lao economy, except for the contributions of other countries, and is the foundation on which the nation must build if it is to develop into a sound economic and fiscal system. Unless agriculture is developed beyond the present rice-hunting-fishing stage of development, there is no sound base on which to develop other economic activities. Not only must an economy have food for its population, but as it moves in the direction of a market economy, it must develop purchasing power so that it will have an effective demand for new goods and services as they become available. Agriculture is the base from which the Lao economy must emerge, grow and develop if it is to take its place among the developing nations of the world.

If we have a sincere desire to help the Lao economy grow and develop and eventually emerge as a sound and developing economy and fiscal system, we must help them develop in two areas as rapidly as possible. First, we must develop people through every means at our disposal - health, education and training at all levels; especially must we develop people who know how to do the kind of jobs that have to be done as the economy begins to grow and develop. This includes not only leaders and managers, but laborers as well. Second, we must develop agriculture as rapidly as possible to provide (1) a source of food and fiber for the people; (2) a nucleus or sound base from which other economic activities may emerge; (3) a source of labor, management and trained people for other economic activities; (4) (to provide) effective demand for additional

goods and services as they are developed; and (5) (to provide) for the people of the country by beginning with the people where they are; although one might like to begin somewhere else, that alternative is not available since the people are not somewhere else; they are in agriculture at the present time. They can be trained and moved as the economy develops. The first step in the development of the Lao economy is the development of the people and of agriculture.

The current efforts being made to develop Lao agriculture, in my opinion, are completely inadequate in relation to the job that needs to be done. I do not mean this as a criticism of the performance of present staff. They are dedicated and capable people and are performing well under the circumstances; but we are not putting enough manpower into the program here to handle the agricultural activities in one good agricultural county in the United States. If we are to have an impact on the economy and the people of Laos, we must put our resources where they will be effective in developing the people and the economy of the country. If we fail in this respect, we may find that we have demonstrated to the Lao people and to the rest of the world, the exact opposite of what we had in mind; a people dependent upon relief and assistance from other nations of the world instead of a self-reliant, self-supporting people with a sound economic and fiscal system.

I have set forth below what I regard as a minimum effort the United States should make toward the development of Lao agriculture. I have indicated the scientific personnel needed but have not indicated the service personnel, supplies, equipment and physical facilities which would be needed to make the program effective. My recommendation includes an organization which would be headed

administratively by one man and would be made up of four parts: (1) Research, (2) Extension, (3) Instruction and Training, and (4) Service and Regulations. Each of these groups would be administered by one man who would report to the administrator for the total agricultural program. These five (1 plus 4) administrators would form the hard core of the administration for agriculture in the Mission. The total scientific and professional staff including administrators would total fifty-seven (57). All scientific and professional U. S. personnel would have a counterpart in the Lao Ministry of Agriculture.

### Research

The research group would be under the leadership of a research administrator and, for convenience of administration, would be divided into two groups, each headed by a research scientist who would serve as administrator and provide leadership for his group. For U. S. personnel, I am suggesting that the groups be known as the Plant Science Group and the Animal Science Group (alternative names would be Plant Research and Animal Research).

The U. S. scientists along with their Lao counterparts would develop and conduct an applied research program designed to develop Lao agriculture. The research conducted in Laos should be applied research designed to take the scientific, technical, practical and business management knowledge already in existence in the world and adapt it to Lao conditions. The U. S. and Lao Governments should avoid spending money (using resources) to develop new knowledge (fundamental or basic research) here in Laos at this time. The research problem is a practical one of collecting existing knowledge (scientific, technical, practical and economic information) and, by conducting applied research, adapting it to Lao conditions.

A program of this kind should not be too difficult and should become effective in a short period of time. Lao applied research should provide the recommendations for the rapid development of Lao agriculture.

