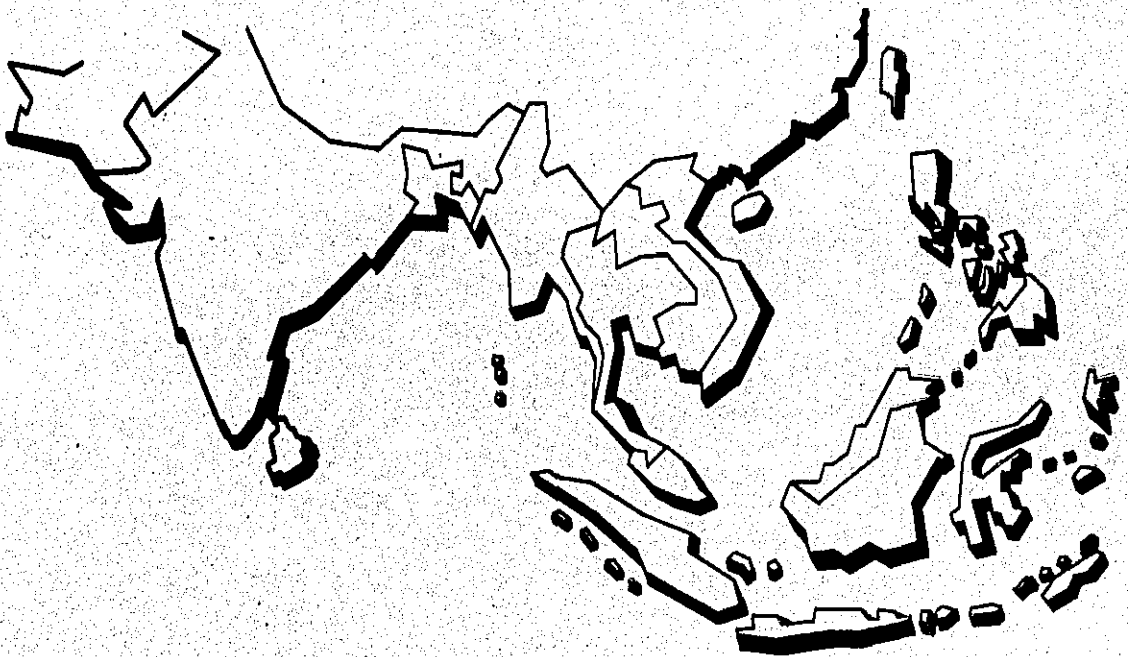


**AGRICULTURAL DEVELOPMENT
COOPERATION:
YESTERDAY,
TODAY & TOMORROW**

1972



**AGRICULTURAL DEVELOPMENT COOPERATION OFFICE
OVERSEAS TECHNICAL COOPERATION AGENCY**



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FOREWORD

Since the Overseas Technical Cooperation Agency (OTCA) established the Agricultural Development Cooperation Office in 1967, Japan's agricultural cooperation towards the developing countries has been intensified each year in an increasingly expanding scope of activities. Expansion and intensification of cooperation activities were furthered by the institutional improvement effected by the reorganization of the said office into the Agricultural Cooperation Department in June 1970.

These efforts for reinforcing agricultural cooperation have been redoubled in recent years by the recognition that the improvement of livelihood of farmers who occupy the majority of population in the developing countries not only carries the greatest weight in various fields of technical cooperation but also is the best policy for stabilizing the people's life in the developing countries.

The progress of Japan's cooperation efforts has been introduced in a booklet published in 1970 and 1971. This booklet has been prepared to introduce, as in the past two years, the outline of Japan's agricultural cooperation activities.

It will give me great pleasure if this booklet proves useful in affording a better understanding of Japan's agricultural development cooperation towards the developing countries.



Shigekatsu Watanabe
Director

Agricultural Cooperation Department
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| | |
|-----------|------|
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Chapter I. OUTLINE OF AGRICULTURAL COOPERATION

I. Background of Agricultural Cooperation

Developing countries of the world are all in need of technical cooperation from the developed countries in every aspect and not in agricultural development alone. However, the importance of agriculture for economic growth of the developing countries can never be taken lightly because of the heavy weight carried by agriculture in the socio-economic structure of these countries.

Needless to say, it is the developing countries' own concern how much weight they may put on agriculture in relation to other industries. It is the indisputable fact, however, that farmers constitute the overwhelming majority of population in the developing countries, particularly in Southeast Asia, and the elevation of their living standard leads directly to the stabilized life of the entire nation. It cannot be denied that the national finance of these countries depends heavily on agricultural production. For these reasons, agricultural development is given high priority in the development policy of the developing countries as well as in the aid programmes of developed countries.

The concept favouring a big push in agriculture as a prime-mover of economic development in Southeast Asia was hammered out by Japan at the First Southeast Asian Ministerial Conference on Economic Development held in April 1966 at Tokyo. This international get-together was quite a meaningful event in that it marked the starting-point of Japan's cooperation in the agricultural development projects of Southeast Asian countries.

This forward-looking attitude of Japan and the prevailing situation of the developing countries gave rise to the increased requests for her agricultural cooperation rushing in not only from Southeast Asia but also from the countries in other parts of the world such as Near and Middle East, Central and South America, and Africa.

Agricultural development can never be brought to a success by the government's "Go" sign alone. It proves effective and fruitful only when its implementation is supported by the input of a huge capital over a long period and by the improvement of farmers' technical level.

The agricultural cooperation extended to the developing countries in the past years cannot escape from the criticism that little or no attention was paid to the position and welfare of farmers.

Though many ambitious and prosperity-promising cooperation programmes formulated by the cooperating developed countries and international organizations were put in practice, very seldom did the cooperating party give due regard to the will and income increase of farmers by whom the programmes were actually carried out. In very many cases, the cooperating party assumed a rather *indifferent attitude*, leaving the matter entirely to the developing countries.

This evil side of the past agricultural cooperation activities should be faced squarely in order that the future cooperation programmes will be completely free from it and will be designed according to the development stage and structure of the developing country's economy and in due consideration of the farmers' will and welfare.

2. Current Mode of Agricultural Cooperation

Japan's past agricultural cooperation was of the "at-the-point" type. To be more precise, Japan used to extend her cooperation in an individualistic way through (1) dispatch of individual experts, (2) experiments and demonstration of agricultural techniques, and (3) training of the developing countries' technicians in agricultural technology, or by the establishment and operation of training centres of agricultural technology.

In recent years, however, the developing countries are seeking Japan's cooperation predominantly in the projects which are incorporated in their overall socio-economic development scheme. Further, increasing requests are being sent in from these countries for cooperation in the agricultural education, agricultural research, and training in agricultural technology which are all very important and provide the basis for improving the level of agricultural technology of the aid-seeking countries.

To meet this changing trend of the developing countries' requests, greater emphasis has been placed in recent years on the "on-the-plane" type cooperation than on the "on-the-spot" type cooperation, with strenuous efforts made for active implementation of the former.

Some detailed description is given below on this "on-the-plane" type cooperation.

(1) Cooperation in Model District Development Project

This project aims at providing integrated and systematic cooperation in the below-listed improvements in the model districts of suitable size which will be designated in areas to be developed in the coming years.

- 1) Infrastructural improvement involving irrigation and drainage, construction and improvement of farm roads, farm consolidation, etc.
- 2) Improvement of general agricultural technology involving the selection of suitable varieties, fertilization, establishment of cropping standards, introduction of mechanized farming, etc.
- 3) Institutional improvement involving the improvement of farmers' organizations and establishment of agricultural extension network and techniques.
- 4) Establishment of pilot farms of suitable size within the model district for the purpose of raising the farmers' technical level and training the developing countries' technicians in agricultural technology.

For the purpose of putting such project into practice, the project survey is conducted and the engineering design is prepared. At the same time, the services of Japanese experts and equipment needed for the cooperation are also offered, and the technical staff of the developing countries collaborating with Japanese personnel are given necessary training in Japan.

(2) Cooperation in Rural Communities Development Project

The model district described in Item (1) above is intended chiefly for paddy cultivation and its area is limited to a maximum of 200 ha. The cooperation in rural communities development project was initiated in view of the growing demand for collective and integrated development of existing rural villages.

This project embraces a number of existing rural villages and aims at attaining improvements in farmers' organized activities and their livelihood as well as in their environmental conditions, and is further intended to accelerate the improvement of agricultural productivity including paddy production, introduction of multiple cropping for income stabilization, and promotion of crop processing industries.

Hence, it is a comprehensive rural communities development project having a substantial large scale.

For the purpose of cooperating in this type of project, the project survey is conducted and the engineering design is prepared. At the same time, the services of Japanese experts and equipment needed for the cooperation are offered, with necessary training given in Japan to the technical staff of the developing countries who collaborate with Japanese personnel.

(3) Cooperation in Agricultural Education and Research Project

Both agricultural education and agricultural research constitute a very important and fundamental factor which bears closely upon agricultural development. Though elaborate efforts are being made by all the developing countries, the development so far made in these fields is still deficient and entails many problems which should be brought to solution in the future.

The level of agricultural research in these countries need to be raised in the coming years just as the level of education. Requests for cooperation in research and experiment activities are therefore on the steady upward trend.

To meet these requests, Japan is providing the services of Japanese experts to be stationed at agricultural educational institutions and experiment stations and also offering equipment and materials required at such institutions and stations.

(4) Cooperation in Training Centre Project

The shortage of research workers is keenly felt in the developing countries. However, what is even more acutely needed than to cover this shortage is to increase the number of extension workers who disseminate the outcome of agricultural experiments and researches among farmers and improve their extension techniques. All the developing countries are pressed hard for increased availability of extension workers who are capable of diffusing improved cultivation techniques and mechanized farming techniques among farmers.

For the purpose of training such extension workers, training centers are established in the developing countries,

with the services of Japanese experts and necessary equipment and materials also provided.

3. Future Course of Agricultural Cooperation

With the opposition between East and West giving place to the creation of the multipolar world, the international situation is at an important turning point today. If Japan is to fulfill her responsibilities and roles as an important member of the international society at this crucial stage, the technical cooperation she extends to the developing countries in Southeast Asia and other parts of the world should be given a deeper significance than before.

Agricultural cooperation constitutes an important part of the development strategy of aid-seeking countries. It is highly probable that the requests from the developing countries for Japan's agricultural cooperation will pursue a sharp upward trend in the coming years. It deserves attention that the agricultural project cooperation, which is incorporated in the economic development plan of the developing countries and leads directly to their overall national economic development, was brought to the fore and secured a strong ground at a series of recent international meetings including the Sixth Southeast Asian Ministerial Conference on Economic Development.

Developed countries are now expected to extend a large-scale and comprehensive cooperation based on the extensive development system covering land infrastructure improvement (irrigation and drainage, etc.), improvement and extension of cultivation techniques, and socio-economic infrastructure improvement (rehabilitation of farmers' organizations, improvement of distribution mechanism, etc.). To put in more details, requests sent in from the developing countries have largely changed in nature and the following trends are observed in their aspiration after agricultural development.

(1) Cooperation is hoped to be extended by integrating funds and techniques on the basis of the rural communities development system which constitutes part of the economic development strategy.

(2) Agricultural production which has so far been confined to paddy and other crops for farmers' own consumption is planned to be diversified to cope with the increasing demand for fruit trees, horticultural products, livestock products, and so on. Hence, the cooperation from the developed countries is

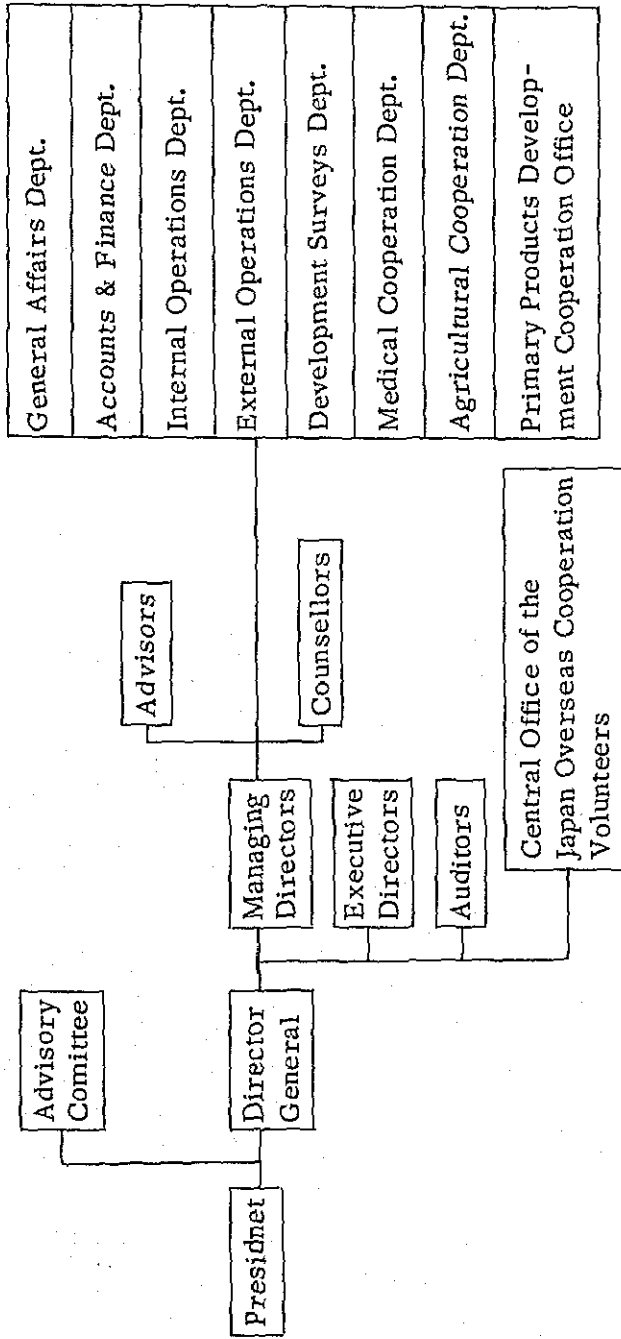
demande to be correspondingly versatile.

- (3) Area of pilot project cooperation is expanding by the progress of the infrastructural improvement.
- (4) Agricultural cooperation is extended not only to the countries in Southeast Asia but also to those in Near and Middle East, Central and South America and Africa.
- (5) Elevation of labour and land productivity, and not mere production increase, is desired to be attained.
- (6) Improvement of the price policy, distribution mechanism and processing method and system is planned to elevate the farmers' income level.
- (7) Each project tends to cover a larger area than before, e.g., the whole area of a province or a state.
- (8) Development projects are planned in anticipation of an integrated cooperation from developed countries in research and experiments, establishment of cultivation techniques, rearing of farmers' organizations, and agricultural extension service.
- (9) Greater emphasis is being placed on the fundamental ingredients of agricultural development, i.e., education, research and experiments.
- (10) Cooperation is requested to be extended for a longer period than in the past.

These trends are not met, either in quality or quantity, by the agricultural cooperation currently offered by Japan. This fact has already been pointed out as a serious problem confronting Japan's agricultural cooperation and has been put to the exhaustive discussion and review of the authorities in various specialized fields. From the discussion advanced in the foregoing pages, it is imperative that Japan should abandon her past attitude towards agricultural cooperation and make completely new approaches without the least delay and establish a new policy and system under which she will be discharging her responsibilities as a cooperating country fully cognizant of her role in the new era.

