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SURVEY REPORT
COOPERATION IN, AND EVALUATION OF, PROJECT FOR
ESTABLISHMENT OF PILOT FARM IN THA NAGON,
LAOS

AUGUST 1974

JAPAN INTERNATIONAL COOPERATION AGENCY

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Preface

One thing is that a survey mission has been sent for this project at relatively frequent intervals and that the problems existent at each time of its dispatch and the measures to cope with them have been suggested to a fairly circumstantial degree. Another thing is that the length of time for the schedule of the latest survey was extremely limited. These two reasons, although the latest mission was considered a survey team, primarily made it necessary to conduct a survey with special emphasis placed on the fact that the existing agreement will expire as of next April, instead of adopting the methodology in which basic facts are accumulated one after another for the sake of evaluation in the basic sense of the word.

From this point of view, the survey was stepped up with special stress, first, on comprehensively sorting out and grasping the statue quo of the project and the major problems yet to be solved before and after next April and the measures to cope with them, while deepening common understanding between the Japanese and Laotian sides, and, second, on studying the background of what officials of the Laotian Government expect Japan to do in its cooperation and the significance of the cooperation, while the settlement of the problems is tied in with the issue of cooperation.

Although the length of time set aside for this survey was so short that there may be some sectors to which little reference is made in this report or a lack of understanding on the part of our mission, it is my sincere hope that a perusal of this report along with the other reports which have been previously submitted will be of help in enriching Japan's cooperation to Laos.

Last but not least, I wish to extend our most sincere appreciation to the Laotian Government, Japanese Embassy in Laos, experts dispatched, Asian Development Bank, Ministry of Foreign Affairs, Ministry of Agriculture and Forestry, and Japan International Cooperation Agency for their deep cooperation.

Kaoru MOTOHASHI
Head,
Survey Mission
Tha Ngon Pilot Farm
Laos

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Appendix

Minutes of the Meeting Held at the Asian Development
Bank in the Floor Conference Room Between Officers
of the Bank and Representatives of the OTCA on July
23, 1974, at 10:00 a.m.

Members of the Mission

Mission Leader:

Kaoru MOTOHASHI, director of Planning Division,
Kinki Agricultural Administrative Bureau,
The Ministry of Agriculture and Forestry

Irrigation Engineer:

Takashi TAUCHI, Deputy Director of Construction Division,
Kariyadagawa Irrigation Project,
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Agronomist:

Toshio YAMAMOTO, Advisory Chief of General Affairs Division,
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Irrigation Engineer (Coordinator):

Katsuhiko BIYAJIMA, Technical Inspector of Agricultural Projects,
Japan International Cooperation Agency (J I C A)

Summary and Conclusion

1. Status Quo of Project and Laotian Government's Response

(1) The development of paddy fields initiated in 1970 had come to a point where of the 800 hectares initially programmed, about 650 hectares were completed as of June, 1974, with the exception of some portion the development of which had been delayed due to the problems associated with land acquisition. Of the settlement of farm households which could set off against the area of about 650 hectares, 64 households are scheduled to settle in 1975 alone, and it is expected that along with the 256 households who have already settled before 1974, the settlement of a total of 320 households will be completed under a revised program.

(2) With respect to this project, item-by-item and professional expatiations have been given in the reports prepared by the three past survey missions, but the Laotian Government considers the major immediate questions in the following manner:

- (a) Irrigation: Although there has been a rise in the use of water due to the leakage of water from, and the inadequate land levelling of, paddy fields as it has not been so long since they were put to use for the first time, the Laotian Government sees it necessary to work for closer collaboration in the sectors of cultivation, irrigation and machinery and more powerful guidance to farmers on water control.
- (b) Dry Field Farming: Although there exist fluctuations in the market prices of rice, the Laotian Government does not have any intention of altering its basic cropping pattern of "rice and rice." Giving thought to a possible lack of water, however, the Government plans to introduce dry field farming in the transitional dry season.
- (c) Farmers' Organizations: Although it is maintained in some quarters that the organizations of farmers are well functioning, the Laotian Government hopes to organize eight groups for the farmers of the 256 farm households for the time being and encourage the positive participation of the farmers' representatives in making decisions on the selection of rice species and the purchase prices.
- (d) Maintenance and Custody of Farm Machinery: Some issues

have admittedly been posed as to the custody of resources and equipment in the past, to be sure, but the organizational setup has been changed and the division of farm machinery made independent to clarify the responsibility and avoid the repetition of the past errors. To raise the farm field work efficiency, the Government will see to it that the regular maintenance and daily check of machinery are conducted with strict discipline.

- (e) **Livestock Industry (Livestock Hygiene):** It has been pointed out that livestock hygiene is particularly problematical, but an independent system of responsibility will be established in the sector of livestock with full care exercised about the cleaning of livestock barns and other facilities. Livestock diseases will be dealt with the cooperation of District Officers.
- (f) **Treatment of Fields Yet to be Opened:** Of the 800 hectares of fields scheduled to be opened, about 150 hectares have not been completed yet due to the problems associated with land acquisition. This problem will be fully studied by the Laotian Government along with the state and provincial governments in the future.

2. Expectations on Japan and Views of Experts and Others Dispatched

(1) Officials of the Laotian Government consider the period extending from 1970 through 1975 to be the first phase of the project or the term for the construction of the foundations of farm management and hope to position the period stretching from 1975 to 1980 as the second phase of the project or the period to step up farm management on a full scale. On the basis of this basic philosophy, the Laotian Government hopes to place emphasis on the settlement of problems associated with (1) irrigation (measures to cope with the lack of water), (2) farm implements and their maintenance, (3) expansion of the rice storage facilities, and (4) maintenance of fertilizer, farm chemicals and other resources.

(2) With respect to Japan's future cooperation, the Laotian Government pins high hopes on Japan in the following matters, to say the least of the offering of materials and equipment:

(a) Concept of Pilot Farm

Under the existing agreement, the pilot farm is set at 100

hectares in area. As it would be difficult to draw a line between this area and the remaining portion, it is hoped that cooperation be extended for the whole area of this project.