The minimum number of U. S. scientists needed to carry out an effective applied research program in conjunction with Lao counterpart research workers is as follows:

<u>Activity</u>	<u>Number</u>
Research Administrator	1
Plant Science Group:	
Administrator & Researcher	1
Rice Breeding	1
Rice Fertilization & Culture	1
Soil Fertility & Fertilizer	1
Farm Tools & Machinery (Agr. Engr.)	1
Insect Control (Entomologist)	1
Disease Control (Plant Pathologist)	1
Vegetable Production	1
Coffee, Tea & Fruit Production	1
Feed Crop Production	1
Foods & Nutrition (Home Economics)	2
Production Economist (Farm Mgt. & Planning)	1
Marketing Economist	1
Forestry	1
Sub-Total	<u>15</u>

<u>Activity</u>	<u>Number</u>
Animal Science Group:	
Administrator & Researcher	1
Buffalo & Cattle Breeding	1
Buffalo & Cattle Nutrition & Mgt.	1
Swine Breeding	1
Swine Nutrition & Mgt.	1
Poultry Breeding	1
Poultry Nutrition & Mgt.	1
Cattle & Swine Disease & Insects	1
Poultry Diseases & Insects	1
Fish Breeding, Nutrition & Mgt.	<u>1</u>
Sub-Total	10
Total for Research	26

### Extension

There is a great deal of knowledge in the world that can be used in the development of Lao agriculture. Much of this knowledge can be adapted and adjusted to be made useful in Lao agriculture by well trained extension specialists; other knowledge will have to be adapted to Lao conditions by the means of applied research. Regardless of the source of useful, practical knowledge, it is the extension specialist, the practical expert, that is able to provide the most effective leadership for the rapid development of an undeveloped agriculture. The well trained extension specialist is in a unique position to promote growth and development in agriculture; he has one hand on the better sources of knowledge



in the world including his own colleagues in research and instruction, and the other hand in touch with the local village people including his colleagues who are paid workers (county agents).

First, the extension specialist selects practical information and trains local county agents and local leaders so that they can teach and demonstrate the new and better ways of practical farming. Second, the extension specialist develops an understanding and appreciation of local farm problems and opportunities and is able to help applied research workers adjust their work to more nearly meet the needs of the country. The research worker and the extension specialist should become an effective team for solving farm problems and providing leadership for the development of agriculture. Third, it is the extension specialist who keeps the county or local extension worker up-to-date and effective as a farm advisor and educator. Fourth, the extension specialist becomes an effective and valuable advisor on matters of farm policy, i. e., all of the economic rules of the game that affect the flow of farm products into the market economy. Fifth, the extension specialist can exert considerable influence on the future training and education of rural people. He should, and usually does work closely with people involved in training and instruction to help adapt their programs to meet the needs of the people.

The minimum number of well trained extension specialists needed to carry out an effective agricultural development program in conjunction with Lao counterpart specialists and county agents and local workers is as follows:

<u>Activity</u>	<u>Number</u>
Administration & Specialist	1
Rice Production	1
Vegetable Production	1
Coffee, Tea & Fruit Production	1
Feed Crop Production	1
Insect Control (Entomologist)	1
Disease Control (Plant Pathologist)	1
Production Economist (Farm Mgt. & Planning)	1
Market Economist	1
Farm Tools & Machinery (Agr. Engr.)	1
Buffalo & Cattle Production	1
Swine Production	1
Poultry Production	1
Cattle & Swine Insect & Disease Control	1
Poultry Disease & Insect Control	1
Fish Production	1
Home Economist	2
Publications	1
Radio Communications	1
Total	20

### Training and Instruction

Trained human beings are the number one problem (excluding security) so far as the development of Lao agriculture and the total economy is concerned. Currently only one of each one thousand children born in Laos finishes high school. The best I have been able to determine only eight Lao have received the bachelor's degree in agriculture or in a curriculum anywhere near its equivalent during the last ten years. As a practical solution to the shortage of trained manpower, we should move as rapidly as possible on two fronts.

First, we should train local Lao people at the vocational level to serve as local county and home agents. This program should proceed as rapidly as possible until the country has a good supply of county workers and local leaders. At least 500 should be trained as rapidly as they can be recruited. Also, a retraining program should proceed along with the initial training program to upgrade those who show promise. This effort could provide the beginning basis for a trained county staff.

Second, we should begin immediately an expanded program of higher level training in agriculture for the most promising young Lao men and women. We should schedule at least twelve (12) per year for training at the bachelor's level during each year of the next five years. Assuming no attrition, a program of this level would only meet the minimum needs for counterpart people. If it proves difficult to meet this quota from the Lao population, the priority for agriculture should be increased and the five year period should be extended. I would suggest that a special program be developed and that most of these people be sent to the University of Hawaii, East-West Center. After the initial

wave of 60 people have been trained (bachelor's level), it would be wise to consider sending some to other universities for training. Later on, graduate training should be considered for the most promising young men and women.