Chapter II. ORGANIZATION CHART OF THE OVERSEAS TECHNICAL COOPERATION AGENCY

(As of April 1972)



Chapter III. BUDGETARY ALLOCATION BY YEAR AND PROJECT

(Unit 1,000 yen)

| Country | Project Name | 67 | 68 | 69 | 70 | 71 | 72 |
|-----------------|---|---------|---------|---------|---------|---------|-----------|
| Indonesia | West Java Food Production | 77,244 | 36,668 | 35,493 | 55,215 | 45,829 | 78,240 |
| | The Tadjum Pilot Farm | 0 | 0 | 12,241 | 58,225 | 22,364 | 52,859 |
| | Cooperation in Research | 0 | 0 | 5,986 | 42,655 | 51,389 | 57,277 |
| | Lampung Agricultural Development | 0 | 0 | 0 | 0 | 0 | 56,741 |
| The Philippines | Paddy Cultivation Food Crop Development | 61,204 | 118,103 | 47,917 | 35,279 | 43,960 | 47,887 |
| | Assistance to the Agricultural Faculty of Cebu University | 0 | 0 | 44,144 | 32,654 | 62,396 | 58,556 |
| Laos | The Ngon Agricultural Development | 19,008 | 89,812 | 34,574 | 38,584 | 59,174 | 54,987 |
| | Development of Maize Cultivation | 80,665 | 42,040 | 30,632 | 15,011 | 7,228 | - |
| Cambodia | Agricultural Technical Centre and Livestock Breeding Centre | 49,500 | 31,249 | 31,560 | - | - | - |
| | Agricultural Mechanization Training | 47,805 | 63,277 | 25,044 | 12,010 | 14,613 | 30,531 |
| Thailand | Sericultural Development | 0 | 2,784 | 84,669 | 84,432 | 77,762 | 89,098 |
| Sri Lanka | Rural Development in Dewahuwa Community | 0 | 12,754 | 45,600 | 57,752 | 85,632 | 79,516 |
| | Agricultural Extension Centres | 37,488 | 89,216 | 85,710 | 100,448 | 75,856 | 138,757 |
| India | Dandakaranya Agricultural Development | 0 | 0 | 33,459 | 99,479 | 83,383 | 75,675 |
| | Cooperation in Agricultural Research | 0 | 0 | 0 | 0 | 0 | 17,557 |
| Nepal | Agricultural Development | 0 | 0 | 4,926 | 7,634 | 26,199 | 100,977 |
| Bangladesh | Agricultural Development | 0 | 0 | 0 | 6,038 | 27,068 | 0 |
| | (Sub-total) | 372,914 | 485,903 | 521,955 | 645,416 | 682,853 | 938,658 |
| Others | Fact-finding Surveys | | | | 5,470 | 17,334 | 27,537 |
| | Itinerant Technical Guidance | 809 | 22,097 | 7,924 | 10,863 | 23,228 | 30,200 |
| | On-the-spot Programming | | | | 4,980 | 4,602 | 2,266 |
| | Team for arrangement | | | | | | |
| | Others | | | | 7,039 | 61,937 | 115,714 |
| | (Sub-total) | 809 | 22,097 | 7,924 | 28,352 | 107,101 | 175,717 |
| | Total | 373,723 | 508,000 | 529,879 | 673,768 | 789,954 | 1,114,375 |

Notes: 1. Values for 1967 to 1971 indicate the budgetary appropriations approved for the implementation of cooperation programmes.

2. Values for 1972 indicate the originally estimated budget.

Chapter IV. OUTLINE OF THE PROJECTS (As of March 31, 1972)

| Country | Project Name | Outline of the Project | Japanese Experts on Deputation | | |
|-----------|---------------------------|---|--|--|---|
| | | | Name | Specialty | Affiliation |
| Indonesia | West Java Food Production | Cooperation to increase rice production in West Java. Period of Cooperation: 1968 to 1974 | SUGO, Kazuma | Project Leader | OTCA |
| | | | TOKUNAGA, Hiroshi FUNADA, Masaaki WAKABAYASHI, Morinobu AKAGAWA, Katsuyuki SHINOZAWA, Tetsutchi HAGA, Mitsuo | Rice Cultivation Rice Cultivation Irrigation Farm Mechanization Soil & Fertilizer Farm Mechanization | OTCA OTCA MAF OTCA OTCA OTCA |
| | The Tadjum Pilot Farm | Cooperation in the establishment of 220 ha pilot farm in Tadjum District Irrigation Project, Central Java. Period of Cooperation: 1971 to 1974 | IKEI, Yoshitiko KAWAMATA, Masakuni KATO, Fumihiko SHIBATA, Toshio KANAL, Taijiro KOZUKI, Hidetaka | Leader, Agricultural Technology Water Management Agricultural Technology Agricultural Extension Irrigation Coordination | MAF MAF MAF MAF MAF OTCA |
| Food Crop | Cooperation in Research | Cooperation in the research for protection of food crops at the Central Agricultural Research Institute at Bogor. Period of Cooperation: 1970 to 1975 | IWATA, Yoshito NISHIZAWA, Masahiro NAGASE, Kiyosumi YAZAWA, Fumio SATOMI, Hiroo OGAWA, Shoji | Project Leader Plant Pathology Frame Construction of Light-alloy Screened House Plant physiology Plant Protection Foundation and Glass Pane Work of Light-alloy Screened House | OTCA MAF OTCA MAF MAF OTCA |

| | FUJIMOTO, Yukio | Fixtures and Nets of Light-alloy Screened House | OTCA |
|-----------------------|---|---|---|
| The Phillip- Pines | Paddy Cultivation Development | Cooperation in the establish- ment of model rice centres in Naujan district, Mindoro Is (1,000 ha) and in San Miguel district, Leyte Is (1,000 ha). Period of Cooperation: 1969 to 1974 | (Naujan District, Mindoro Is.) KITAGAWA, Sakuyochiro MISAWA, Kazuto OTSUBO, Eiichiro YAMAKAWA, Hiroshi YAMADA, Shinichiro (San Miguel District, Leyte Is.) NAKAGAWA, Ryuichi MIYAISHI, Haruo DAIMARU, Fumito FUKUSHIMA, Shoichi |
| | | | MAF OTCA OTCA OTCA MAF OTCA OTCA OTCA MAF |
| Viet Nam | Assistance to the Agricultural Faculty of Can-tho University | Cooperation in the establish- ment and operation of Agricul- tural Faculty of Can-tho Cantho University for promotion of agricultural education. Period of Cooperation: 1970 to 1973 | KAWAMOTO, Nobuyuki IKEDA, Mitsuo KASHIWABARA, Takao OTA, Yasuo |
| | | | OTCA Ministry of Education Ministry of Education OTCA |
| Laos | The Ngon Agricul- tural Development | Cooperation in agricultural development of The Ngon district (800 ha), Vientiane Plain. Period of cooperation: 1970 to 1975 | KURIHARA, Matsuo FUNATSU, Hideo HAGA, Sosuke MORI, Yoshihisa |
| | | | OTCA OTCA MAF OTCA Organization |

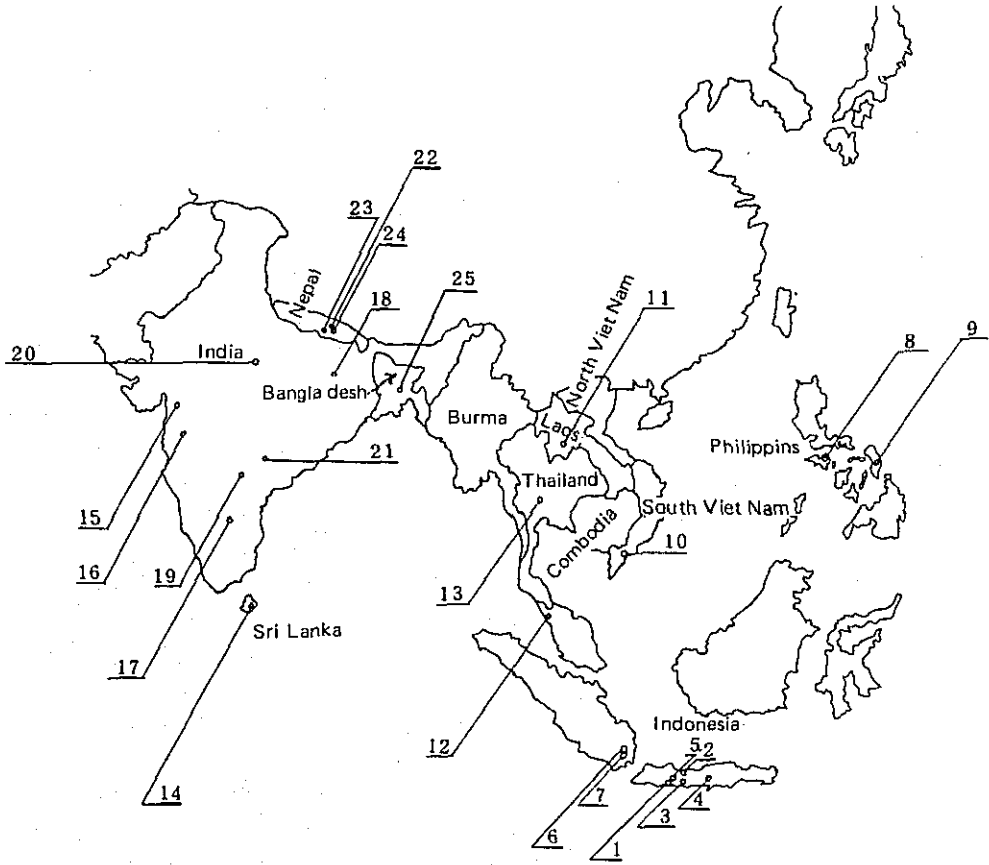
| | | | |
|-----------|---|--|-----------------------------|
| | KONDO, Takashi | Irrigation | Hokkaido Development Agency |
| | KIMURA, Mutsuo | Construction Machinery | MAF |
| | GOTO, Seiko | Farm Mechanization | OTCA |
| | YANAGIDA, Hiroshi | Agricultural Technology | OTCA |
| | SUZUKI, Haruo | Coordination | OTCA |
| | SAEGUSA, Kozo | Project Leader, Farm Mechanization | MAF |
| | YAOI, Hidetoshi | Farm Mechanization | OTCA |
| Malaysia | Agricultural Mechanization Training | Cooperation in the training of agricultural extension workers and key farmers at the Farm Mechanization Training Centre at Bumbong Lima. | |
| | | Period of cooperation: 1970 to 1973 | |
| Thailand | Sericultural Development | Technical cooperation for the Central Sericultural Research and Training Centre at Korat and its sub-centres. | |
| | | Period of cooperation: 1969-1975 | |
| | OMURA, Seinosuke | Project Leader, Sericulture | OTCA |
| | AOKI, Kiyoshi | Pathology | OTCA |
| | HAYASHI, Yujiro | Silk-worm Egg Production | OTCA |
| | KOJIMA, Takashi | Silk Reeling | OTCA |
| | HIGASHI, Yoshiaki | Silk-worm Breeding | MAF |
| | IWATA, Eki | Mulberry Cultivation | MAF |
| Sri Lanka | Rural Development in Dewahuwa Community | Cooperation in rural development of Dewahuwa Community. | |
| | | Period of cooperation: 1970 to 1975 | |
| | SATO, Takao | Project Leader, Agronomy | MAF |
| | KANNO, Kaoru | Agricultural Economy | MAF |
| | SASAKI, Teru | Agricultural Cooperative Association | OTCA |
| | OHTANI, Toshihito | Hydrology | MAF |
| | HORIE, Masanobu | Agricultural Engineering | MAF |

| India | Agricultural Extension Centres | NUMATA, Masamichi FUKUSHIMA, Moriichi (Arrah Centre) MIYASAKA, Chuji AKETA, Shigetoshi (Mandya Centre) SUGAWARA, Tetsujiro FUJITA, Isamu (Khopoli Centre) AKIYA, Ryoza CHONAN, Kanai SHIBATA, Toshihide KIMURA, Mikio KOIKE, Noriichi HAYASAKA, Kazuo KATO, Teruo ISHIKAWA, Toshinori KISHIDA, Hiromitsu | Farm Mechanization Coordination | OTCA |
|-------|--|---|--|--|
| | Cooperation in the establishment of advanced agricultural techniques and training of extension workers for Agricultural Extension Centres at Arrah, Vyara, Mandya and Khopoli. Period of cooperation: First Agreement (Arrah, Vyara) 1968 - 1975 Second Agreement (Mandya, Khopoli) 1968 - 1975 | | Director of Centre Agricultural Extension Agronomy Soil & Fertilizer Director of Centre Farm Mechanization Soil & Fertilizer Farmland Consolidation Agricultural Extension Farmland Consolidation Agronomy Agricultural Extension Agronomy | OTCA MAF OTCA MAF OTCA OTCA MAF OTCA OTCA OTCA MAF OTCA OTCA OTCA |
| | Cooperation in agricultural development of Farakote Zone and mixed farms. Period of cooperation: 1970 to 1975 | OTA, Sueji SHIMADA, Tadayuki MIZUKOSHI, Hiroshi OHGUCHI, Mikio SUGAWARA, Seikichi FUKUCHI, Koji | Project Leader, Agronomy Agronomy Farmland Consolidation Irrigation Farm Mechanization Coordination | OTCA OTCA MAF OTCA OTCA OTCA |
| | Dandakaranya Agricultural Development | | | |

| | | | | | |
|-------|--------------------------|--|----------------|------------------|------|
| Nepal | Agricultural Development | Cooperation in agricultural development of Janakpur Zone and Chitwan district, Narayani Zone. Period of cooperation: Preparatory period - 1971 to 1973 Full-scale cooperation period - 1973 to 1978 | SHIMADA, Teruo | Water Management | OTCA |
|-------|--------------------------|--|----------------|------------------|------|

| Country | Area No. | Area | Project Name |
|-----------------|-----------|--|--|
| Indonesia | 1 | Muara | (1) West Java Food Production Increase |
| | 2 | Sukamandy | |
| | 3 | Tjihea | |
| | 4 | Tadjum | (2) Pilot Farm |
| | 5 | Bogor | (3) Food Crop Research |
| | 6 | Pungur | (4) Lampung Agricultural Development |
| | 7 | Tegineneng | |
| The Philippines | 8 | Naujan, Mindro Is. | (5) Paddy Cultivation Development |
| | 9 | San Miguel Alang-alang Zone, Leyte Is. | |
| Viet Name | 10 | Can-tho | (6) Agricultural Faculty of Can-tho University |
| Laos | 11 | Tha Ngon | (7) Agricultural Development |
| Malaysia | 12 | Bumbong Lima | (8) Agricultural Mechanization Training |
| Thailand | 13 | Korat | (9) Sericultural Development |
| Sri Lanka | 14 | Dewahuwa | (10) Rural Community Development |
| India | 15 | Vyara | (11) Agricultural Extension Centres |
| | 16 | Khopoli | |
| | 17 | Mandya | |
| | 18 | Arrah | |
| | 19 | Hyderabad | (12) Agricultural Research |
| | 20 | Pusa | (13) Agricultural Development |
| Nepal | 21 | Dandakaranya | |
| | 22 | Janakpur | (14) Agricultural Development |
| | 23 | Chitwan | |
| 24 | Hardinath | | |
| Bangladesh | 25 | Tejgaon | (15) Agricultural Development |

LOCATION MAP OF AGRICULTURAL DEVELOPMENT
COOPERATION PROJECTS
(As of March 31, 1972)



1. INDONESIA: West Java Food Production Scheme

(1) Outline of the Project

In Indonesia, the government is pushing forward a food production increase called BIMAS Project which aims at attaining self-sufficiency in food and stopping the rice import.

Japan pledged to assist Indonesia in this Project and has been extending her cooperation in the following three projects since May 1968 at the request of the Indonesian government.

- 1) Project for improved paddy seed multiplication, inspection and extension at the Muara Experiment Farm near Bogor.
- 2) Project for farm mechanization training at two places, i.e., the State Farm at Sukamandy and the Agricultural Machinery Department, Directorate-General of Agriculture at Pasarminggu in the suburbs of Djakarta.
- 3) Technical cooperation in the improvement of paddy cultivation techniques, mechanized farming, strengthening of farmers' cooperative associations, multiplication of paddy seeds, etc. at Tjehea State Farm in Tjiandur.

Though Japan's cooperation in these projects was highly evaluated in Indonesia, it brought light to a number of problems which called for further improvement, and the Indonesian government requested that Japan would continue her cooperation in an intensified manner and in an expanded scope of activities. According to this request, Japan agreed to extend the cooperation period for another three years from May 1971.

From the reviewal of her cooperation in the above-listed three projects, Japan arrived at the conclusion that her future agricultural cooperation should not be confined to two or three fields but should rather be offered in a more comprehensive way by the combination of the "at-the-spot" type cooperation and the "on-the-plane" type cooperation. In other words, she took due note of the need for disseminating the effect of agricultural cooperation among farmers through the media of the existing agricultural extension centres while providing, at the same time, assistance in the model farm development covering the entire paddy cultivation process in designated areas as well as in the increase and quality improvement of extension workers.