(b) Assurance of Resources and Equipment

Under the erstwhile technical cooperation and gratuitous aid programs, farm machinery enough for about 200 to 300 hectares of farm land have thus far been offered. The Laotian Government hopes that Japan will offer large tractors, threshers and sprayers on an 800-hectare basis. As the supplying of fertilizer and agricultural chemicals from the supplying source (ADO) is unstable, the Government hopes that Japan will continue to supply them in the same way as farm machinery.

(c) Studying of Counterparts in Japan

The Laotian Government hopes that this program will be continued primarily in the sector of farm work propagation and irrigation.

(d) Dispatch of Japanese Experts

It is hoped that a total of six persons, including irrigation, extension (an expert of farmers' organizations rather than an ergonomist), farm machinery and construction experts, and a liaison officer will be sent in from Japan in addition to a project leader.

(e) Period of Cooperation

The period extending from 1970 to 1975 is the first phase of the project or the period for construction, whereas the term extending from 1975 to 1980 is the second phase or the period for the promotion of farm management on a full scale. Consequently, it is hoped that the period of cooperation be set about five years.

(3) The views expressed by the experts dispatched to Laos may roughly be classified into two types. In one type, apprehension is expressed about the response of the Laotian side, whereas the other concerns the views on the status quo of the project.

In the former type, the way the agreement has been observed is called to account. Of the 800 hectares of paddy fields to be developed under Article 1 of the agreement, about 150 hectares remain undeveloped.

There are no signs for an improvement in the way the Laotian Government stands the expenses for the management of the farms (under Article 7 of the agreement). As regards the control of the farms (under Article 9 of the agreement), the sectors of farm machinery and livestock have been separated from the jurisdiction of the director general. There also seems to be apprehension about whether the immediate tasks enumerated in 1, above, may be dealt with precisely as have been pledged by the Laotian side. Many of the experts also have thought it regrettable that the recommendations and suggestions made by experts are not followed to the full measure.

In the latter, the last settlement of farm families in the already developed farm fields which measure about 650 hectares is scheduled for 1975 and, consequently, the next two or three years will be an extremely important period for their settlement. In this sense, there will be a need for the continuity of some form of cooperation or the other.

In a nutshell, the experts are of the view that now that there arises a willingness to strive for self-help in spite of the existence of some technological apprehensions in each sector, the expiry of the existing agreement should be taken as the end of one phase in cooperation and cooperation should be continuously extended so as to encourage their self-help to a further extent. With respect to the continuity of cooperation, many of the experts consider it desirable to draw a more distinct line between what should be done by Japan and the things to be done by the Laotian side.

(4) The Japanese Embassy in Laos assesses that the Tha Ngon project, leaving reasoning out of the question, has been progressing in a successful manner. With respect to future cooperation, the Embassy considers it advisable to put a period to the existing program of cooperation and watch developments, while providing after-care, even though there is a need to study the possibility of setting up a mechanization center or broadening the area, including its peripheral communities, to which cooperation is extended, in order that a further effective utilization of the past achievements may be assured.

On our way back to Japan, we stopped in at the Asian Development Bank for an exchange of views. Its views on the project are the same as described in the Tentative Note of the survey mission, which is attached to this report as an appendix. The Bank sees the need to supply resources and equipment enough for the total area of 800 hectares in some way or the other and considers that high hopes are pinned on Japan.

3. Formula of Future Cooperation

(1) There are some questions yet to be solved as have been pointed out by officials of the Laotian Government, to be sure, but the fact stands that the construction period or the first phase of the project is to come to an end in any event. Now that the foundations which make it possible to yield the second crop and put large machinery to use, special emphasis will probably have to be put on the institutionalization of a system of farm management fitted to the realities of this area at an earliest possible day, while making full use of the achievements gained in the endeavors for the preparation of the foundations, in order that this system may be smoothly disseminated and the settlement of farm families encouraged.

(2) In this instance, there will naturally exist many difficulties. The background against which this project stands is indeed stern, when thought is given to the status quo of agriculture in Laos, where the instable prices of rice are often influenced by fluctuations in the prices of Thai rice, where the physical distribution system hardly becomes accustomed to the new species of rice, where the system of supplying fertilizer, agricultural chemicals, farm implements and other resources and equipment indispensable for modern agriculture is not maintained to a satisfactory extent, where rain-fed paddy fields and cow cultivation are dominant for rice plantation, and where scorched-field agriculture is still widespread. There is hardly any need to point out that it is categorically imperative to improve all these conditions, to be certain, but the fact remains that this project is placed under these conditions and that the problems posed under these conditions have to be solved in a manner suitable for the realities of this area. The acquisition of the remaining 150 hectares, water control and organization of farmers would be totally inconceivable without paying heed to the behavior pattern of farmers and the social setup.

(3) In the light of the foregoing as well as the present situation in which the Laotian side is striving to exceedingly enhance independence in the management of the project and other sectors, the basic posture for future cooperation should be to put a period to the existing style of cooperation, leave as many things to the Laotian side as practicable, watch developments with warm-heartedness and use this transition period in working out a posture for future cooperation.

Japan's cooperation to the Tha Ngon area, including its refuge villages, has already become something quite unforgettable for the Lao people along with the achievements made in the construction of the Namg Dam. In a long-range perspective, there seems to be a need to study the

possibility of further replenishing cooperation to this region, but we are rather inclined to look upon the next two or three years as a period in which developments should be calmly watched.

(4) The itemized requests made by officials of the Laotian Government during the visit of our mission suggest this orientation. The requests evolve mainly around the supplying of fertilizer, agricultural chemicals, farm implements and other resources and equipment, water control, dissemination (farmers' organizations) and training of Lao technicians in Japan, and the dispatch of Japanese experts has been limited to specific sectors.

When the views of the Japanese Embassy in Laos, experts sent to Laos and the Asian Development Bank are analyzed in all aspects, it may well be said that indirect cooperation will generally be the right path to follow in the future. With respect to the itemized requests made by the Laotian side, there is a need to study the following points:

- (a) Whether it will be feasible to supply resources and equipment enough for an area beyond the pilot farm is directly tied in with the budgetary issue. If they should be offered at all, it will be necessary to (1) clarify in effect that the offering of this much of cooperation is totally impracticable under the existing agreement, and (2) limit the period in which this cooperation will be extensible. The Laotian side seems to suspect that what it considered could be extended under the existing agreement has not actually been provided. To dispel this possible suspicion, it will be important to clarify the period in which cooperation is actually extensible and encourage their endeavors for self-help, so that mutual trust may be strengthened and the efforts for cooperation may bear fruit, thus enabling the project to result in success.
- (b) There are some problems yet to be studied in connection with the dispatch of experts.