Third, we should consider helping the Lao establish a national agricultural college to serve their country in the years ahead. If the vocational training program and the bachelors trainee program develop satisfactorily during the next five years, consideration should be given to establishing a college in conjunction with the vocational training school. When, where and how this should be done will depend upon the progress made in agriculture and education during the five year period in which the above-mentioned programs are in effect. I mention it at this time because I think it is something the country will need in the long run.

Only one U. S. person is being recommended for institutional and vocational work at this time. He should provide leadership for the work along with the Lao counterpart and they should council with extension specialists, research workers, and educators in both U. S. and Lao agencies.

### Service and Regulations

The United States will need to provide the Royal Lao Government agriculture with assistance in the development of a number of service and regulatory functions. I am indicating some of these and suggesting that they be staffed with U. S. professional personnel and with Lao counterparts. One U. S. Administrator would be needed to work with a Lao counterpart. Total U. S. professional staffing for service and regulations would be ten in the beginning. Other activities might be added at a later period of development.

Irrigation

The present irrigation activities could be expanded and handled as a part of the U. S. service and regulation activities. Although it could be included elsewhere, it seems to fit best in this section of the recommended organization. A staff of six professional U. S. engineers and advisors are being recommended, one of which should serve as leader for the program. Counterpart personnel should be established in RLG agriculture.

Proposed Irrigation Activities:

Fiscal Year	Dams for Irrigation		Other-Purpose Dams Number
	Number	Acres	
1966	45	25,000	40
1967	65	40,000	50
1968	75	50,000	60
1969	90	65,000	75
1970	100	80,000	90

Agricultural Development Organization

The present ADO activity would be included in this section and would include one U. S. Marketing Economist who would serve as leader for U. S. activities in the commodity purchase program discussed under the Marketing section of this report. The RLG agricultural counterpart would administer the ADO Program.

Weights and Measures and Grades and Standards

The U. S. should provide one expert in this field as soon as the RLG agriculture is ready to develop a program and provide a staff to operate it.

As the market economy develops this activity will become essential.

Plant and Animal Quarantine

The U. S. should provide one expert in this area as soon as the RLG agriculture is ready to develop this part of the program. Its development should not be postponed too long as Laos might become a "dumping ground" for diseased plants and animals.

Not Recommended

At this stage of Lao agricultural development, I am not recommending the use of U. S. experts in the field of cooperatives and credit. In my opinion, Laos is not ready for these activities. Any research or educational work on credit or cooperatives could be handled by the research and extension economist.

Summary of Professional Personnel - Service and Regulations

Administrator	1
Irrigation-Engineers & Adm.	6
Agricultural Development Org.	1
Weights, Measures, Grades, Stds.	1
Plant and Animal Quarantine	1
Total	10

Activation of Program

I would visualize this proposal as a ten-year program. Present activities should be stepped up to this level as rapidly as possible. Many U. S. activities would not need to be continued for a full ten years if a good Lao counterpart

could be hired. It is estimated that U. S. experts would need to be active for a minimum period of four years in some areas of work and much longer in others. I would estimate that the program would build up to about forty scientists and then begin to drop back as RLG agriculture counterpart people developed to the point where U. S. technical advice was no longer needed.

## VII. COORDINATION OF COMMUNITY DEVELOPMENT, AGRICULTURE, EDUCATION, AND HEALTH PROGRAMS

There are many ways to organize resources to accomplish specific objectives. The important thing is to organize both human and physical resources so as to get the job done from both a short and long-run point of view. One of the important criteria of an organizational pattern of operation is the effect it has on the morale of the staff. The organizational, administrative and communicative structure should be conducive to high morale. The environment should be such that each individual is inspired, stimulated, and motivated to do the best work that he is capable of doing. Regardless of the specific organizational structure used, certain fundamentals are essentials to the creation of an environment which prompts each individual to do his best and to contribute the maximum to the total program. The overall program, or objectives of the program, must be reasonably well understood by the staff so they understand how their efforts contribute and why they are important, i. e., each person must feel that he is a part of the total program. Good communication in both directions is essential to high morale. Another important component of a good working environment is a feeling of freedom. Individuals must feel free to express their ideas and to make suggestions for improving programs. There must be an opportunity for differences of opinion and mutual respect. The mechanics of the democratic process is not as important as the philosophy of democracy; i. e. counting noses is not as important in developing a good environment in which to work as is a feeling of freedom to express ones self without fear of intimidation or reprisal, but with assurance that one will be



heard with understanding and appreciation even though ones advice, or point of view, may not be accepted.