1) Tjihea Tani Makmur project for the development of model farms in designated areas, which is aimed at the provision of guidance and demonstration of the entire process of modern paddy cultivation under improved infrastructural conditions covering farm roads, irrigation and drainage.

2) Extension Farm project for regional development in major rice producing Kabupatens in West Java, which is aimed at providing extension workers and key farmers with the guidance and demonstration of improved paddy cultivation technique which are adaptable to the traditional farming practices.

2) Training project covering the government technical staff, first-line extension workers and some key farmers in West Java for the purpose of providing them with theoretical as well as practically training in the paddy cultivation technique, seed multiplication technique and mechanized farming.

It is to be added that all these three projects were planned to implemented in close coordination with each other, and that Japan also agreed to provide cooperation in the nation-wide seed inspection training project and the mechanization project which had been in progress by the hand of the Indonesian government.

(2) Contents of Cooperation

1) On October 20, 1966, a 4-men team headed by Mr. K. Ishii (the Chief of Extension Division, Agricultural Administration Bureau, Ministry of Agriculture and Forestry) was sent from the Ministry of Foreign Affairs at the request of the Indonesian government for a three-week preliminary survey required for the establishment of an agricultural centre. The prospect for more integrated and coordinated approach having been projected by the data of the said preliminary survey, a second team of nine members led by the same Mr. K. Ishii returned to Indonesia on August 22, 1967 for the purpose of exploring the possibility of cooperating in the enforcement of Indonesia's top priority agricultural policies. The five weeks' study tour of the second survey team produced a solid basis for the bilateral agreement on agricultural cooperation between the two governments, which was signed on May 29, 1968, and this was followed by the assignment of five experts to Indonesia on September 5 of the same year.

2) Under the provisions of the said agreement, agricultural machinery and experiment equipment were supplied in 1968,

1969 and 1970 to facilitate the extension of techniques required for the accelerated food production project. Further, the services of Mr. J. Sugita (OTCA) in the capacity of a coordinator were provided under the Colombo Plan during the period from December 4, 1968 to February 27, 1969 for the smooth delivery of these machinery and equipment.

3) Cooperation in terms of experts' consultation on such problems as soil and fertilization, disease and pest control, farm management and agricultural engineering which have emerged among Japanese experts stationed in Indonesia was also made available through the assignment of a technical guidance team headed by Mr. H. Hashimoto (Chief, Soil and Fertilizer No. 3 Laboratory, Kyushu Agricultural Experiment Station). During its stay in Indonesia from February 13 to March 5, 1969, the itinerant technical guidance team had fruitful discussions with the competent Indonesian officials on the policy and procedures of future cooperation between the two countries.

To make the results of the technical cooperation take firm roots in Indonesia, the two governments also concluded an agreement on Kennedy Round Aid Programme in November 1960, which included the provision for utilizing the programme to the extent of \$250 thousand worth agricultural equipment and materials for the above-mentioned Tjihea Farm Project.

A request for land infrastructure improvement in Tjihea district was made by the Indonesian government for more efficient use of the equipment and materials made available under the technical cooperation and through Kenney Round Aid Programme. This request was met by the assignment of a 10-men survey team over a period of 60 days from October 28, 1970, with Mr. H. Yoshiwara (Director, OTCA) and Mr. T. Sakamoto (Director, Agricultural Cooperation Department, OTCA) leading the team in the former and latter period respectively.

4) During the period from May 30 to June 23, 1971, a six-men itinerant technical guidance team visited Indonesia to chart the course and policy-line of Japan's cooperation after the extension of the agreement, and the project cooperation was initiated by 10 experts along the lines described above.

2. INDONESIA: The Tadjum Pilot Farm Project in Panjumas Province

(1) Outline of the Project

The Indonesian government embarked on an irrigation project in Tadjum district, Regency of Banjumas, Central Java, in August 1965. In 1968, the Asian Development Bank (ADB) was approached by the Indonesian government for financial aid in this project, and an agreement was concluded in the same year between the two parties for a credit amounting to \$990 thousand.

This irrigation project is designed to construct headworks on the Tadjum river and intake water at a rate of 5.8 m³/sec for irrigation of about 3,200 ha paddy field area through main and secondary canals having a total extension of 38 km. Supply of irrigation water was commenced in April 1972 by the partial completion of the project.

This project is a part of the special scheme incorporated in Indonesia's Five Year Economic Development Plan and is being implemented by the Directorate-General of Water Resources Development, Ministry of Public Works.

At the request of the Indonesian government and through the arrangements with ADB, Japan gave a pledge to cooperate in this project through establishment of a pilot farm in the project area to promote modern irrigation farming in and around the farm.

The pilot farm is in the central part of the project area and lies along the mid-stream section of the main canal. It embraces about 192 ha of paddy field and about 28 ha of upland field to which irrigation water is supplied from turnout BTa 9.

During the three year cooperation period starting from February 1972, the following works are planned to be undertaken.

- 1) Land infrastructure improvement including the construction of irrigation canals for distributing water from turnouts to fields, construction of drainage canals through poorly drained districts, and new construction or improvement of farm roads for promoting modern and highly efficient agriculture.
- 2) Double cropping of paddy, introduction of improved varieties and improvement of fertilization and plant protection for the purpose of establishing advanced cropping standards and increasing land productivity, and provision of guidance, training and extension services for promoting the application of such

improved cropping standards.

3) Guidance and training in the water management and maintenance of irrigation facilities to ensure effective use of limited supply of irrigation water for double cropping of paddy.

4) Promotion of highly efficient cultivation practices, planting of right crops *at the right time*, and enhancement of mechanized farming for increasing labour productivity.

5) Joint operation for fertilization, plant protection, water management and mechanization, and improvement and reinforcing of farmers' organizations for encouraging joint purchase of capital goods and joint shipment of products.

6) Guidance and training of extension workers and key farmers in these advanced techniques for the purpose of their rapid extension, and demonstration of modern agriculture which can be made model of by the farmers in Central Java.

(2) Contents of Cooperation

The five-member team led by Dr. H. Fukuda, Professor Emeritus of Tokyo University, was sent to Indonesia in October 1969 for preliminary survey of the project. During its one-month stay in the country, the team selected the location of the pilot farm, determined its scale, and also made a fact-finding study into the project. Upon scrutinizing the data provided by this team, a second team for construction design was sent for a period of about one month from February 1970. The second team was headed by Mr. K. Tadokoro (Chief, Extension Division, Agricultural Administration Bureau, Ministry of Agriculture and Forestry) and by Mr. T. Sakamoto (Chief, Agricultural Cooperation Department, OTCA) in the former and latter period respectively. This was ensued by the preparation of a detailed project plan, and by the consultation between the two governments on the details of cooperation and share of activities to be undertaken by either party, which resulted in the signing of the Record of Discussion by the two governments.

Negotiations conducted on the basis of the Record of Discussion led to the conclusion of a bilateral agreement in February 1971, in which Japan pledged to the project cooperation for three years.

Pursuant to the provision of this agreement, six experts were sent to Indonesia in September 1971 and the shipment of machinery and equipment was commenced.

3. INDONESIA: Cooperation in Food Crop Research Program

(1) Outline of the Project

Agricultural development in the developing countries in the south presupposes a sound knowledge and accumulated research data of tropical agriculture. Because of her geographical position in the temperate zone, Japan needs to acquire these qualifications to offer really effective technical cooperation towards these countries.

Recognition of this basic requirement prompted the Japanese government to make a budgetary allocation in fiscal year 1970 for studying "project-based" cooperation in agricultural research. Indonesia was the first country to enjoy this type of cooperation from Japan.

This research cooperation project covers the assignment of experts with necessary machinery and equipment to the Central Research Institute for Agriculture at Bogor, West Java, which is under the jurisdiction of the Directorate-General of Agriculture and their association with the local research staff for joint research work on the following three themes, of which the Indonesian government is hoping to obtain quick results.

Detailed arrangements for the joint research work are made through the consultation between the Japanese experts and the Director of the Institute as provided for in the bilateral agreement between the two governments.

- 1) Ecological studies of the principal diseases and insect pests of food crops and their control.
- 2) Occurrence forecasting of the principal diseases and insect pests of food crops and vector insects of virus diseases.
- 3) Pathological studies of physiological disorder of food crops and their insect pests and diseases.

(2) Contents of Cooperation

A preliminary survey team of 3 members headed by Mr. S. Hoshide (Chief Research Coordinating Officer, Agriculture, Forestry and Fisheries Research Council Secretariat, Ministry of Agriculture and Forestry) which left Japan on October 16, 1969 took 25 days in visiting Formosa, Thailand and Indonesia for the purpose of identifying the themes of agricultural research cooperation. In Indonesia, the team arrived at agreement of opinion that the Central Research Institute for Agriculture should be selected as the theatre of joint research work in the field of crop protection.

Accordingly, the 6-member team for research cooperation survey headed by Dr. Y. Iwata (Head of Department of Plant Pathology and Entomology, National Institute of Agricultural Science) was sent to Indonesia on February 26, 1970. The team completed its terms of reference (survey of the research cooperation project, discussion with Indonesian government on the project feasibility, and signing of the Record of Discussions) within 28 days and returned to Japan.

The Record of Discussions provided the basis for the "Agreement between the Government of Japan and the Government of the Republic of Indonesia on the Implementation of Joint Research of Food Crops" which was signed on October 23, 1970. Consequent on the conclusion of this agreement, a total of four experts with necessary test equipment and apparatus were sent to Indonesia, three on February 28 and one on May 12, 1971, whereby Japan's research cooperation for crop protection was initiated at the Institute in the fields of plant pathology, virus vectors, and plant physiology.

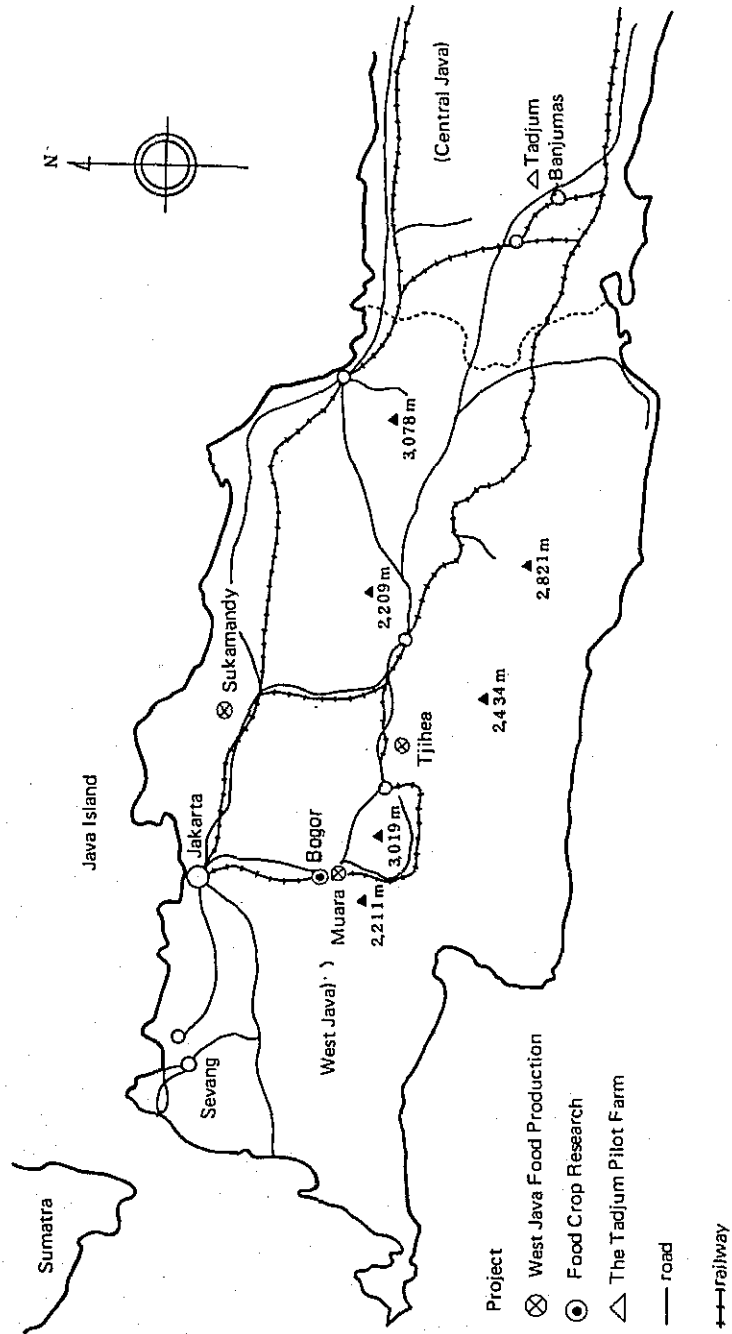
By dint of collaboration efforts of Japanese and Indonesian experts made during the one and a half years elapsed since the start of the project, the joint research work is now set in the smooth course of progress.

During the rainy season of 1971/1972, the experts of the two countries embarked in the laboratory and field research of plant physiology and pest and disease, the result of which is being completed at present.

Notable among Japan's cooperation activities in this project is the completion in fiscal year 1971 of four light-alloy screened houses, each having a building area of 5 x 12 m. Facilities of this type can never be dispensed with for smooth progress of the joint research work, and are expected to produce, by the aid of test equipment and apparatus already supplied, valuable findings and discoveries conducive to effective crop protection.

It is planned that an itinerant technical guidance team comprising experts whose specialized fields are closely affiliated with those of the experts now on assignment (i.e., breeding of resistant varieties and soil fertility) will be sent to Indonesia in November or December 1972. The team will exchange views and opinions with the Japanese experts at the Institute as well as with competent Indonesian officials on the outstanding and prospective problems of the project for the furtherance of research cooperation and elimination of difficulties entailed therein.

WEST JAVA FOOD PRODUCTION (MUARA, SUKAMANDY, TJIHEA)
 THE TADJUM PILOT FARM (TADJUM)
 FOOD CROP RESEARCH (BOGOR)



4. INDONESIA: Lampung Agricultural Development

(1) Outline of the Project

The Indonesian government is actively carrying out the development of Sumatra and other outer territories to accelerate the resettlement of farmers from densely populated Java and turn these areas into the base of increased food supply and production of agricultural export products. Of a number of these outer territories, Sumatra, particularly Lampung province extending in the southern end of the island, is given highest development priority because it is embraced in Djakarta's economic zone and favourably conditioned for production of a diversity of farm produce.

It was with such background that Indonesia requested Japan's all-out cooperation in the agricultural development of Lampung. Acceding to this request which was made in 1970, the Japanese government sent two survey teams to the province, i.e., the preliminary survey team assigned in August 1971 and the feasibility survey team sent in March 1972, to chart the fundamental course of agricultural development of the province. Based on the findings of these two survey teams, negotiations were conducted between the governments of Japan and Indonesia and the Record of Discussions was signed in which Japan pledged to the cooperation in the following development activities.

- 1) Reinforcement of Tegineneng Agricultural Extension Centre for effective implementation of the project.
 - a) Collection and analysis of data and provision of information services for accelerating the province's agricultural development.
 - b) Technical and administrative cooperation in the planning and implementation of the development.
 - c) Tests and demonstration services for practical application of improved cultivation techniques.
 - d) Training of extension workers and key farmers.
 - e) Multiplication and supply of seeds along the lines of the Seed Multiplication Programme carried out by the Indonesian government.
- 2) Promotion of Accelerated Rice Production Project in the paddy field area.

40 smaller demonstration farms (5 ha) and one large demonstration farm (100 ha) are to be established in II

Ketjamatans of Central Lampung. Cooperation activities at these demonstration farms, to be carried out in an integrated manner for the upliftment of farmers' income level and livelihood, are to comprise the introduction and extension of improved cultivation techniques, improvement and reinforcement of farmers' organizations, provision of guidance for improving the supply of agricultural equipment and materials and agricultural credit, and provision of advices concerning farm management.

3) Development of upland crop cultivation in Central and South Lampung.

Cooperation is to be extended in the introduction and extension of improved cultivation techniques, improvement and reinforcement of farmers' organizations, provision of guidance for improving the supply of agricultural equipment and materials and agricultural credit, and provision of guidance concerning farm management.