The establishment of a system of modern rice cultivation suitable for the region is quite indispensable for this project. The problems concern whether there would be technological misgivings in the sectors of rice plantation and farm machinery without the dispatch of experts; whether there would be misgivings about livestock hygiene in the sector of livestock which has successfully be put on the right track; whether the experts sent in from Japan would be able to display their full force in the sector of dissemination of the project, or

farmers' organizations, the importance of which increases in the future and which is closely tied in with the internal administration of Laos; what steps would be taken for dry field cultivation, the necessity of which is to be definitely felt in the future; and whether there would be a need for a continuity of the sector of construction equipment at a time when the construction program has generally come to an end.

In any event, it would seem to be important to leave the management of the project and the dissemination of the project, even if there existed some misgivings, to the Laotian side in deference to their own position and limit the role of experts to be dispatched from Japan to the one in which they would provide their know-how only when they were asked to do so. In this connection, it would be necessary to enhance the Laotian side's trust in Japanese technology, such as by dispatching experts to an institution which serves as the core of technology and research. In order to create an atmosphere where each expert sent in from Japan may display his full force under this and other projects and to study the way in which Japan's long-range cooperation should be, it would be seem to be of much significance to set up an advisory organ to the administrative branch.

- (c) With respect to cooperation in the immediate future, it would be appropriate to set this period at two or three years, when consideration is given to the time of the last settlement of farm families as well as the length of time required for a study of the formula of cooperation based on a long-range perspective, as have been suggested in many quarters.

Chapter 1: Status Quo of Project

1-1 Status Quo

1-1-1 Pilot Farm

The pilot farm measuring 100 hectares in area could not be developed in the area specified in the original plan. This is because the compensations for the landowners could not be smoothly solved in conjunction with the development of 800 hectares of farm land under the Tha Ngon project, thus making it impossible to bring the area under cultivation and develop paddy fields.

On the other hand, an embankment encircling the 800 hectares of farm land, pumping stations for irrigation, main drainage canals, drainage pump stations, and roads were begun to be constructed in November, 1970.

First, the construction of the embankment was carried out during the dry season from 1970 to 1971. In 1971, the construction of the embankment began and at the same time the development of parts of the area was conducted and part of the pilot farm was completed. In 1972 through 1973, the development of the irrigation and drainage pump stations was initiated and the construction of a flood control dam was begun. With the completion of the 100-hectare pilot farm in 1973, the development of the greater part of the area was conducted. This development work had been almost completed by June 1974. In other words, the development of 650 hectares, or 80 percent of the paddy fields originally planned had been completed, thus enabling the constructionists and consultants to return home.

When part of the pilot farm had been completed, six hectares were set aside for the development of a test farm to be placed under the direct management of the Tha Ngon Agricultural Project (PDAT) for the demonstration and training of rice plantation and the collection of seeds as well as the experimentation of dry field crop. This directly managed test farm has thus far been expanded to 15 hectares. For this reason, the farm field of the former Lao-Japanese agro-livestock center has now been put to use as a field of feedstuff for the cattle supply center, thus playing a role in the self-sustenance of feedstuff for cattle.

Thus, the former Lao-Japanese agro-livestock center is being put to effective use for the office of the Tha Ngon Agricultural Project, the farm machinery repair shop and the agro-livestock supply center and its feedstuff field. At the pilot farm, 15 hectares are set

aside for demonstration, test and seed farms, and this area will eventually become a technical center for the 800 hectares of paddy fields.

Since an agreement for technical cooperation was concluded between the governments of Laos and Japan on April 13, 1970, a total of 16 experts in nine different sectors have been dispatched to Laos, and the resources and equipment which will have been offered to the Laotian Government are worth ¥123,820,000 (US\$410,000). Technicians of the Laotian Government are also studying in Japan under the agreement. Participating also in this project are members of the Japan Youth Overseas Cooperation Corps, who are contributing to the promotion of technical cooperation.

1-1-2 Cropping Pattern and Farmhouse Management

The heavy fall in the prices of rice from 1970 through 1972 posed a question as to the advisability of revising the cropping pattern. This is because the originally planned rice price of US\$65 per ton dwindled to US\$32 per ton, lower than the US\$60 indicated in the Appraisal Report of the Asian Development Bank. Hot discussion was occasioned on the reason for this drop, but it was decided to study whether farm management, as the first group of farmhouses moved in for farm management in 1972, could be conducted in a sound and healthy manner without interfering with the liquidity of agricultural credit.

According to this decision, a group of local experts took the lead in studying the possibility of cultivating crops other than rice and their adaptability to Tha Ngon, with the trial computation of a balance sheet of farm management resultant from the cultivation of other crops checked for many cases. On the basis of these studies, a study team was sent to Tha Ngon in February 1973 and re-examine the cropping pattern.

The fluctuations in the price of local rice, as indicated in Fig. 1 of the 1973 Report, are such that the price was at rock bottom in 1971 and then showed signs for an upturn. The reason is ascribed to the lack of food resultant from global weather abnormalities and also to the high rise in the price of rice. In particular, the prices of farm produce yielded on the Vientiane plains are influenced to a great extent by those which prevail in the northeast region of Thailand. The Vientiane plains through which the middle reaches of the Mekong River runs and the northeast region of Thailand constitutes one and the same economic sphere. This area tends to be influenced by Thailand which is more advanced in terms of technology and yield. With respect to the price

of rice, the rice cleaning mills and other facilities in the northeast region of Thailand produce a dominantly powerful effect. As indicated in Fig. 1 of the report published in March 1973, the price fluctuated in parallel with that of the northeast region of Thailand.

The price of rice (unhulled) which currently prevails in the city of Vientiane is US\$100 to 110 per ton, about three times as high as in 1971. It may be said that farm management with rice cultivation is the most stable form of farm management at present. Consequently, the cropping pattern of "rice plus rice" may be considered fitted to this area.