Administrators and the administrative structure should facilitate and not impede the work of the staff. Administrators and organizational structure exist because there is a job to be done. Therefore administration should provide leadership and through organizational structure and administration should reduce to a minimum redtape, interference, uncertainty, indecision and other conditions which may interfere with the effectiveness and efficiency of the staff.

Other components of a good working environment include clarity of channels of administration, provisions for effective communication in both directions, and adequate provisions for cooperation and coordination among organizational units working in closely related fields of activity. Although there is no substitute for capable individuals who understand the importance of cooperation and coordination and who find genuine satisfaction in working together, there is merit in having the organizational structure facilitate cooperation and provide for adequate coordination.

The efforts of U. S. assistance (whether in Laos or in some other underdeveloped nation) in agriculture, education, health, and community development is aimed at helping the people develop in two broad areas. First, the programs are designed to make the people more productive human beings in the economic sense, i. e. to increase their ability to produce goods and services, not children, although the result is probably an increase in the physical ability to do both. Second, the programs are designed to increase the capacity of the people to enjoy living in this wonderful world in which they are

privileged to live. This is based on the principle that one's capacity to enjoy the finer things in life increases with increased knowledge and understanding. In addition to the above, agricultural programs are directly involved with a third objective, namely the increased use of science, technology, and economics to increase the output of goods and services (primarily food, fiber and closely related products and activities) and contribute to the economic growth and development of the nation. These and other objectives should provide an incentive for the people to appreciate freedom and peace and to want their nation to take its place among the free, democratic and peaceful nations of the world.

It appears logical to me to think of programs in agriculture, education, health and community development as discipline oriented, functional programs which should take their place side by side, each contributing to a total coordinated program. Each would have its own program but all of the individual programs would be coordinated so as to be complementary and supplementary to each other and not competitive, i. e. everyone would be doing his own job but would be knowledgeable of all other activities and thus in a position to give and receive assistance when the total program would be enhanced by such cooperation. A fifth and essential part of the team would be an operational unit to take care of the "housekeeping" and many other functions of this kind that can be more efficiently handled by a specialized unit.

The fact that the above five units of activity (agriculture, education, health, community development, and operations) appear in a horizontal position on an organization chart does not suggest that the resources needed by each to do its job are the same. Resource allocation should be based on the

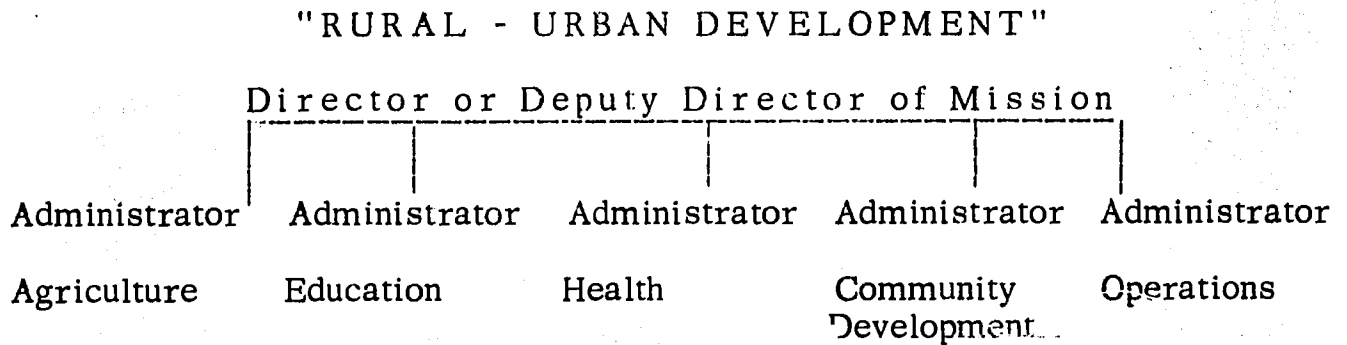
activities to be carried out and the relative importance of one group of activities compared with another and with the total program. If the program was small and a particular unit did not have sufficient resources to justify a separate administrative group in the beginning, it could be combined with another unit; for example, community development and operations might be combined. Other modifications could be made to meet local conditions.