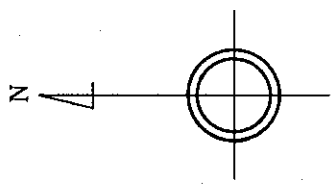
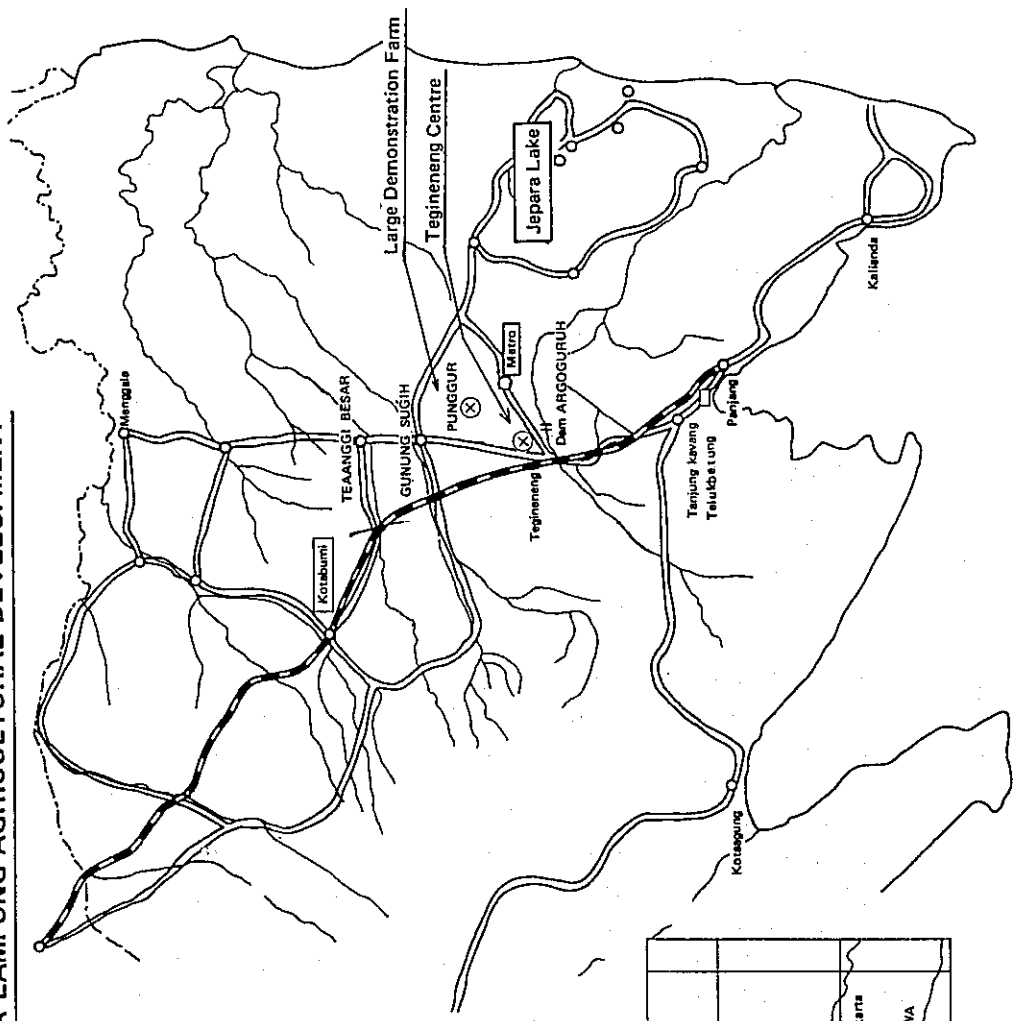
For the purpose of the above cooperation activities, the services of 15 experts (including those specialized in upland crop cultivation) will be made available together with necessary machinery and equipment.

(2) Contents of Cooperation

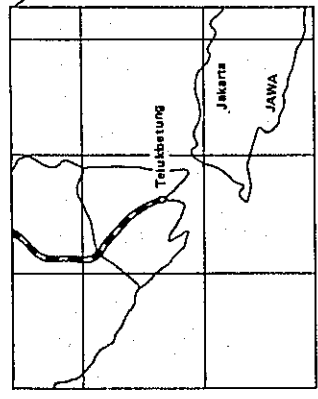
1) During the one-month period from August 1971, a team headed by Mr. H. Yoshiwara (Director, OTCA) and by Dr. T. Shiroshta (Director, Tohoku Agricultural Experiment Station) in the former and latter period respectively was sent to Lampung. The preliminary survey assigned to this team was conducted concurrently with the feasibility study of the projects for which financial aid is sought with the view to charting the fundamental course of development in the province.

2) A team for implementation design was sent over a period of one month from March 1972 headed by Dr. S. Yasuo (Chief, Extension Division, Agricultural Administration Bureau, Ministry of Agriculture and Forestry). The team made an implementation survey required for the project implementation and had discussions with the Indonesian government on the details of Japan's cooperation in the project. This resulted in the signing of the Record of Discussions by the two governments.

INDONESIA LAMPUNG AGRICULTURAL DEVELOPMENT



⊗ Location of Project



5. THE PHILIPPINES: Paddy Cultivation Development Project

(1) Outline of the Project

Construction of regional rice production centres is envisaged under this project for effective storage, drying and milling of rice.

Farm management know-how which can be applied by the local farmers would be imparted under the project by the establishment of a pilot farm in Naujan district (Mindro Is.) and San Miguel Alang-alang district (Leyte Is.), with guidance provided for a period five years by a group of Japanese experts dispatched with necessary machinery, equipment and materials.

The outline of the Regional Rice Production Centres is as follows.

1) Naujan District

The project area lies on an alluvial plain sandwiched between two rivers: the Magasawang flowing in the northwest and the Pangalan flowing in the southeast. The greater part of the area is under cultivation at present. The project aims at a stabilized dry season yield of 4 ton/ha with irrigation water pumped up from the Magasawang.

2) San Miguel Alang-alang District

The project area, extending on the leftbank side of the Mainit river, can be reached by a 40 km road running in the southwest from Tachloban city in the northeastern part of Leyte Is.

3) Pilot Farm

Rational water use and management as well as advanced and practicable cultivation techniques will be demonstrated at the pilot farms in the course of day-to-day farming operation of farmers so that the neighbouring farm households will benefit from learning better farm management techniques therefrom.

| District | Coverage | Objective | Number of Households | Principal Facilities |
|---------------------------------|----------|--|----------------------|--|
| Naujan District | 100 ha | Demonstration of double cropping of paddy by pump irrigation | 29 | Pump (400 mm), 1 siphon, and 1,320 m farm road |
| San Miguel Alang-alang District | 100 ha | Construction of headworks and demonstration of double cropping of paddy by pump irrigation | 42 | Pump (400 mm) Headworks (repaired) and 2,400 m farm road |

(2) Contents of Cooperation

1) A preliminary survey mission headed by Mr. S. Sasaki (ex. Asst. Director, Agricultural Land Bureau, Ministry of Agriculture and Forestry) was dispatched to the Philippines in September 1966 to conduct a reconnaissance survey for chalking out the outline of Japna's cooperation in the Philippines's efforts for increased rice production, and to discuss with the Filipino authorities on the basic approach to the problem.

2) The second preliminary survey mission which was assigned in April 1967, on the basis of the findings of the first mission, a provisional selection of three medium-sized blocks of land already under cultivation, where irrigation improvement could most advantageously contribute to increased paddy production. Upon feasibility study, Naujan district (Mindro Is.) and San Miguel Alang-alang district (Leyte Is.) were finally selected as project areas by reason of their favourable techno-economic conditions. The Philippine government was intimated of "a set of schemes to turn them into Regional Rice Production Centres" through assignment of a mission in November 1967.

3) An Implementation Design Survey Mission comprising 11 experts headed by Mr. K. Takeda (Designing Division, Agricultural Land Bureau, Ministry of Agriculture and Forestry) spent

two months beginning from March 1968 for a reconnaissance survey of the selected project areas and completed a final report. It was agreed that the construction fund required for the project implementation would be borne by the Philippine government.

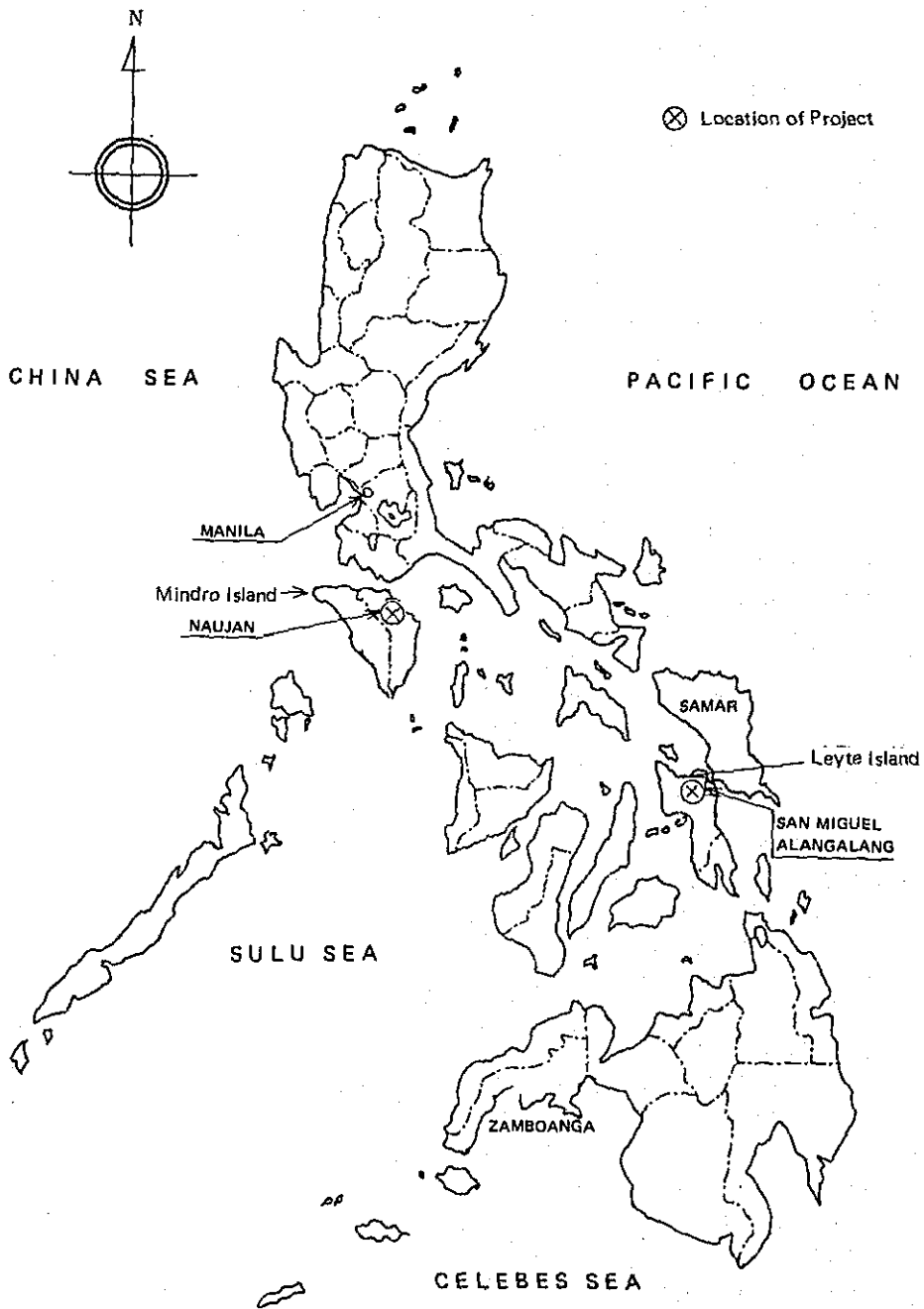
4) Another team was dispatched in September 1968 to finalize the pilot farm plan and to discuss with the Philippine government on the operational aspects of the project.

5) Upon signing of the cooperation agreement on June 17, 1968, four experts equipped with necessary machinery and equipment were sent to each of the two project areas, whereby the five-year cooperation was set on foot.

6) A guidance team visited the Philippines over a period of 22 days beginning from December 1970 to check how effectively the farm machinery equipment supplied in 1969 had been put in use and to make arrangements with the Filipino authorities for the procurement and delivery of the machinery and equipment to be offered in 1970.

7) A technical guidance team was sent in March 1969 to bring light to the irrigation and drainage problems in the project areas.

PADDY CULTIVATION DEVELOPMENT (Mindro island, Leyte island)



6. VIET NAM: Assistance to the Agricultural Faculty of Can-tho University

(1) Outline of the Project

The Faculty of Agriculture of Cantho University in Cantho city located in the centre of Mekong Delta is the only institution for the highest agricultural education established in Viet Nam, and is expected to contribute to the development of agriculture, the basic industry of the country.

However, the long-drawn hostilities raging in the country are causing this faculty of not a long tradition to suffer from the dearth of teaching staff and educational facilities as well as extremely poor educational contents.

Under these circumstances, the Vietnamese government called on Japan for an all-out support in consolidating and strengthening the faculty. Responding to this call, a survey team sent to Viet Nam in July 1969 mapped out a cooperation programme and obtained the agreement of the Vietnamese government on the details of the programme described below.

- 1) Guidance and assistance in research and education through assignment of professors and research-fellows in the fields of agriculture and livestock, to be replenished by the dispatch of necessary numbers of Japanese teaching staff.
- 2) Acceptance of the Vietnamese teaching staff, who are to occupy the faculty chair, for study in Japan.
- 3) Provision of the equipment and materials needful for research and education at the faculty.

Full-fledged cooperation was initiated in March 1970 when the cooperation agreement based on the above programme was concluded between the governments of Japan and Viet Nam.

(2) Contents of Cooperation

- 1) A formal request for Japan's assistance towards the faculty was made by the Vietnamese authorities to the Japanese

members of the Asian Parliamentary Union who visited Viet Nam in September 1967.

2) Dr. Thruong, Dean of the faculty, came to Japan in May 1969, and besides visiting various universities of Japan, approached many quarters for assistance in developing his faculty.