With respect to the species of rice, the new species of IR did not produce a satisfactory result in the rainy season of 1973, so that Sampatone, an improved version of a local species, was introduced. This species, fitted to the taste of the Lao people, has thus far excelled in commercialization and does not seem to require sophisticated cultivating technology. However, there is some limit to the yield (3.0 to 3.5 tons per hectare at best). With the exception of the supply and demand of rice for consumption by the producing farmhouses, therefore, it will be necessary to study the possibility of introducing the IR and other new species, which assure a higher yield. Particularly, the introduction of salable new species to the dry season is advisable, granting that there arise a variety of questions. The introduction of green manure in the transition period between the dry and rainy seasons is desirable for the maintenance of soil fertility. It would be unavoidable if this step could not be taken due to the existing work system.

Furthermore, farm management should incorporate livestock (the raising of pigs and chickens) as an additional source for cash revenue. Now that a hog and chick supply center has been maintained, for this purpose, it is desirable that the farmhouses which have a great reserve of energy will study the possibility of gradually shifting from the single crop of rice to multiple farm management.

On the other hand, the next question concerns inputs for rice plantation. Up to now, the Agriculture Development Organization (ADO) has played the main role in supplying fertilizer and agricultural chemicals. Equipment for the ploughing of paddy fields are supplied mainly by the Japanese Government, and the shortage is filled up by those which are offered by other institutions and on loan from private sources. The supplying is so unstable that the preparations tend to be retarded at all times. Consequently, arrangements should be made in the future so that the preparations may be completed before the start of the ploughing work. The quantitative assurance of these inputs and the stabilization

of their prices are indispensable, and their supply should be systematized to facilitate their acquisition by farmers.

1-1-3 Organization of Farmers

With completion of 24 hectares of paddy fields in 1972, the first group of 12 farmhouses moved in for cultivation. Since then, a total of 256 farmhouses had begun the management of new farms before the rainy season of 1974. Their settlement is statistically enumerated in the following table:

| | '72 | '73 | '74 | '75 | Revised program | Initial program |
|--------------------------------------|-----|-----|-----|-----|-----------------|-----------------|
| Paddy fields developed (in hectares) | 24 | 136 | 352 | 128 | 640 | 800 |
| Farmhouses immigrated | 12 | 68 | 176 | 64 | 320 | 400 |
| Test farm (in hectares) | 6 | 9 | - | - | 15 | |

Of 352 hectares (176 farmhouses) in 1974, 108 hectares (54 farmhouses) were allocated to dry field cultivation exclusively in 1974 due to a delay in the development of branch canals.

A yearly classification of the farmhouses thus far immigrated is as follows:

| | 1972 | 1973 | 1974 | Total |
|--|------|------|------|-------|
| (1) Farmers whose houses were buried under water due to dam construction | | 27 | 26 | 53 |
| (2) Former cultivators in the area | 12 | 39 | 57 | 108 |
| (3) Children of (1) and (2), above | | | 84 | 84 |
| (4) War veterans | | 2 | 9 | 11 |
| Total | 12 | 68 | 176 | 256 |

The initial program envisioned the Tha Ngon project as a model for the future agricultural development of the Vientiane plains and aimed at allowing the settlement of applicants from the skillful farmhouses possessed of certain amounts of funds. In actuality, however, 95 percent of the farmhouses thus far immigrated, as shown in the above table, constitute those to whom compensations had to be made (the farmhouses buried under water due to the construction of a dam and the former cultivators in the area), and it is feared lest there should be some delay in the development of a model farm.

These immigrated farmhouses which included 80 farmers established a Tha Ngon Farmers' Association in 1973. They elected executives of the Association and also delegates for the villages from which they had come from. They also organized four groups of farmers by branch canals.

With the addition of new immigrants in 1974, the farmers' endeavors for organization resulted in the formation of eight groups with 256 persons and they appear to broaden their activity step by step. Here, there is a need to clarify the purposes of their endeavors for organization. With their organization becoming growingly large, it is necessary to pay heed to the system of transmitting information to the grass roots, which after all is tied in with the activity of the P.D.A.T. officials for the diffusion of farm work, as the whole project is likely to come to a standstill due simply to a complaint which may arise from inside their organization.

1-1-4 Summary of Tha Ngon Project

Due to the promotion of the project by the Ministry of Economic Planning and the Vientiane Development Agency as well as the Tha Ngon Agricultural Development Project Office and the technical cooperation rendered by a group of Japanese experts, technical cooperation in the development of a pilot farm under the Tha Ngon project appears to have come to a generally successful end. Credit must go to the Laotian side for its understanding about the technical cooperation extended by the Japanese Embassy in Laos and other agencies of the Japanese Government.

It is a fact, however, that de facto administration is being conducted for the entire 800 hectares of paddy fields. Whether the entire 800 hectares may be developed is the yardstick for an assessment of the whole Tha Ngon project; the successful development of a 100-hectare pilot farm alone could in no way be construed as the attainment of the ultimate objective unless the entire 800 hectares were developed in a successful manner.

Certainly, it will do well if cooperation is rendered for the development of 100 hectares within the framework of the existing agreement, but now that the Laotian Government has requested for an addition

of technical cooperation (i. e., an extension of the agreement) for the development of the entire 800 hectares, there will be a need to work out a response while paying heed to the way cooperation to Laos should be in a long perspective.

Due to the favorable results obtained from rice plantation in the dry and rainy seasons of 1972 and 1973, increasingly high hopes are pinned on the development of 800 hectares of paddy fields. However, there would arise a variety of problems if the actual experiences gained from the development of a pilot farm, which after all is small in dimension, is expatiated for the development of the entire area. Individual problems will be introduced in 2-2, later, but as there exists an unknown sector in which we have had no experience, such as the way the problems should be dealt with and the two crops which may be yielded on large-scale farm fields, there still remains the necessity of extending cooperation in the promotion of the future phase of the project.

Of late, other countries have begun to extend a variety of assistance and cooperation to the Laotian Government, and it is understood that advanced countries have expressed their readiness for assistance in the Tha Ngon project. Now that cooperation to Laos has taken on an international character, it would be worthwhile to look upon it as one way of achieving the project for each country to join in extending assistance and cooperation for the continued assurance of a stable farm management by the immigrated farmhouses. Equally, it would be of much significance to utilize this approach in scrutinizing the measures for technical cooperation in the future.