The administrative heads of the five units (agriculture, education, health, community development, and operations) would report to one individual administrator who could be the director, or deputy director of the Mission or someone designated by the director, depending upon the size and complexity of the program in that particular mission. Such an organizational structure by whatever name it was called (rural-urban development is the name I would suggest) would provide a team of six administrators who would be in a knowledgeable position to provide for leadership and coordination of a superior program. Such an effort would not only strengthen U. S. Programs abroad, providing for greater efficiency in the use of resources and more effective programs, but would serve as a shining example of cooperation and coordination to administrators in the host country.

The suggested organizational structure would permit each unit (agriculture, education, health, community development, and operations) to work with its appropriate counterpart in the host country. However, the suggested organization would not necessitate the host country developing a duplicate organizational structure, it would merely serve as an example for the host government to observe and perhaps modify and adopt as experience justified. U. S. Missions

and agencies should be careful not to force host countries to repeat the same mistakes experienced by the United States.

The following shows the organizational structure suggested for



In my discussion I have not dealt with road construction and I would not suggest that it be included in the organizational structure suggested above. However, I do want to emphasize the tremendous effect roads have on economic development and urge that the location and construction of roads be given careful consideration.

The cluster program which seems to be a good organizational approach for dealing with agriculture, education, health and community development would fit in nicely with the organization suggested. My observation is that the cluster program, including all of the educational, developmental, and service activities carried on within the cluster, is not and cannot be regarded as an adequate shortrun security measure. On the other hand I would consider it a powerful influence in terms of long run political stability and security.

## VIII. ORGANIZATION OF LAO AGRICULTURE

Agriculture comprises most of the economic activity of the Lao people. It is the base upon which the nation must depend if it is to develop a sound market economy and fiscal system. The first step in developing Lao Agriculture should be to recognize its importance in the Lao economy by according it a more prominent place in the governmental hierarchy. It should be recognized for what it is and for the role it is playing and is capable of playing in the Lao economy. I would suggest that Agriculture be made a Ministry and that it contain three divisions as follows:

A. The Division of Production and Research would deal with applied research and would have four branches as follows:

1. The Agricultural Branch would include all plants except forest plants. Activities would include applied research dealing with breeding, fertilization, insect and disease control, culture, mechanization, management and marketing.
2. The Livestock Branch would include all animals. Activities would include applied research dealing with breeding, nutrition (feeds & feeding) insect and disease control, mechanization, management, and marketing.
3. The Forestry and Water Resources Branch would include forest and streams. Activities would include forest production practices, harvesting, marketing, and fire control, and watershed protection, and flood control.

4. The Foods and Nutrition Branch would include applied research dealing with food for human consumption. Activities would deal with the nutritive value of foods of various kinds, food preparation, palatability, and adequate diets for people of all ages, social, and economic strata.

B. The Division of Extension Service would provide scientific, technical, economic and general family living information to all the people, especially the rural people, but not excluding others. The Division would have four branches as follows:

1. Agriculture
2. Livestock
3. Forestry and Water
4. Home Economics

C. The Division of Services and Regulation would start with a few of the more urgent activities and add others as the demand and means of financial support developed. The following activities are appropriate for this division:

1. Irrigation
2. Weights and Measures
3. Quarantine
4. Statistics
5. Commodity Purchase Programs (ADO)
6. Grades and Standards
7. Cooperatives (when desirable)
8. Credit (when desirable)

## IX. RECOMMENDATIONS

1. That more effort be devoted to the development of the Lao economy. There is no sound basis for security without considerable economic growth and development. Agriculture includes 95% of the people and practically all of the economy. The only sound and practical approach to economic development in Laos is to develop agriculture as rapidly as possible and use it as a base from which to develop other economic activities. Even so, agriculture cannot be developed in a vacuum. Concurrent with the development of agriculture must go the development of a marketing system, transportation, communications, productive people (trained people), and a market economy including effective demand for goods and services.