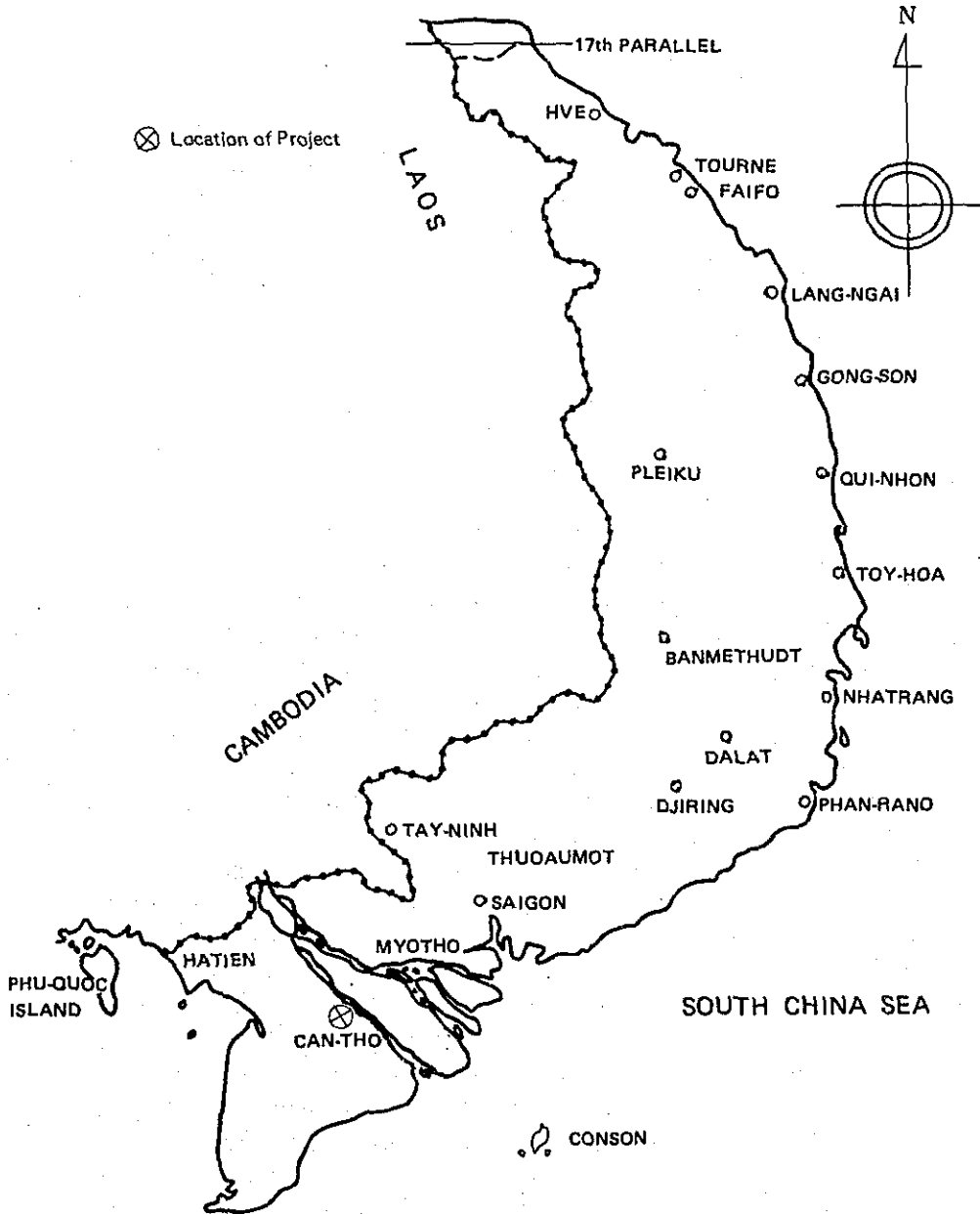
3) In compliance with the formal request for assistance made by the Vietnamese government, a team headed by Mr. T. Sakamoto (the then Chief, Agricultural Cooperation Department, OTCA) visited Viet Nam in July 1969 to formulate the assistance programme for the faculty, which was concentered in the Record of Discussions exchanged between the team and Mr. Tran Lua Cung, the Deputy Minister for Education.

4) On the ground of the above Record of Discussions, the bilateral agreement for Cantho University cooperation was concluded between the governments of Japan and Viet Nam.

5) On the ground of the said agreement, Japan sent one each of professor speccialized in agronomy and animal husbandry to Cantho University in August 1970. This was ensued by the dispatch of a professor of agronomy in June 1971 and another professor specialized in animal husbandry in March 1972, so that Japan's educational cooperation towards Cantho University is being rendered by a total of four professors. Further, short-term services of two experts, specialized in optical instrument and agricultural experiment equipment, were made available during 1971 to provide guidance in the handling and efficient utilization of the equipment supplied by Japan.

Supply of equipment required for this cooperation project was started in 1970. In 1971, 48,250 thousand yen worth equipment intended chiefly for tests and experiment purposes were delivered to the faculty. In the same year, a guidance team headed by Dr. H. Miyayama (Higher Education and Science Bureau, Ministry of Education) visited the university for a period of 20 days from March 21 and made detailed arrangements including the cooperation schedule with the university authority to ensure smooth future implementation of the cooperation project.

ASSISTANCE TO THE AGRICULTURAL FACULTY
OF CAN-THO UNIVERSITY.



7. LAOS: Tha Ngon Agricultural Development Project

(1) Outline of the Project

Tha Ngon district is located 25 km north of Vientiane, the capital of Laos, and 5 km of Ban Than Ngon.

Extending over approximately 1,000 ha of an extremely flat terrain at an elevation of 163 to 167 m, the project area is made up mainly of grassland and forests. During the rainy season, the water level of the Nam Ngum, a tributary of the Mekong flowing along its northern border, rises due to the flood water from upstream and backflow of the Mekong. Throughout the wet season, therefore, the project area is entirely submerged.

Under the project, embankment work surrounding the project area is envisaged for prevention of flooding over of the Nam Ngum and creation of a farmland area of approximately 820 ha, with the construction of a catchment canal and a regulating reservoir also planned for the drainage in the hinterland area. Construction of a drainage gate and a drainage pump station on the downstream side is also planned to drain flood water in the project area by the combined function of natural and mechanical drainage. The reclaimed farmland area will be irrigated with water drawn at a pumping station to be constructed at the upstream end and distributed through main and lateral canals, and farm roads will be so arranged that rational farmland consolidation can be effected for introduction of improved paddy cultivation techniques. Thus, the project aims at turning Tha Ngon district into a model district of agricultural development to be copied in all parts of Vientiane Plain.

Machinery, equipment and materials for construction works including the embankment work and creation of 820 ha paddy field area are planned to be procured with ADB's credit of \$970 thousand. The project construction was started in October 1971, with its cost planned to be covered by local currency fund disbursed from the Laotian government and FEOF (Foreign Exchange Stabilization Fund established by contributions of donor countries including Japan).

In the 820 ha reclaimed farmland area, a pilot farm is planned to be established for demonstration of modern agricultural techniques and their extension in the entire Tha Ngon district as well as in the whole Vientiane Plain. In April 1970, an agreement pertaining to the project cooperation including the pilot farm operation was

concluded between the governments of Japan and Laos.

At the first stage, double cropping of paddy was planned to be conducted in the pilot farm as a type of improved farm management. but, at present stage, studies are being made for introducing other improved types of farm management according to the changes in socio-economic condition.

(2) Contents of Cooperation

1) A ten-man survey team headed by Mr. T. Fukuzawa (Senior Research Officer, Agricultural Land Bureau, Ministry of Agriculture and Forestry) was deputed to the spot in January 1968 for technical and economic studies and formulation of a development plan. The Implementation Design Survey Mission of to members headed also by Mr. T. Fukuzawa visited Laos in the same year for about two months beginning from November to work upon the detailed project design through reviewal and amendment of the original development plan prepared by the first team.

2) A three-man party represented by Mr. H. Fukuzawa was sent to discuss with the Laotian government, on the basis of the final design, about requesting ADB to cover a portion of the project cost, and to give fund-seeking explanation to ADB.

3) ADB sent a survey mission to Laos at the request of the governments of Laos and Japan, and gave first priority to the project after scrutinizing the mission's report. Further, Mr. S. Kanatsu (Senior Irrigation Engineer, Agricultural Development Cooperation Office, OTCA) and another officer of OTCA were sent to Laos at the request of ADB for further discussion on the project with its mission there.

As a result, it was decided that the total project cost of US\$2.44 million would be covered by three parties, i.e., ADB offering a loan of US\$970 thousand, Japanese government extending an aid amounting to US\$1.29 million, and Laotian government covering the remaining US\$180 thousand. Japan pledged to offer technical cooperation in the establishment of the 100 ha pilot farm in the 820 ha paddy field area to be created with the fund from the said three sources.

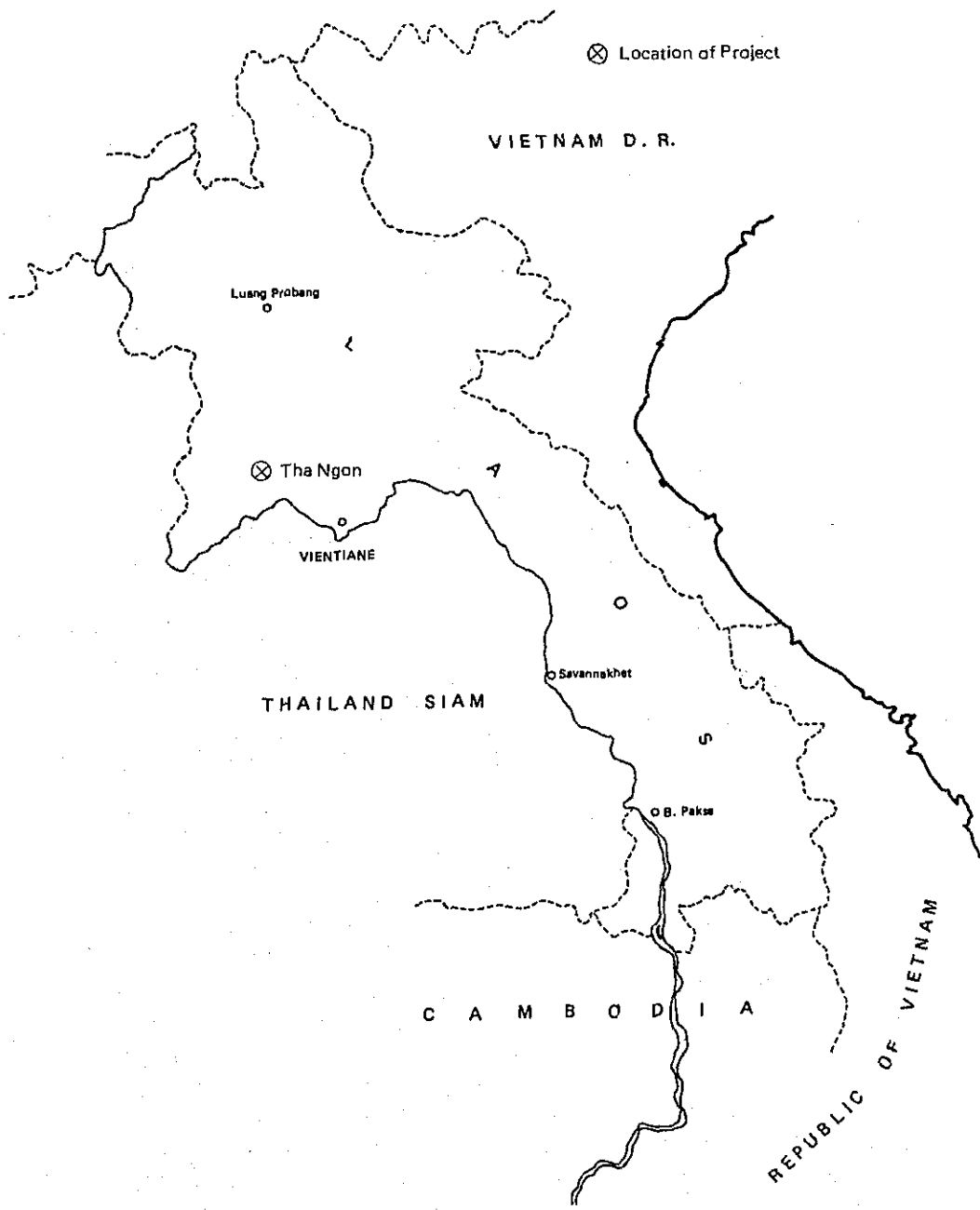
4) A seven-member team headed by Mr. Sakamoto (Director, Agricultural Development, OTCA) was sent to Laos in June 1969 to conduct a survey for planning cooperation activities to be carried out in the pilot farm, and had consultations with the Laotian government on the basis of the findings of the survey, which led to the signing of the Record of Discussions. On the ground of this Record of Discussions, Japan agreed to extend her cooperation in the project over a period of five years and concluded a bilateral cooperation agreement with the Laotian government in April 1970.

5) In the course of the above-mentioned consultations, discussions were also held with the Laotian government on ADB's credit, and the agreement was signed in July 1970 for ADB's loan of US\$970 thousand.

6) On the ground of the said agreement, the experts recruited for the project implementation were sent to Laos in April 1971 to take over the place of the experts stationed at the Laos-Japanese Agricultural and Animal Husbandry Centre. With additional experts dispatched thereafter, a total of nine experts are currently engaged in the cooperation activities.

Machinery and equipment required for the project implementation have also been supplied since the effectuation of the agreement.

THA NGON AGRICULTURAL DEVELOPMENT



8. MALAYSIA: Agricultural Mechanization Training Project

(1) Outline of the Project

Under the Malaysian First Five Year Development Plan, a series of large-scale land infrastructure improvement works such as the Sungai Muda Irrigation Scheme and the Sungai Prai Basin Drainage Project are being vigorously pushed forward in the country's granary zone embracing the State of Kedah in the north and Province Wellesley in the south, expanding the double-cropping paddy field area in the two areas. On the other hand, however, the chronic labour shortage in rural areas has now become so aggravated that acute need is felt for mechanizing paddy cultivation.

Responding to the Malaysian government's request for its solution, Japan carried out a preliminary survey on the desired mechanization in time with the feasibility study conducted from September 1967 for the Sungai Prai Basin Development. In June 1968, she carried out another survey which was intended for project implementation, and formulated a cooperation programme for mechanization training required for double-cropping of paddy. Japan's activities were suspended for some time thereafter due to Malaysia's domestic situation, but the general agreement concerning the project was reached between the two governments after the Malaysian government was urged to prompt the progress of the project in December 1969 by Mr. T. Sakamoto (Director, Agricultural Development Cooperation Office, OTCA).

Under the said general agreement, Japan was to render her cooperation at Agriculture School in Bumbon Lima located adjacent to the double-cropping area with highest priority, in the mechanization training of extension officers (JAA), students of the said school expected to acquire JAA's qualifications and representative farmers selected by the Malaysian Ministry of Agriculture as well as in the application tests of farm machinery. For the purpose of this cooperation which was intended for establishing mechanized farming in Malaysia, Japan also pledged to the assignment of two experts and supply of necessary machinery and equipment.

The bilateral agreement based on the said agreement was concluded between the governments of Japan and Malaysia on December 29, 1970, whereby Japan's cooperation in this project was set about.

(2) Contents of Cooperation

1) A team for feasibility study of the Sungal Prai Basin development Project was sent to Malaysia in September 1967. In time with the execution of this survey, Mr. K. Saegusa (Technical Officer attached to the Agriculture, Forestry and Fisheries Research Council, Ministry of Agriculture and Forestry) and other members of the team carried out a preliminary survey on the introduction of mechanized paddy cultivation.

2) The broad guide-lines of mechanization having been laid out by the said preliminary survey, a 5-man team for project implementation headed by Mr. T. Yanagida (Director, Institute for Agricultural Mechanization) was sent to Malaysia. After a month of field survey, this team prepared a programme of Japan's technical cooperation in establishing agricultural mechanization training facilities at Bumbong Lima for the purpose of training Malaysian extension officers and extending the mechanization knowledges among the neighbouring farmers.

3) In November 1969, negotiations conducted on the basis of the above cooperation programme between Mr. T. Sakamoto (Chief, Agricultural Cooperation Development Office, OTCA) and Malaysian authorities resulted in the agreement by both parties on the details of Japan's cooperation, whereby the "Agreement on Mechanized Paddy Cultivation Training Project between the Governments of Japan and Malaysia" was signed in December 1970.

4) On the ground of this agreement, two experts were dispatched to Malaysia in March 1971 and have been engaged in cooperation activities. Since the conclusion of the cooperation agreement was delayed as described above, the Japanese government had carried forward to 1970 the budgetary allocation for the project, and supplied, upon effectuation of the agreement, machinery and equipment covering 80% of the accumulated budget. In 1971, Japan's aid in kind centred on the spare parts of the farm machinery and equipment delivered in 1970.

AGRICULTURAL MECHANIZATION TRAINING



9. THAILAND: Sericultural Development Project

(1) Outline of the Project

In continuation to its First Six Year Economic Development Plan (1961 - 1966), the Thai government is propelling its Second Five Year Plan from 1967 onward.

Under this Second Five Year Development Plan, agricultural development is one of the highest priority subjects. In particular, agricultural development of the northeastern region is given special importance as part of the "Development Scheme for Specific Areas" because of the region's extreme backwardness.

The region borders on Laos and Cambodia and suffers merciless nature which denies adequate rain fall on the already poor soil. The majority of its inhabitants are still confined to subsistence economy based on paddy cultivation.

The region is the centre of Thailand's sericultural industry, but both production and techniques of silk-worm farmers in the region is very low, and the greater part of cocoons are consumed for the farmers' own use.

However, Thai silk has been enjoying explosive international fame and its export has been in steady increase in recent years. It leaves little doubt that sericulture will grow into the most advantageous cash-earning industry in Thailand. The Thai government has therefore embarked in a positive programme for sericultural development, aiming at improving her trade balance, accelerating economic development of northeastern region and stabilizing the livelihood of its inhabitants, and approached Japan for her technical cooperation.

The following is the outline of Japan's cooperation in Thailand's sericultural development project.