Now that the project has thus been assessed by other countries and an extension of the Japanese Government's technical cooperation has been requested, it will be necessary to work for an extension of technical cooperation in some form or the other. In extending another phase of cooperation, there will be a need to ponder over the past achievements to the full and make requests, if any, to the Laotian Government in due form. Unless cooperation was extended after a fulfilment of these conditions, there would arise a doubt about the cooperation itself. There will also be a need to make renewed efforts so that the understanding formed between the governments of Laos and Japan may not fall to pieces. It is to be hoped that the management of the project will be continued on the basis of faith and understanding between both countries while they make efforts as far as they can with a full recognition of their respective positions and systems.

1-2 Problems and Laotian Government's Response

The agreement for the establishment of a Tha Ngon pilot farm came into force in April, 1970 and is scheduled to expire in April, 1975. In the following, we will describe what problems are posed in conjunction with the Tha Ngon project promoted in the last four years and the views of the Laotian Government and the Japanese experts dispatched there on these problems.

1-2-1 Water Control

The drop in water depth registered up to the rainy season (the end of July through that of November) in 1973 had been about 20 millimeters per day, two times as much as the 10.5 millimeters per day initially planned. Presumably, this is due to the excessive water permeation resultant from the immaturity of the paddy fields. In Japan, too, there are cases in which the water depth of paddy fields drops immediately after the opening or upon completion of their maintenance work. Some five years of cultivation, however, will help the formation of a plowsole, which will become a layer not so good in water permeability, thus assuring a stable quantity of water for consumption. In Tha Ngon, too, mechanized ridging and plowing will presumably enable the drop in water depth to come gradually to about 10 millimeters a day. In this transition period, consequently, it is essential that an order of irrigation should be established to offset the lack of pumping capacity, that the period of ridging which calls for a large quantity of water should be extended, and that the small lateral canals proposed strongly by local experts should be developed.

Then there is a question about the leakage of water from the regulating reservoirs and canals. It is indispensable that the slopes should be repaired with scrupulous care and that the weeds should be removed to facilitate the flow of water.

The essential thing is for every immigrated farmhouse to come to realize that water in their paddy fields is indeed precious in that it has been pumped in at high electric cost. Guidance should be provided to the immigrated farmhouses so that this precious water may be distributed in an orderly manner and that their canals and division works may be properly maintained by farmers themselves. The clayey soils, such as at Tha Ngon, are such that once they become arid, the ground will open in great fissures and their saturation during the irrigation period will call for an unusually large quantity of water, thereby bringing about a great drop in the plowing capacity of farm machinery. For the conservation of irrigation water and the effective utilization of farm machinery, consequently, it will be important to complete the preparations for next-

phase cultivation during the period when there remains a large quantity of water in the soils.

With respect to the conservation of water, therefore, the essential thing is to work out a yearly rice plantation program while establishing a close contact among the three sectors of rice plantation, irrigation and farm machinery.

The question of irrigation water is of the greatest interest to the Laotian Government, which is striving to find some solution or the other. A scrupulous policy is being taken for rice plantation at the time of the immigration of the last group of farmers, the big task the Laotian Government has to grapple with in the immediate future is how to assure an effective irrigation for the vast paddy fields with a limited quantity of water available there.

1-2-2 Dry Field Cropping Test

With 1971 as a turning point, the prices of rice have been on the upturn due to a global shortage of food. Rice may be described as the most stable crop as long as the prevailing prices are maintained. The cropping pattern of "rice plus rice," as suggested in the March 1973 and April 1974 reports, does not need any alteration at the present stage. At the joint meeting held with the participation of staff officials of the Asian Development Bank in March 1973, it was suggested that a cropping test on dry fields should be carried on in some form or the other. The test began at the time of a heavy fall in the prices of rice in 1971. In an attempt to identify crops of the kind which is more profitable than rice, there is a need to continue a dry field cropping test, even though on a limited scale, in preparation for a possible instability of the rice prices.

Tha Ngon has a market in the city of Vientiane. The introduction of small-scale dry field cultivation for cash revenue would presumably be impracticable in the light of the technology and manpower of the immigrated farmhouses at present, but it is important to carry on a dry field cropping test in preparation for the initiation of multidisciplinary management in the future.

At the present time, the Laotian Government does not have dry field cultivation in mind for this area. It was pointed out that the Government was considering authorizing dry field cultivation for some part of this area which would not be submerged in irrigation water during the dry season of 1974, but it is to be hoped that a dry field cropping test will be carried on for future's sake.

1-2-3 Farmers' Organizations

A Farmers' Association was organized with the participation of all 80 farmhouses in June 1973. The elected executives of the Association formed four groups according to the branch canals. At present, 256 farmhouses, including the newly immigrated farmhouses, are engaged in a reorganization of the Farmers' Association and studying the possibility of dividing it into eight groups.

The functions of the Farmers' Association in the future will encompass a wider range of activity, such as the funds for farm management, supplying of resources, storage, processing and sales of farm produce, maintenance and control of farm facilities (pumps, irrigation and drainage canals, roads, etc.), supplying of daily necessities, and education and training on agriculture.

It is understood that (1) the prices of rice to be purchased by the Tha Ngon Agricultural Development Project Office (PDAT), (2) the repayment in kind of the resources and equipment used for farm management, and (3) the repayment of the funds utilized for living expenses have been discussed as the lines of business of the Farmers' Association. Nevertheless, there has been argument as to whether the discussions were really conducted in such a manner as to fully reflect the views of farmers on the proceedings. The lines of business of a farmers' association should encompass not only the transmittal of decisions made by PDAT but also the determination of the purchase price of rice, PDAT's storage, processing and sales and the use of the balance between the purchase and delivery prices. To enhance the farmers' awareness of participation, it is desirable that these tasks should be gradually transferred to the Farmers' Association, in which the farmers will have to play the leading role.

These tasks are only one part of the activity of a farmers' association and yet an essential ingredient. They should be further replenished, and the lines of business should incorporate the lending and collection of resources, equipment and funds for farm management, rental, maintenance, and control of farm machinery, maintenance and control of pump and other farm facilities and collection of the fees for their control. These tasks should gradually be transferred from PDAT.

In any event, there is a need to work out a statute of association by which their organization will be obligated to carry out these lines of business.