2. That a comprehensive, aggressive agricultural program be put into effect as soon as possible. The present effort is completely inadequate and is on a "piece-meal" basis. A total program involving (1) research, (2) extension, (3) instruction and training, and (4) service and regulation on a much larger scale should be implemented as rapidly as personnel can be employed. Short term emergency efforts (putting out fires) should be handled promptly and efficiently but should be consistent with the total program. Both short and long term production goals should be developed and each year short term production goals should be adjusted. See Production Goals set forth in Chapter III.

Emphasis should be on rice production in the beginning of the program. Rice is the important food item in the country. A 5% increase in rice production may be much more important than a 100% increase in some other item. Vegetable

production is another area of importance and is subject to rapid expansion with a minimum of effort in a short period of time.

3. That positive steps be taken to develop a marketing system as rapidly as possible. This should involve buying, selling, transporting and storing commodities, and is essential to stimulate production and to involve the people in a market economy. Unless this is done reasonably soon and in an efficient and effective manner, the broad base (masses of people) on which a long range security program is built will be weakened. See Chapter V.

4. That a staff and organizational structure be provided as soon as possible to carry out an expanded agricultural development program. The minimum U. S. professional and scientific personnel needed would be fifty-seven (57). Supplies, equipment, materials and service personnel would be needed in addition. Also, Lao counterpart personnel, supplies, materials, etc. would be needed. See Chapter VI.

The organization for U. S. agricultural forces is shown in Chapter VI and includes one man to head the total agriculture program. It would be composed of four major branches, (1) Research, (2) Extension, (3) Instruction and Training, and (4) Service and Regulations.

5. That an aggressive training program be implemented as rapidly as possible.

(A) Five hundred (500) Lao people should be trained as soon as possible to fill positions as RLG employees in Home Economics, Extension and other agricultural activities.



(B) Twelve (12) Lao men and women should be sent to the University of Hawaii East-West Center each year for the next five years to receive training at the bachelor's level in Home Economics, Agriculture and Livestock Production. If difficulty is encountered in recruiting Lao for agricultural training, the priority should be increased and the five-year time period extended.

6. That a new system of planning be inaugurated for agriculture and that more realistic plans and programs be developed. The recommended procedure is set forth in Chapter IV and involves a combination of the common sense and practical knowledge of the local village people and the scientific, technical and economic know-how of top professional personnel.

7. That the Rural Development Program be re-named and that provisions be made for more effective coordination of Community Development, Agriculture, Education and Health. These should appear side by side on the organizational chart along with an operational (housekeeping) unit and should report to the Director of the Mission, or someone designated by him. These administrators should form a team who would provide superior leadership for an aggressive, coordinated program to serve the people in community development, education, health and agriculture. See Chapter VII.

8. That the Mission use its influence to develop a workable RLG Organization to promote the growth, development and regulation of Lao Agriculture. A recommended organizational structure is set forth in Chapter VIII including the very important recommendation that agriculture operate at the Ministry level.

9. That more emphasis be placed on vocational training in the public school system and that more consideration be given to the development of secondary schools. It is extremely important that people who get a little schooling be able to get a job and become productive citizens. (Unofficial figures indicate that 6,000 individuals took the examination for teacher training, 3,000 passed, and 500 were all that could be handled in the training program. What happened to the 2,500 who passed, but could not be accepted and to the 3,000 who failed?) There is need for trained people such as bricklayers, carpenters, mechanics and people trained in agriculture.

Vocational schools should have placement programs to help their trainees find jobs. If U. S. and RLG programs are not effective in training people and, even more important, effective in helping these people get jobs and become productive, happy citizens, they will have failed in their efforts to provide for security, economic development and a free society.

10. That the Mission place more emphasis on getting its programs out to the people (down to the people). If the U. S. fails in this respect, it will have overlooked the most important long term security aspect of its total effort. In any undeveloped nation, there is always the danger that outsiders will work with the elite, the sophisticated, the educated and fail to reach and affect the lives of the masses of the people.

11. That the Mission give careful consideration to the location of roads since they are not only important to security but are an extremely effective instrument for economic development.

12. That the Cluster Program be continued as an effective organizational device for carrying out community development, agriculture, education and health programs and in supporting long term security efforts. It is my impression that it is not a very effective device for improving the short term security situation.