- 1) Establishment of a central sericultural research and training centre at Korat, the heart of the northeastern region, where cooperation will be offered for the development of new techniques, training of technicians and production of reproductive silk-worm eggs for the ultimate purpose of accelerating the pace of Thailand's sericultural development.
- 2) Improvement and reorganization of the existing four sericultural experiment stations into the branch centres of Korat

Centre for the multiplication of improved species of silk-worms bred at the Centre and training and education of silk-worm production farmers in each district.

3) Selection of six communities of silk-worm production farmers where new techniques developed at Korat Centre will be diffused among farmers for their practical application and intensive guidance will also be provided under a new system centring on the collective rearing of young silk-worms, so that the selected communities will provide the basis for future development of Thailand's sericultural industry.

4) Development of Thailand's silk yarn industry.

To make her cooperation fruitful, Japan is to offer the services of experts who will provide the necessary advices and guidance, and also supply equipment and materials considered necessary for the project implementation.

(2) Contents of Cooperation

1) A basic survey team for agricultural development cooperation headed by Dr. H. Ishikura (Assistant Director-General on Research, Ministry of Agriculture and Forestry) visited Thailand in July 1968 to obtain first-hand information on the feasibility of sericultural development as well as on the development of irrigation and paddy cultivation. The team returned to Japan with the conviction that the requested technical cooperation would be very instrumental in accelerating the pace of Thai agriculture, and conveyed the enthusiasm evinced by the competent Thai authorities towards the project.

2) Consequently, another team under the leadership of Dr. S. Ohmura of Japan Raw Silk Corporation was sent to Thailand in February 1969. The team made an intensive study tour in various parts of northeastern region to formulate a detailed sericultural development project, and discussed with the Thai authorities concerned on the concrete ways and means of cooperation in the project, which resulted in the signing of the Record of Discussions.

3) In response to the official request of the Thai government made on the basis of the above Record of Discussions, a four-member team comprising Dr. S. Ohmura (leader-cum-silk-worm breeding), Dr. K. Aoki (pathology), Mr. Y. Higashi (silkworm improvement) and Mr. H. Goto (mulberry growing) was sent to Thailand in September 1969. This was ensued by the dispatch of Mr. Y. Hayashi (multiplication of silk-worm eggs) and Mr. T. Kojima (raw silk reeling) in 1970. In 1971, Mr. E. Iwata was sent to take over the place of Mr. Goto who had returned to Japan, and Mrs. H. Shirakura (reeling techniques) and Mr. K. Kobayashi (guidance for installation and operation of reeling machine) were also sent for a short-term service.

4) Machinery and equipment donated in 1969, 1970 and 1971 amounted in value to 68,367 thousand yen, 55,677 thousand yen and 52,682 thousand yen respectively. It is planned that 53,313 thousand yen worth machinery and equipment will be delivered in fiscal year 1972.

Machinery and equipment supplied over the past three years comprised the following:

1969 - Minimum sericultural facilities required at Korat Centre such as the rearing equipment and materials, pathological research and experiment equipment and apparatus, silk-worm cold-storage facilities, equipment for mulberry cultivation, and vehicles.

1970 - Reeling machines and mulberry growing equipment for Korat Centre, and silk-worm cold-storage facilities for one sub-centre.

1971 - Supplementary equipment for Korat Centre and silk-worm cold-storage facilities and a set of rearing apparatus for one sub-centre.

5) Japan cooperated in the project by the deputation of the following teams in 1969, 1970 and 1971.

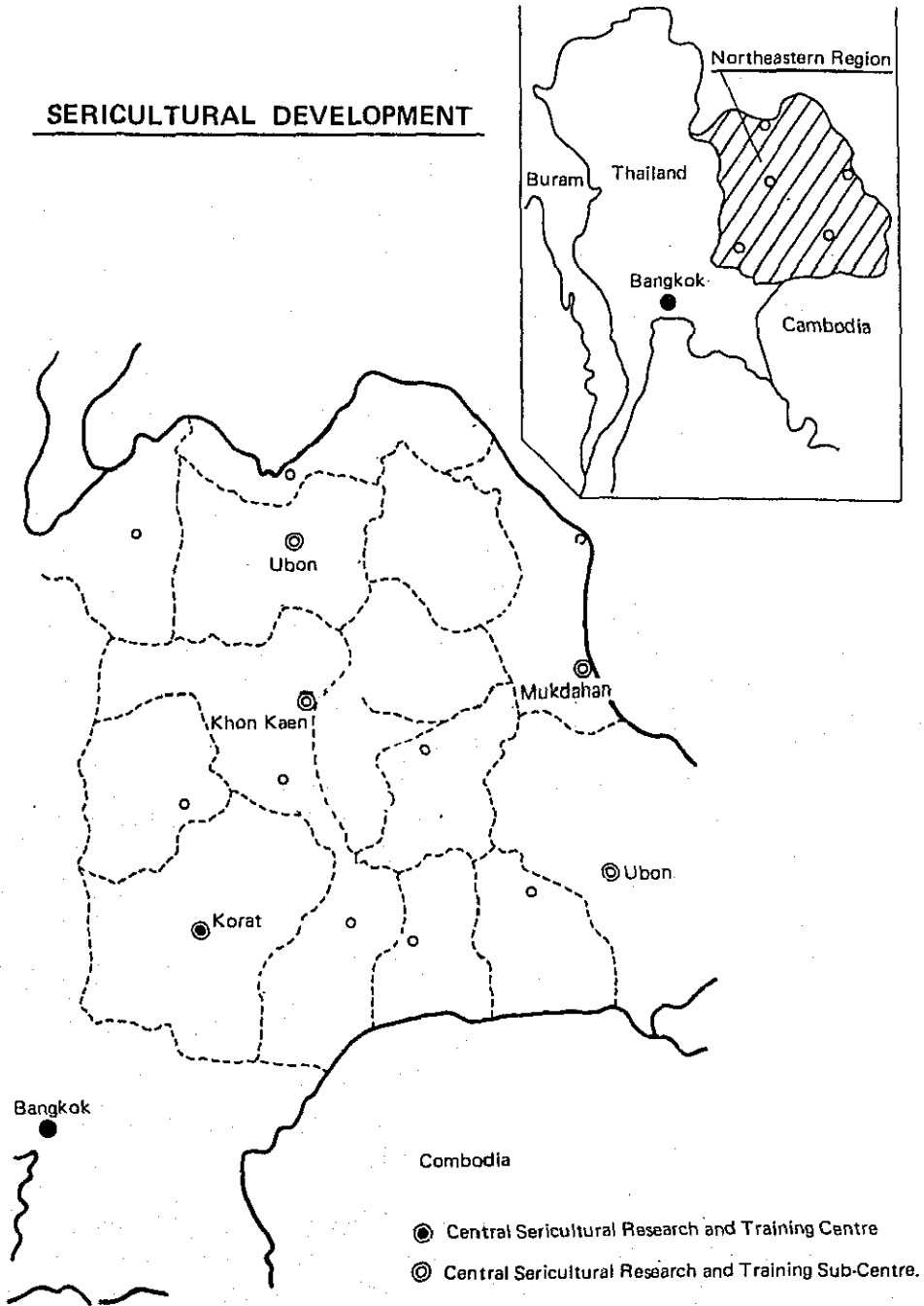
1969 - A guidance team headed by Mr. S. Konagai was sent to provide guidance on anti-pebrine measures.

- 1970 - The second survey team headed by Mr. I. Niki was dispatched to discuss with the Thai authorities on the broad outline and method of cooperation involving the rehabilitation and improvement of sub-centres, reinforcement of extension services, and accelerated installation and operation of reeling facilities.
- 1971 - The third survey team headed by Dr. T. Fukuda visited Thailand twice in 1971. The team conducted a field survey and had discussions with the Thai authorities on the extension of the cooperation period which was to expire on March 7, 1972, and signed a new Record of Discussions before its return.

6) On December 15, 1971, the inauguration ceremony of the Central Sericultural Research and Training Centre at Korat was held with an attendance of 500 persons including Mr. Preida, Vice-Minister for Agriculture and other personages from the Thai side and Ambassador Ushiroku, Director-General Tatsuke of OTCA and others from the Japanese side.

7) Modernization of Thailand's sericulture calls for the breeding of silk-worms, pebrine protection, and control of parasitic flies. Sericultural development in any country cannot be expected if any of these three problems remains unsolved, but it can be surely said that solution was brought for all of them by the past three years of Japan's cooperation in the project. What remains to be done in the forthcoming three years is therefore to promote the practical application of new techniques developed at the Korat Centre, and this can be achieved by providing intensified guidance under a new technical system centring on collective rearing of young silk-worms in six to ten communities of silk-worm farmers so that they will serve as the nucleus of sericultural extension in the future.

SERICULTURAL DEVELOPMENT



10. SRI LANKA: Rural Development in Dewahuwa Community

(1) Outline of the Project

Dewahuwa district is a paddy field area found midway between the dry zone and the wet zone of Sri Lanka, and is situated 150 km to the northeast of Colombo. The district embraces about 2,700 acres of paddy field and about 100 acres of upland field extending in the upstream area and irrigated by water drawn from Dewahuwa Tank (reservoir). Reclamation and colonization of this district was initiated by the government about 20 years ago.

Development of this district is given a vital importance in the rural community development policy of the Sri Lanka government, and is included in its 13 special projects.

The following is the outline of this project.

- 1) Establishment and guidance of farm management techniques, and introduction and extension of mechanized farming.
- 2) Guidance for effective use of irrigation water, rational water management, and maintenance and management of irrigation facilities.
- 3) Repair of main and lateral irrigation canals, improvement of tertiary canals, new construction of farm roads, and field consolidation including plot readjustment.
- 4) Installation of upland field irrigation facilities, and rendering of guidance for their rational operation.
- 5) Reorganization and strengthening of agricultural cooperative associations.
- 6) Upgrading of farmers' income level through introduction of rural industry.
- 7) Provision of guidance for improving farmers' living environment through installation of a simple domestic water supply system, and betterment of farmers' dietary life and health condition.

(2) Contents of Cooperation

1) A preliminary survey team headed by Dr. H. Nasu (Professor Emeritus, Tokyo University) was sent to Sri Lanka at the request of its government for a three-week survey beginning from mid-July, 1968. The report submitted by the team dwelt on the significance of a rural community development programme which is to be implemented in a village of suitable size where high-calibred experts can make the maximum use of whatever monetary and material resources available so that the improvements attained in that village, including the land infrastructure improvement, introduction of improved farm management techniques and organization of farmers, will have a spill-out effect on the neighbouring areas and will accelerate the agricultural development in the whole country.

Welcoming the idea contained in this report and with high hopes for its materialization, the Sri Lanka government selected eight candidate sites for such a community development scheme, and requested for Japan's further cooperation.

2) Based on the survey data provided by the first team and on the development scheme of the Sri Lanka government, the second survey team (headed by Dr. H. Fukuda, Professor Emeritus of Tokyo University, in the initial stage and by Mr. M. Oto, Director of OTCA, in the closing stage) conducted a field survey covering the eight selected sites for a period of about two months beginning from mid-February 1969, and had discussions with the Sri Lanka authorities on the details of Japan's cooperation in the project, which led to the agreement that Dewahuwa district is to be selected as the project area.

3) Based on the findings provided by the second team, a third team of 10 members headed by Mr. K. Imoto (Asst. Director-General, Agricultural Land Bureau, Ministry of Agriculture and Forestry) visited Dewahuwa district for a period of about two months beginning in July 1969. This team completed the project implementation plan, explained its substance to the Sri Lanka authorities and concluded the Record of Discussions with them.

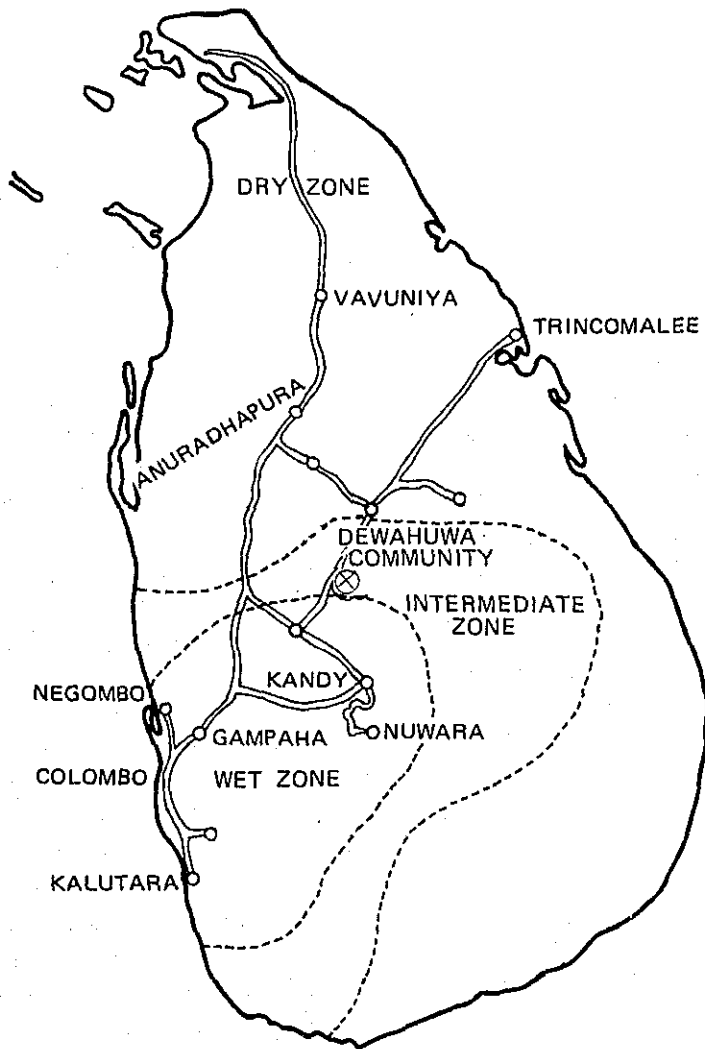
4) In compliance with the strong request made by the Sri Lanka government, the services of three experts and part of necessary machinery and equipment were provided in November 1969, though the bilateral agreement was not signed yet.

5) Negotiations for the bilateral agreement were conducted between the two governments on the ground of the Record of Discussions. The agreement was signed in October 1970 in which Japan pledged to the cooperation in the project for a period of five years.

6) Upon signing of the agreement in July 1970, three additional experts were sent, so that a total of six Japanese experts are currently being engaged in cooperation activities. Supply of machinery and equipment required for the project implementation has also been effected in a systematic manner conforming to the Sri Lanka government's request.

RURAL DEVELOPMENT IN DEWAHUWA COMMUNITY

⊗ Location of Project



11. Agricultural Extension Centers in India

(1) Outline of the Project

The Government of Japan concluded agreements with the Government of India for the establishment of Demonstration Farms; the first agreement in 1962 and the second one in 1964. According to the agreements, eight Demonstration Farms were established in India with the object of "Demonstrating the rice cultivating technique in Japanese system," and the Government of Japan has been cooperating in management of the Farms. Staffs of those Farms have obtained excellent results in cultivation and demonstration of paddy rice by repeating improvement of rice cultivating technique and attaining more yield by three or four times than that of the farmers in the environs in a short span of time.

As the eight Demonstration Farms have succeeded in "Demonstration of improved agricultural technique" which had the object for the initial stage, the whole management was turned over to the Government of India on completion of the agreed periods in 1967 and 1968.

The Government of India, however, had been requesting cooperation by the Government of Japan even after the turnover of the management, and based upon its own judgment that an extension activity as the next step of the rice cultivating technique established by these Demonstration Farms over India would contribute to an increase in rice production in India, the Government of Japan had discussions with the Government of India on the occasion of completion of the agreed period of the four Demonstration Farms under agreement. Consequently, it was decided to reorganize the two Demonstration Farms, i.e. Surat area in Gujarat State and Shahabad area in Bihar State into new "Agricultural Extension Centers".