The Laotian Government's measures for the Tha Ngon farm give the impression that the farm will be kept under the direct jurisdiction of PDAT as in the past. It is desirable, however, that the matters pertinent to self-management and control by the farmers should be transferred to the Farmers' Association when it comes to maturity and that the participation of representatives of the farmers in conferences of PDAT and in the management and control of the Tha Ngon farm should be encouraged for their guidance and training in the transition period.

Another immediate question concerns a raise in the percentage of farmers holding membership in the Farmers' Association in proportion to a rise in the number of immigrated farmhouses. It also concerns a quantitative raise in the delivery of farm produce from farmers (in the percentage of utilization of the Association). Tied in with this question is the establishment of a storage house for the farm produce to be purchased by PDAT. The trial computation conducted by Japanese experts suggests the need for two warehouses, each with a floor space of about 450 square meters.

Then another question is related to the establishment of an assembly hall where seminars may be held for immigrated farmers and the Association may hold general meetings. For the development of a farmers' organization, it is indispensable that an assembly hall consisting of about three buildings should be built to deepen intimacy among the immigrated farmers and also to discuss and study a variety of problems. The Laotian Government is exploring the possibility of its establishment.

1-2-4 Maintenance and Control of Farm Machinery

With respect to farm machinery for use on the 100-hectare pilot farm, it has been made a basic rule to loan it to each immigrated farmhouse, and the farm machinery that has been offered centers around cultivators. For cultivation in the dry season, the soils in this area are so clayey that there has arisen a need for the employment of large-sized tractors (over 55 HP) in the initial tilling and other types of work. Here, it is necessary to combine large-sized tractors with cultivators in working out a system for the mechanization of farm work.

At present, there would be no problems for the pilot farm, to which large-sized tractors have been offered. For the entire 650-hectares Tha Ngon farm, the Laotian Government to prepare seven large-sized tractors (of which two have already been offered). Some of them will be offered by the Japanese Government under the K. R.

program. Consequently, the formulation of a system of mechanization for the entire 650-hectare Tha Ngon farm and the filling up of the lack of machinery are at issue. Insofar as the framework of the existing agreement (100 -hectares) is concerned, farm machinery is offered to an adequate extent, but the availability of farm machinery -- particularly, large-sized farm machinery, to areas other than the pilot farm is at issue.

With respect to the control of farm machinery, there may be argument as to whether it has been conducted to the full measure in the past. The machinery offered as of April 1974 is enumerated in Table 3-1 of the April 1974 report. Particularly, it appears that mechanical troubles frequently break out and the length of durability is curtailed due to the improper handling of farm machinery and the failure to conduct its daily and other regular check and maintenance. With a massive quantity of farm machinery offered under the K. R. assistance program in 1974, the maintenance and control of farm machinery have become further intricately. For this reason, a variety of studies are under way so that the maintenance book for each machine may be kept up to date and its control may be replenished with each machine tied in with the name of the operator.

With respect to the control of these farm machinery, the Laotian Government is working for a reorganization so that a clearer system of responsibility may be assured for the maintenance and control of farm machinery and the control of component parts, now that there has been a rise in the number and type of farm machinery, and high hopes are pinned on the Laotian Government's achievements in this sector. As regards the lack of farm machinery for the entire 650-hectare Tha Ngon farm, the Laotian Government is hopeful that the Japanese Government will offer it in some form or the other, and the availability of farm machinery for rice plantation in the next dry season has posed a question.

1-2-5 Livestock

The facilities available at the former Lao-Japanese agro-livestock center (which is serving as a branch farm under the terms of the existing agreement) have been instrumental in satisfying the demands from immigrated farmers for the supplying of hogs and chicks in terms of number and species. Those species of chicks which may be bred with unsophisticated raising technology, which may bear up against diseases, which may be raised with unrefined feedstuff and which are fitted to the natural conditions of the area have been selected and distributed. A certain quantity of feedstuff for the center is assured

by making use of the feedstuff fields of the former agro-livestock center.

One thing that has to be called to account concerns the measures for the protection of livestock from epidemics. The question is related particularly to the constant availability of equipment, and the maintenance of technology, for the minimization of hazards from contagious diseases, as well as PDAT's readiness.

As it is difficult to assign specialists in livestock hygiene exclusively to the Tha Ngon area, the Latioan Government is planning to deal with livestock hygiene and disease prevention under the guidance of district officers. The important thing, however, is the Laotian Government's consciousness of the question of livestock hygiene and the training of specialists.

1-2-6 Treatment of Undeveloped Fields in the Area

Initially, the project was undertaken with a view to developing an 8.8-kilometer encircling embankment, installing three 32.4 m³x16.4 m (head) irrigation pumps, constructing 8.5-kilometer main canals and 4.5-kilometer branch canals, and developing 800 hectares of paddy fields. While the development work was steadily underway, the project met opposition from some landowners, thus making it impossible to develop about 150 hectares. At present, there is no other alternative but to exclude it from the total area initially planned. (See Fig. 1)

There is apprehension that the exclusion will make some of the aforementioned facilities excessive. It is also feared that it would be too much for the farmers, whose paddy fields total 650 hectares, to be compelled to share the expenses for the development, maintenance and control of all these facilities. This step, if taken at all, would pose a question in terms of effects of the initial plan and stable farm management.

As regards to a possible expropriation of the 150 hectares of land, the Laotian Government had in fact made strenuous efforts but could not resort to it as it had given consideration to the financial position of Laos and a possible impact on the development of other regions. Looking upon the development of the remaining area as a question to be solved by the Laotian Government, including the state and provincial governments, the Laotian Government has the intention of finding a solution, while developing it in some way or the other, designating it as an area for beneficiaries, and having them share the costs for the project as well as its maintenance and management. This is a question

to be solved within the Laotian Government, but it is to be hoped that some responsibility may not be shifted to the farmers who operate the existing 650 hectares of farmland.

1-2-7 Cost for Management of Tha Ngon Farm

For the management of a newly developed 30-hectare pilot farm in 1972, the Japanese Government offered a gratuitous loan of 26,000,000 kip to the Laotian Government. Known as the Tha Ngon Special Fund, this loan was put to use as an operating fund.

The Tha Ngon Special Fund has been made available in two forms: funds for the construction of the pilot farm and other facilities and the management of fields, and loans which are extended for the settlement of farmhouses and repaid after yields.