As for the four Demonstration Farms under the second agreement, two Farms, i.e. Khopoli area in Maharashtra State and Mandya area in Mysore State were decided to be reorganized into Agricultural Extension Centers, with the Japanese Government's cooperation in supplying agricultural machinery for extension use assigning experts necessary for the reorganization together with the following extension training and practical experiments:

- 1) Practical training in improvement of rice cultivation for agricultural experts and key farmers;
- 2) Practical experiments necessary for improvement of rice cultivation;
- 3) Practical experiments and demonstration by use of improved agricultural machinery;

Under the first and the second agreements for Agricultural Extension Centers, the four Centers had conducted the above-mentioned cooperation activities, and in March 1971, the preceding year to the completion of the first agreement, a Survey Team was dispatched to India to sound up the opinion of the Indian side about an extension of the agreement of the agricultural extension center projects. Since then, discussions were repeated between the two Governments, and as for the first agreement both Governments had agreed to extend the agreement for another three years from March 1972 when the agreement is scheduled to end, provided that the setup of the Indian side is to be completed in the three years. Likewise, the second agreement is sure to be extended.

(2) Contents of Cooperation.

First Extension Centers

1) The agreement of the first stage was concluded in April 1962 for establishment of Demonstration Farms and the Farms were opened in West Bengal State, Orissa State, Bihar State. In accordance with this agreement, the Government of Japan supplied agricultural equipment and materials amounting to a total sum of ¥36.97 million together with 16 experts in total, 4 for each Farm, and cooperated in management of those Farms for five years.

Prior to the completion of the agreement in April 1967, a Survey Team was sent to India for about one month to discuss with the Government of India about possible cooperation after the completion of the agreement. The Government of India recognized well the results of the Demonstration Farms and requested further cooperation by the Government of Japan. As a

result of discussions, it was decided to reorganize Surat area of Gujarat State and Shahabad area of Bihar State into Agricultural Extension Centers.

2) Consequently, an agreement for establishment of Agricultural Extension Centers was concluded between the Government of India and that of Japan in March 1968. Seven experts were assigned to the two Centers in July of the same year for cooperation. Also necessary equipment and materials including power tillers, duster-mist blower, harvester etc, amounting to ¥34 million were provided.

Since then also the two Centers have been provided with necessary equipment and materials; in 1969 Arrah (Shahabad) Agricultural Extension Center was provided with tractors and Vyara (Surat) Agricultural Extension Center with mainly analytical apparatus and parts for agricultural machinery. In 1970 and 1971, both Centers were provided with mainly agricultural machinery and experimental equipment.

Second Extension Centers

1) An agreement was concluded in December 1964 for establishment of the second Demonstration Farms, and the Farms like those of the first agreement were established in such States as Maharashtra, Kerala, Mysore and Andhra Pradesh. According to the agreement, the Government of Japan provided those four Farms with agricultural equipment and materials amounting to ¥46.9 million, and also assigned 16 experts in total, four for each center. A Survey Team was sent to India before the completion of the agreement for the period from April to June 1968, and based upon the technical judgment of the Team, it was decided to reorganize the two farms, Khopoli of Maharashtra State and Mandya of Mysore State into Extension Centers.

2) An agreement for the above-mentioned object was concluded in December 1968, and four experts for each of the two Centers were assigned in January and cooperation has been carried on. Agricultural equipment and materials necessary for the project amounting to ¥31.94 million were provided in the fiscal year of 1968. In 1969 fiscal year, machine tools,

machinery for observation and experiment uses and parts of agricultural machinery amounting to ¥8.51 million were supplied. In 1970 fiscal year, agricultural machinery and parts, equipment and materials for experimental use were supplied to both Centers; and in 1971 fiscal year, machine tools and equipment and materials for extension works were mainly provided.

3) Cooperation of Area Development Programme Around Centers.

The State Government of Maharashtra, according to the recommendation and guidance of Khopoli Agricultural Extension Center, prepared the Area development Programme for the environs of the Center by the main system of collective introduction and utilization of agricultural machinery for the purposes of increasing rice production in the three districts covering about 10,000ha around the Center and also coping with the labor shortage caused by urbanization in the suburbs of Bombay, and requested the cooperation by the Government of Japan in the plan on the basis of the second agreement. Accordingly, the Government of Japan decided to meet the request within the provisions of the second agreement, prepared a memorandum including method of improving the rice cultivating technique established before Agricultural Extension Center started and also practical methods of extension works of the results obtained from the activities after the conclusion of the second agreement, and concluded an agreement with the memorandum with the Government of India on March 31, 1970.

On the basis of the memorandum, three experts in charge of extension works (for three years) and two experts in charge of farmland consolidation (for six months) were assigned in February 1971 and May 1970, respectively.

Also necessary equipment and materials amounting to ¥32 million were provided in 1969 fiscal year.

(3) Outline of Itinerant Technical Guidance Survey & Discussions on Projects About the four Extension Centers.

- 1) For the purpose of examining technical guidance and extension system for the first and the second Extension

Centers, a Survey Team headed by Mr. K. Yanagiya, Director of Technical Cooperation Division, Ministry of Foreign Affairs, was assigned in February 1969 for about one month.

2) In October 1969, Mr. H. Wakimoto, Chief of First Specific Disease Laboratory of Agricultural Technique Institute was dispatched for one month to Arrah Agricultural Extension Center in Bihar State and four other Centers to investigate the causes of bacterial leaf blight which broke out widely in and around the Center and other diseases damage and to guide counter-measures. The report made by Mr. H. Wakimoto was highly appreciated by the Government of India, cooperation has been requested for similar activities, and a Survey Team headed by Dr. S. Yoshimura, Agricultural Experiment Station, Ministry of Agriculture & Forestry was assigned in August 1970 for 35 days for guidance for forecast of outbreak of disease damage in India.

3) In 1970 fiscal year, the third year of the Extension Centers, a Survey Team headed by Mr. T. Sakamoto, Director of Agricultural Cooperation Department of OTCA was assigned to discuss about agricultural extension center projects in India and the Team was engaged in settling the problems left undecided.

In March 1971, a Team headed by Mr. H. Yoshihara, Director of OTCA was dispatched to discuss with and sound the opinion of the Indian side about the Extension Centers, centering on the treatment of the first agreement that would expire in the following year.

4) In 1971 fiscal year, the Government of India requested again the Government of Japan to assign a Survey Team for investigation of the damage of pests and diseases, and a Team was assigned in September 1971 for 50 days to 4 Agricultural Extension Centers and Dandakaranya Agricultural Development Project.

As a large-scale disease damage is brought about in India every year, the Government of India concluded that the reduction in agricultural production was mainly caused by the damage of pests and diseases and requested the Government

of Japan for long-term cooperation in extermination of blight.

A Survey Team was assigned by a request from the Government of India in March 1972 for one month to Arrah Agricultural Extension Center to conduct feasibility survey for installation of tube-wells at the three sub-centers under Arrah Center.

12. Cooperation in Agricultural Research in India

Since 1962 when the four "Indo-Japanese Demonstration Farms" (these Demonstration Farms were reorganized into Agricultural Extension Center in 1968) were established in four States in India, exchange of agricultural technology between Japan and India has been gradually deepened, and furthermore both Japanese and Indian experts have been doing their best in cooperation for settling various technical problems brought about at the Centers and the exchange is now very close to each other. Particularly in 1969 Japan's cooperation for countermeasure for extermination of the rice disease "bacterial leaf blight" broken out in northern States of India gave an impetus not only to the countermeasure taken on the spot but also to the research and study at various research institutes in India. Recently, however, more technical information and basic data are required for solution of various difficult problems brought about in pace with the advancement of rice cultivating technique in India, and systematic cooperation in research and study between India and Japan becomes necessary to cope with the situation.

Meanwhile, the Government of India, from the nutritious viewpoint for the nation, has been promoting production of fruits and vegetables to secure amount of fruits and vegetables in proportion to the population increase rate, however, the target has not been attained yet.

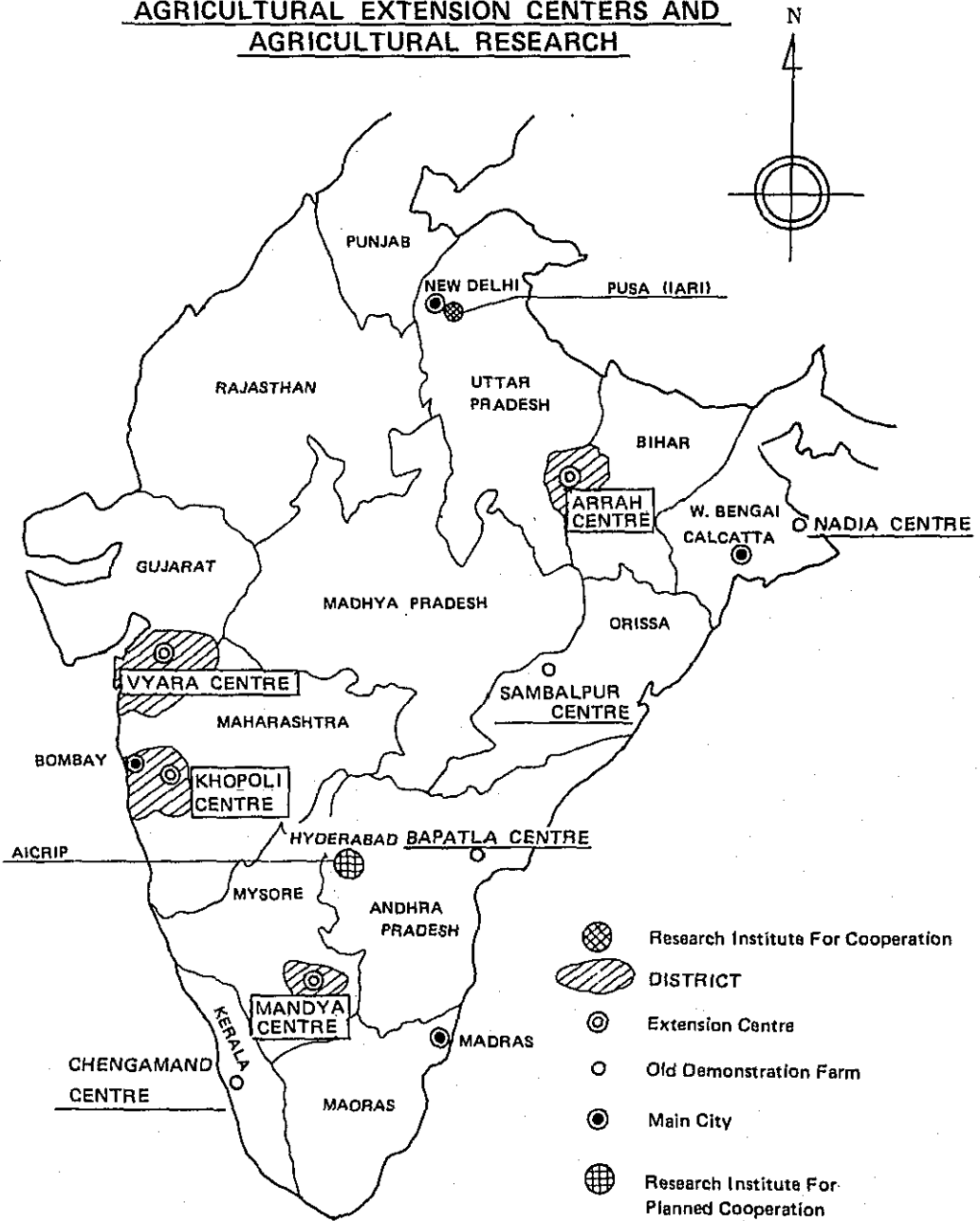
The Government of India has come to understand that India as a whole almost attained the production of main cereals and must shift its effort to promotion of horticulture for food production of higher standard (dimension) and must follow the Japanese pattern.

From the view-point that it is the most important for Japan to meet with the request from India for technical cooperation in the field of rice cultivation and promotion of horticulture by means of cooperation in research and study works, a Preliminary Survey Team headed by Mr. K. Nagai, Director of Tropical Agricultural Research Center was sent in November 1971 to conduct feasibility survey for cooperation in agricultural research and study. The Team discussed with the officials of the Government of India, and agreed that, as for rice cultivation there were still so many things to do for extermination of diseases even at the present stage where rice cultivation was being steadily promoted in India and cooperation should be made between India and Japan for joint research and study for

establishment of a method to forecast every probable large-scale outbreak of main blights in India. As for horticulture, the Team could not fully conduct arrangement survey due to an emergency (the war between India and Pakistan) and no practical plan for cooperation could be prepared.

It is planned for the future to dispatch a Survey Team in October 1972 to conduct a survey for cooperation in agricultural research and study in India, prepare Record of Discussions, and after an agreement is signed between the two countries, experts are to be assigned and necessary equipment and materials are to be supplied.

**AGRICULTURAL EXTENSION CENTERS AND
AGRICULTURAL RESEARCH**



13. Dandakaranya Agricultural Development Project in India

(1) Outline of the Project

The Dandakaranya district in India was particularly developed by the Central Government of India for relief of the refugees and for the policy to fix the natives. The district consists of four areas, namely Raighar area, Umarkot area, Paralkote area and Malakanagiri area. The Dandakaranya Development Authority is located in New Delhi, and various development projects for the district are promoted under the direct control of the Central Government. Since a Survey Team was dispatched to India in 1967 for the 7th itinerant technical guidance, the Government of India has often requested Japan's cooperation in the development projects of the district.

In response to the request, the Government of Japan assigned a Feasibility Survey Team for Dandakaranya agricultural development project in July 1969 and also the Implementation Design Survey Mission in November of the same year, and then the following basic plan for cooperation was prepared.

- 1) For rural development, a model area is set up at the inundated area of 500 acres (including communities of PV13 and 14) along the Pakhanjore Main Canal in Paralkote area; such infrastructure as irrigation and drainage system and farming technique are improved with the objects of increasing agricultural production and improving the farmers' living.
- 2) The Pakhanjore Main Canal is improved for the purpose of obtaining irrigation in the area of 500 acres.
- 3) An irrigation system for the upland is established at the area of 120 acres along the Pakhanjore Main Canal.
- 4) At a lowland of 130 acres and a upland of 50 acres in the Mixed Farm northwest to Bastar, farmland and irrigation and drainage equipment are consolidated and farming technique is improved; and also training is given to regional farmers and extension workers who are engaged in community development project.

Based upon the above-mentioned plan, "Agreement for Agricultural Development Project of Dandakaranya District in India" was concluded between the two Governments of India and Japan on August 19, 1970, and Japan began full-fledged cooperation under the Agreement.

In October 1971, at the 2nd Joint Committee meeting under the Agreement, the Government of India requested Japan's cooperation in development of PV125 area instead of PV14.

(2) Contents of Cooperation.

1) In December 1967 the 7th Itinerant Technical Guidance Team for India was requested and investigated at Malakanagiri area in Dandakaranya district. The result of the reconnaissance survey was that the area was in the second year of settlement and facilities and environment were not favorable for effective cooperation. The Government of India, however, has often requested cooperation for the area.

2) In February 1969, the 8th Itinerant Technical Guidance Team conducted a reconnaissance survey at Paralkote area in Dandakaranya district. Consequently, in July of the same year a Feasibility Survey Team (headed by Mr. K. Endo, Counsellor, Agricultural Administration Bureau, Ministry of Agriculture & Forestry) was assigned to India for selection of areas for which cooperation be made, and had discussions with the Government of India about the contents of cooperation to be made by the Government of Japan.

In November of the same year, the Government of Japan dispatched to India a Project Survey Team for two and a half months headed by Mr. Y. Miki, International Cooperation Division, Ministry of Agriculture & Forestry and Mr. S. Ota, Director of Ibaraki International Training Center, 10TCA to conduct implementation design survey in the former and latter period respectively.