In 1973, a total of 19,500,000 kip was offered for the construction of storage houses for farm produce and loaned to newly immigrated farm houses.

These funds are the expenses to be paid by the Laotian Government, insofar as the agreement is concerned. The budget earmarked for the management of the Tha Ngon farm by the Laotian Government has been practically the same for each year. With respect to the scope of activity of PDAT, the completion of a 100-hectare pilot farm and the gradual development and immigration of other farms have resulted in increasing the volume of business assigned to PDAT to a point where it no longer is able to assure a reasonable management with the same amount of budget for every year.

To balance the increased volume of business with the budget, it is necessary for the Laotian Government to make efforts for a solution and see to it that an unsatisfactory management of the Tha Ngon farm will not lead to an ineffective use of the fields that have thus far been developed, thereby placing the immigrated farmers in an embarrassing position.

1-2-8 Problems about Existing Agreement

In the event that the existing agreement expires as of April 22, 1975, and additional cooperation is to be extended in some form or the other, there will be a need for both countries to work for a smooth management in the future on the basis of deep mutual trust and minimize

troubles in the local area, as it has been pointed out in the local area that the following provisions by which the Laotian Government should have abode in accordance with the existing agreement have not actually been faithfully observed.

Article 1, Paragraph 1:

The development of 800 hectares of paddy fields was initially planned, but the fact that 650 hectares have been developed suggests the embankment, irrigation pump stations, canals, roads and other facilities are excessive in scale, so that the Laotian Government will have to find a solution to the question of land expropriation as soon as possible.

Article 4, Paragraph 2:

The profits gained from the utilization of the resources and equipment that have been offered to Laos must be clarified. The profits should be made available for the implementation of the Tha Ngon project.

Article 7, Paragraph 1 (a):

One director general should be selected from the staff of the Laotian Government according to Annex III of the agreement, but there are three directors at present, thereby proving a hindrance to the management of the project. One project director should be appointed.

Article 7, Paragraph 2 (c):

The cost for the management of the items contained in Annex V necessary for farm management is not shared to the full measure, thus making it impossible for a smooth management.

Article 9:

The formulation and implementation of an operating plan of the farm must be conducted in close cooperation with Japanese experts according to the agreement. For its implementation, there is a need to give full consideration to the views of experts in the future.

Chapter 2: Formula of Future Cooperation

The views of our survey mission on the way the formula of future cooperation should be do not differ from those of the Japanese Embassy in Laos and the experts dispatched to Laos. Thanks to the efforts that have been made by various quarters since the conclusion of the existing agreement, the 100-hectare pilot farm is to be completed practically as initially planned. Consequently, it may be said that the existing agreement is to come to an end next year in general as initially arranged. The Tha Ngon project is essentially a project of the Laotian Government, and it is to be hoped that the agricultural development of the remaining 700 hectares with the exception of the pilot farm will be conducted by the endeavors for self-help on the part of the Laotian Government.

However, the Laotian side has strongly called for cooperation from Japan for the development of the entire 800-hectare project area, and the Asian Development Bank has also expressed views in support of this necessity.

Judging from the fact that the project of providing guidance on farm management for the entire 800 hectares is half finished, the survey mission sees it necessary to provide assistance for the development of the entire 800 hectares in some form or the other.

For the execution of the matters which are not contained in the existing agreement, there will be the necessity of concluding a new agreement, and the survey and negotiation for this agreement will require a certain length of time. It will therefore be impossible to complete all these formalities by April 1975. The expiration of the existing agreement in April 1975, however, will definitely prove to be a minus factor when thought is given to the status quo of Tha Ngon. There is a need to study the formula of future cooperation, including the possibility of enlarging the substance of assistance and the area of development to some extent, while the planners have a continuity of assistance in mind.

(1) The Laotian side has expressed its hope to set the period of continued cooperation at 1975 through 1980, but the survey mission considers it appropriate to set it at two or three years, during which time the immigration of the fourth group of farmhouses is scheduled for 1975 and by the end of which agricultural technology will have generally been mastered in this area.

(2) The training of counterparts in Japan is indispensable. The training should be conducted in Japan as in the past. The survey

mission told the Laotian Government that the persons who have completed the training in Japan should be assigned to the Tha Ngon area for a certain length of time.

(3) The dispatch of six experts has been requested by the Laotian side, but the views of the survey mission are as follows: The survey mission is in agreement with the Laotian side for the dispatch of three persons, including the mission chief, one irrigation specialist and one liaison officer. A specialist in farm machinery is not included in Annex I of the existing agreement, but he should be added to the annex to provide assistance in the formulation, control and management of a system of farm mechanization. As for the Laotian side's request for the continued dispatch of a specialist in construction machinery, this necessity cannot be recognized now that the construction work has come to an end. This view has been delivered to the Laotian side. In conjunction with the dispatch of a specialist in rice plantation, there are problems yet to be solved about the second-crop plantation and the attainment of the scheduled yield, whereas it is still difficult for the Laotian side to stand by itself in the sector of livestock hygiene. For these reasons, it is necessary to send specialists in rice plantation and livestock.

Whether a specialist in the organization of farmers as requested by the Laotian side will be dispatched from Japan is tied in with the issue of internal administration which will have to be solved by the Laotian side. The issue include, among other, the repayments by farmers in the Tha Ngon area and the procurement in kind of funds for farm management.

It transcends the existing agreement to provide assistance for the development of the entire 800 hectares. If it should be done so, the premise will be the conclusion of a new agreement between the governments of Laos and Japan. Before the conclusion of a new agreement, it will take a considerably long span of time, in general terms, to sort out the purposes of cooperation, check its methods and hold negotiations on the substance of the agreement. In the present case, therefore, full preparations cannot be conducted in a short period of time left before April 1975 when the existing agreement expires and it will be impossible to conclude a new agreement before that month. The cessation of cooperation with the expiration of the existing agreement, when thought is given to the status quo of Tha Ngon and the possibility of future development, is likely to be a major minus factor. With respect to the substance of assistance under the existing agreement, there is a need to study a formula of cooperation for the future.

(4) In any event, we propose that a formula of cooperation for the future will be determined as soon as possible, as it produces a great impact on the policy and substance of cooperation by Japanese specialists, the Laotian Government's response as well as the preparations to be conducted in Japan before April 1975 when the existing agreement expires.