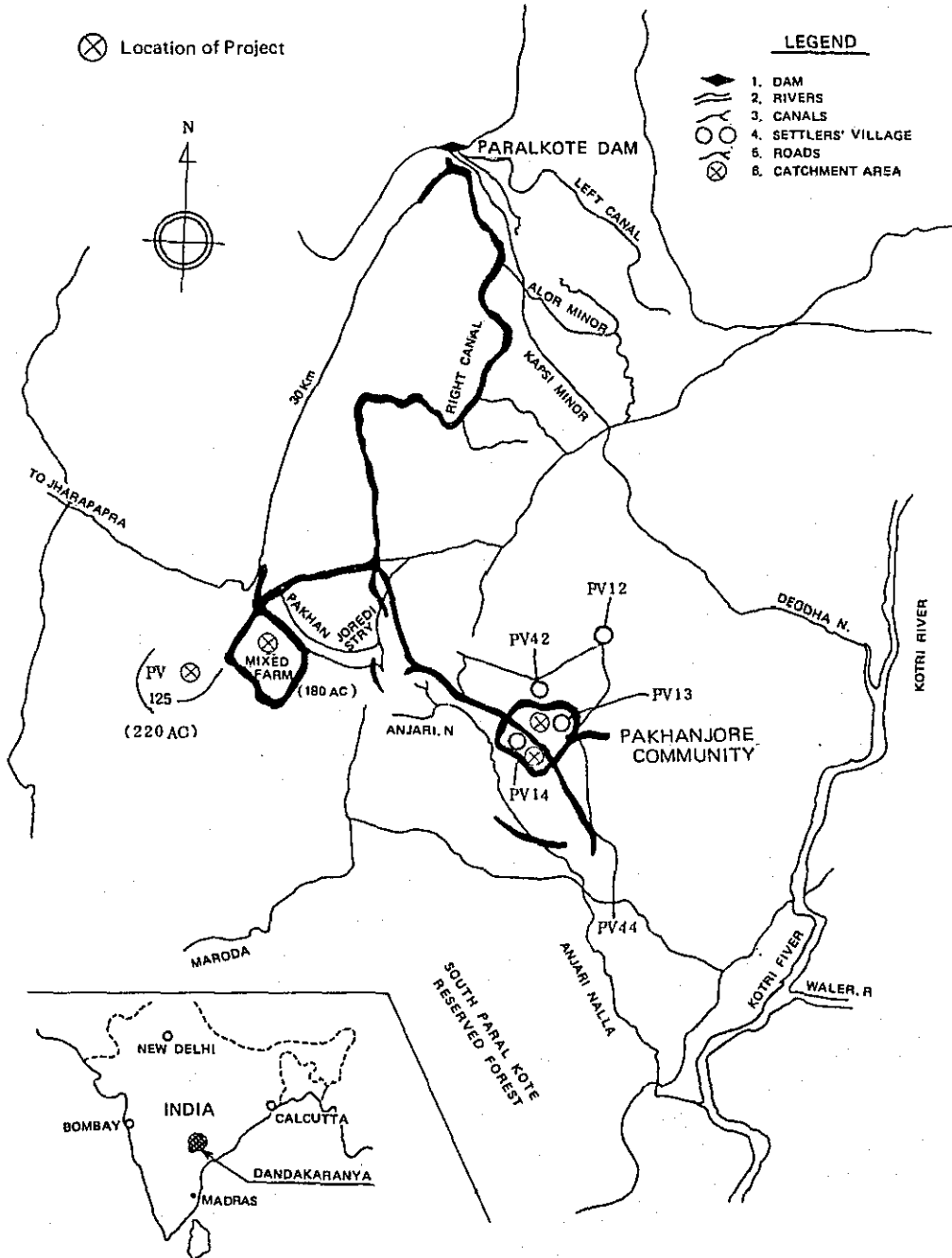
Discussions were made based upon the results of the survey with the Government of India and the plan for cooperation was prepared.

3) After its return to Japan, the Implementation Design Survey Mission prepared the Report on Project Plan and

submitted to the Government of India. After discussions were repeated between the two Governments, on August 19, 1970 "the Agreement for Cooperation in Agricultural Development of Dandakaranya District in India" was concluded.

4) According to the Agreement, six experts were assigned in October 1970 and cooperation has been continued. As for equipment and materials required for the project, mainly machinery for infrastructure was provided in 1970 fiscal year and agricultural machinery mainly in 1971 fiscal year. In April 1971 a Project Survey Mission was assigned to India for design and guidance for the inundated area along the right bank of the canal in Paralkote. In September of the same year an Itinerant Technical Guidance Team was dispatched for agricultural extension centers and also for investigating the damage of pests and diseases was given for countermeasure to blight damage, and what had been undecided.

DANDAKARANYA AGRICULTURAL DEVELOPMENT



14. Cooperation in Agricultural Development in Nepal

(1) Outline of the Project

The Government of Nepal is promoting its economic development in accordance with the 4th Five-Year plan (1971 - 1975). In Nepal, more than 90% of the population is engaged in agriculture and the emphasis for economic development is placed on agriculture.

In April 1969, the Government of Nepal requested the Government of Japan for cooperation in agricultural development in such Zones as Narayani, Janakpur and Mechi. In response to the request, the Government of Japan assigned a Feasibility Survey Team for Cooperation in Agricultural Development in Nepal headed by Mr. Hitoshi Fukuda, emeritus professor of University of Tokyo in March 1970. An Implementation Survey Mission was assigned in November 1970 and the essential features of plan were prepared. According to this plan, in October 1971 an Implementation Design Survey Mission was assigned and the practical details of cooperation were set up as follows.

- 1) Cooperation will be made in various fields of agriculture all over the area of Janakpur Zone which is one of the 14 Zones in Nepal.
- 2) The priority of cooperation will be laid on training to be given to farming technicians of all levels and extension plan for farmers, and cooperation will be made as follows:
 - (a) As for Hardinath Extension Farm Project, the following activities will be carried out in the National Farm of 40ha:
 - (i) Introduction and demonstration of new cultivating technique of paddy rice, wheat and other upland crops (in Tarai Plain)
 - (ii) Various experiments and tests for extension of paddy rice, wheat and other upland crops.
 - (iii) Training of extension officers and extension workers

(iv) Production of extra-fine seeds and seedlings of various crops necessary for extension

(b) As for Janakpur Zone Extension Plan, the following cooperation will be made all over the area of the Zone:

(i) Guidance of cultivating technique at a farm (420ha) equipped with deep well and simple irrigation and drainage systems

(ii) Improvement of the conventional farming technique at a properly authorized extension area and introduction of new farming technique which is acceptable for the farmers

(iii) Guidance for organization and activities of farmers' organization for effective promotion of extension of farming technique

(iv) Guidance for agricultural development at hilly and mountainous areas

(c) As for Rapti Model Farm Plan, the following activities will be made in the National Farm of 8ha:

(i) Introduction and demonstration of new cultivating technique of paday rice, wheat and other upland crops (Inner Tarai, Hill Areas)

(ii) Construction of irrigation systems around the Model Farm and extension of new farming technique (about 100ha)

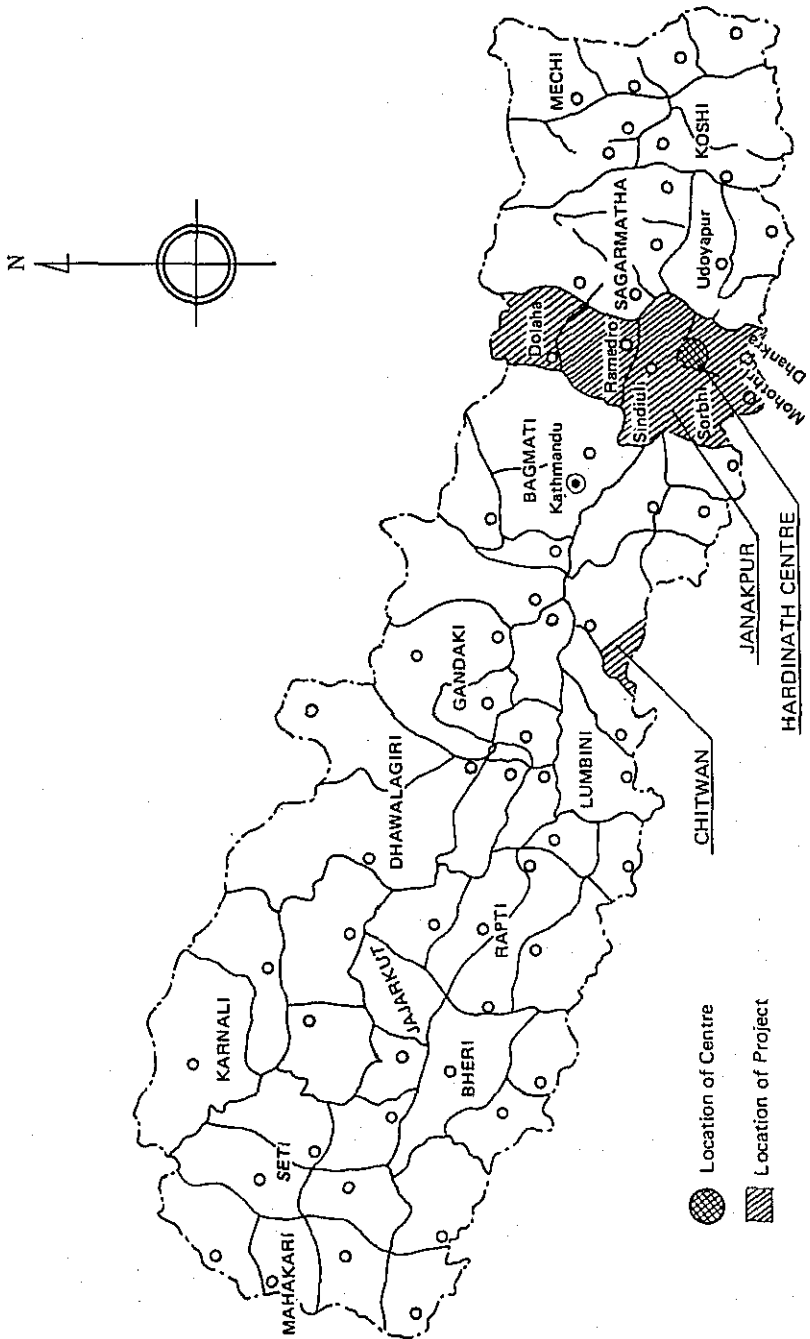
(2) *Contents of Cooperation.*

1) In March 1970 a Preliminary Survey Mission headed by Dr. Hitoshi Fukuda, Advisor of OTCA (emeritus professor of University of Tokyo) and consisting of six members was assigned to Nepal for one month to conduct preliminary survey in Kankai area, Rapti Farm and Janakpur Zone in the eastern part of the country.

(2) As the first Preliminary Survey Mission could not complete the survey for all areas requested due to traffic condition etc., a Nepal Project Implementation Survey Mission was assigned for 36 days from November 22, 1970 for the purposes of selecting proper areas for cooperation and deciding practical cooperation activities.

(3) In June 1971 a Mission for arrangement was assigned to discuss about the detailed result of the project implementation survey and the future course. In October 1971 a Project Implementation Design Survey Mission was assigned to exchange the Record of Discussion for implementation of projects. The projects were started (November 26) with two years for preparations and for a period of five years of cooperation with five experts.

AGRICULTURAL DEVELOPMENT



15. Agricultural Development in Bangla Desh

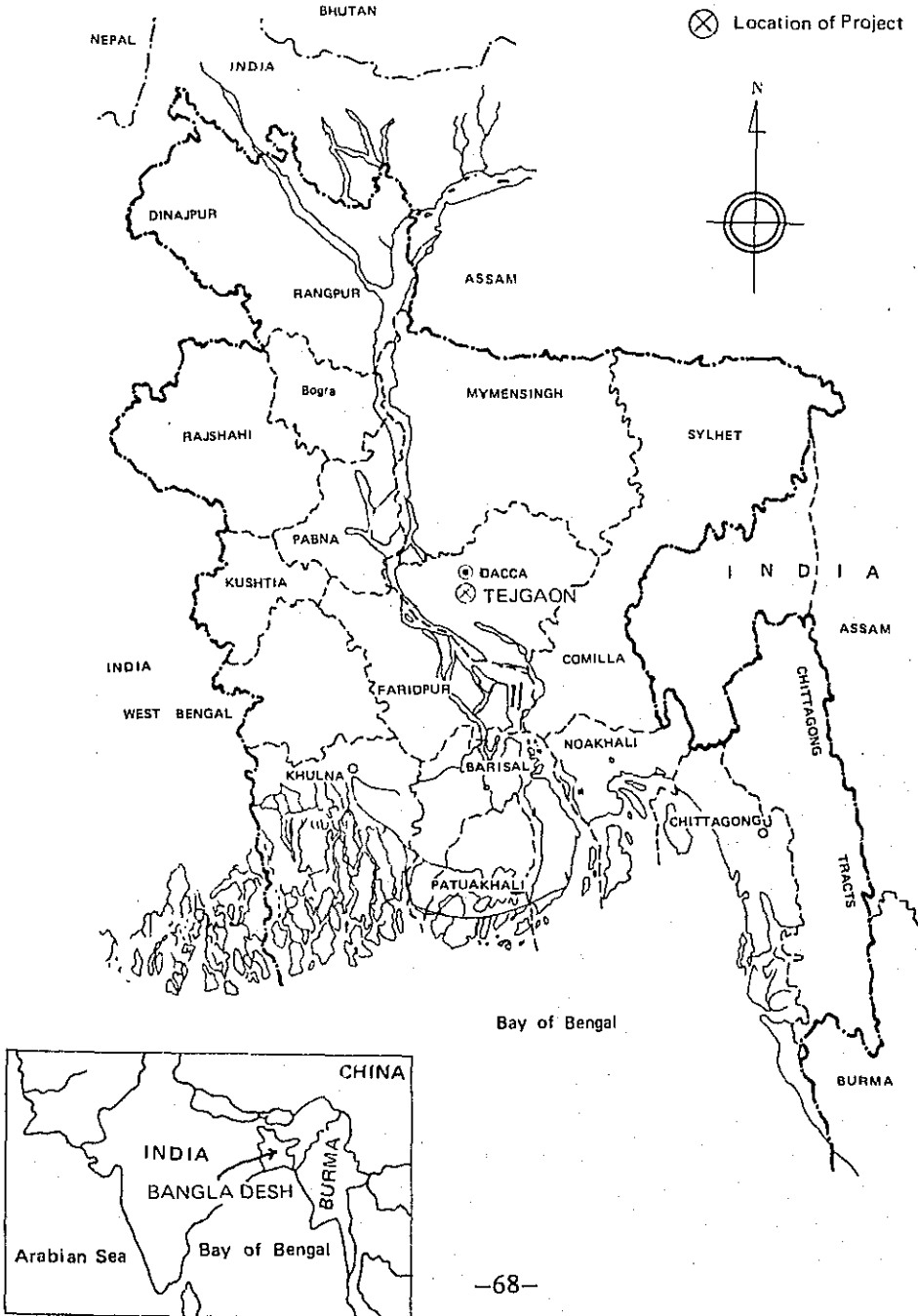
In Bangla Desh (East Pakistan) which became independent of the Government of Pakistan in December 1971, 83% of the population relies upon agriculture, and the cultivated area for paddy rice is 22 million acres. Though the proportion of farm land to the total area of the territory is very high, the country has to import food of about 1.2 to 1.5 million tons a year, constantly lacks in food and the people are in the state of very unstable economic life.

With this situation as a background, the Government of Bangla Desh is doing its best with the Emergency Food Production Increase Plan as the first-priority policy. As part of the Plan, the Government drew up a plan to reorganize and enlarge Dacca Agricultural Mechanization Training Center which was established by the former Government of East Pakistan in cooperation with the Government of Japan into a new Farm Mechanization Training Institute with some pilot projects as well as 7 sub-centers throughout the country, and requested the Government of Japan for cooperation. In response to this request, a Survey Team consisting of Mr. Y. Miki, Assistance Director of International Cooperation Division, Ministry of Agriculture & Forestry and other 2 members was assigned in August 1972, and the following plans for cooperation were prepared.

- (1) At Tejigaon Farm Mechanization Training Institute, practical training, demonstration and education about operation and repair of agricultural machinery will be conducted for extension workers of the county and village level.
- (2) At a pilot project area of a suitable scale which belongs to the Training Institute, demonstration of agricultural mechanization and modern farming technique will be made for the above-mentioned extension workers and the regional farmers.
- (3) Technical guidance to junior experts to be assigned to the 7 sub-centers under the Institute.

As for the future plan, the second Implementation Survey Mission will be assigned, a plan for cooperation will be made up in detail, Record of Discussions will be concluded, and necessary equipment and materials will be supplied and also necessary experts will be assigned for cooperation.

AGRICULTURAL DEVELOPMENT



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