In the following, the matters worthy of special mentioning are enumerated:

(1) The estimated balance sheet for the management of the Tha Ngon area is given in the following table.

| | Output (a) | Production cost (b) | Net income (a' - b) | Per farmhouse net income |
|------|---------------|---------------------------|------------------------|-----------------------------|
| 1974 | 143,724 | 47,001 | 96,723 | 612 |
| 1976 | 291,944 | 96,179 | 295,765 | 1,134 |

(in U.S. dollars)

(2) The total fund required for farm management in the period extending from the rainy season of 1974 through that of 1976, when the portion assessed as the inventory of the resources and equipment offered by OTCA is subtracted, is estimated at 18,480,000 kip.

(3) The following facilities will have to be made available at an earliest possible day:

- (a) Food storage houses: Two food storage houses, each with a capacity of 660 tons (31,680,000 kip), and annexed facilities (8,000,000 kip).
- (b) Equipment warehouse: One equipment warehouse with a capacity of 200 tons (7,290,000 kip).
- (c) Assembly halls for immigrants: Three assembly halls for immigrants, each with an accommodation capacity of 111 persons (9,000,000 kip).

APPENDIX

Minutes of the meeting held at the Asian Development Bank in the 7th floor conference room between officers of the Bank and representatives of the OTCA on July 23, 1974 at 10:00 a. m.

1. A meeting was held at the Bank on the forenoon of 23 July 1974 between the Overseas Technical Cooperation Agency (OTCA) Mission for the Tha Ngon Pilot Farm and the officers of the Bank to discuss certain issues concerning the Pilot Farm in the Bank-assisted Tha Ngon Project. Those present were:

Projects I Department

Messrs. K. Suma (Deputy Director)
M. Nakahara (Actg. Project Manager)
W. van Tuljl (Irrigation Engineer)
K. Sakata (Agronomist)
P. R. Rao (Economist)

Operations Department

Mr. E. A. Sie Dhian Ho (Operations Officer)

OTCA

Messrs. K. Motohashi (Mission Leader)
T. Tauchi (Irrigation Engineer)
T. Yamamoto (Agronomist)
K. Biyajima (Irrigation Engineer)

The Mission visited Manila upon suggestion from the Bank and the meeting was convened to discuss the Mission's tentative findings on the Pilot Farm in the Tha Ngon Project area and to exchange views on other related issues. The meeting was presided over by Mr. K. Suma, Deputy Director, Projects I.

2. In his opening remarks, Mr. Suma thanked OTCA on behalf of the Bank for its assistance in organizing and operating the Pilot Farm in Bank-assisted Tha Ngon Project area. With the help of OTCA, he added, the project has been able to make considerable headway toward the improvement envisaged. The real problem according to him is developing the project area as soon as possible with the support of the Pilot Farm. Mr. Suma remarked that OTCA-assisted projects are successful and the Bank would like OTCA's collaboration to continue and requested the Team Leader to convey these feelings to the Japanese Government.

3. The Leader of the OTCA Mission, Mr. K. Motohashi, then proceeded to explain and elaborate on some of the observations contained in the note which he said was based on the impressions gathered by his Team during its visit to the project site as well as discussions with Laotian officials. In the course of his elaboration, he touched on four major issues which he considered important in view of the keen interest evinced by the Laotian Government on them. These are:

- i) Request for extension of coverage of the pilot farm from 100 ha. as at present to the entire project area of 800 ha.
- ii) Shortage of farm inputs in the project area.
- iii) Continuation of the program of training Laotian technicians in Japan.

Mr. Motohashi felt that OTCA may agree to requests (ii) and (iii) but may find difficulty complying with request (i), i. e. extension of the area to be served. He felt a separate agreement may be necessary. Mr. W. van Tuijl who recently returned from the project site commented that some of the subject matter specialists may not be fully coped with if they restrict their activities only to 100 ha., and expressed the hope that although OTCA also in the future may have to concentrate on the Pilot Farm, OTCA activities with regard to institutional support (including extension work) and operation and management could be extended to the total project area. Mr. Suma then made a request to OTCA to do whatever possible and pleaded for a generous and flexible approach by OTCA.

4. The Mission Leader next explained the strategy of development which OTCA field staff at the Pilot Farm propose to pursue. He added that they were of the view that good results may be possible by (i) making fuller use of the existing facilities including infrastructure, (ii) forging common farm policy for the project through the help of farmers' associations, and (iii) closer coordination between various government departments dealing with irrigation, agriculture, marketing, supply and farm credit and extension work. The OTCA experts, he said, are at present busy planning demonstrations and field trials in the project. Since the success and viability of the project is very much dependent on a realistic price policy, the Team Leader enquired whether the Bank had any comments on this issue. Mr. Nakahara then briefly gave some views on this matter.

5. A few specific issues were also raised at the meeting. Mr. Sakata made enquiries regarding the progress in arriving at a suitable cropping pattern for the pilot farm; he felt that the fields lying on either side of the canals should be devoted to corn for the time being to save the water until the soil will have been compacted to the extent that the seepage loss becomes least, instead of paddy as is being planned. He also wanted that OTCA should prepare a detailed soil map of the project area for the use of better farming practice. The OTCA has agreed to consider these suggestions.

6. Mr. Van Tuijl sought up-to-date information on the receipt of donated machinery and equipment from Japan. In reply, the Team Leader said that 3 big tractors (higher horsepower) and 30 small tractors (24 horsepower) and 30 power threshers have so far been received and 4 more large tractors are expected. A part of the consignment however is being claimed by the Government for use outside the Tha Ngon Project.

7. Bank staff fully agreed with OTCA's view that the available facilities should be utilized to the greatest extent. Mr. van Tuijl explained that the Bank Mission had therefore advised the project authorities to concentrate, in view of water losses on the level soils, for the time being on the heavy soils, and also to settle 100 additional farmers so that at least paddy production in the wet season would be maximized.

8. Mr. Suma concluded the meeting with the remark that the project is being viewed as an example in international cooperation and is being visited by international agencies like FAO, IBRD, etc. He then requested OTCA to do the utmost for the success of the project including extension of technical and institutional advice even to outside the Pilot Farm and extension or renewal of TA agreement after its expiry next year.

