

for the Near & Middle East & Africa Region were noticeably as few as 2 cases, i.e. 4.7 per cent. Even for the amount per case, the Colombo Plan Region and the Latin America Region each average 4.90 million yen, while the Near & Middle East and Africa Region averages only 3 million yen. As for the tendencies of the related projects, the 88 million yen worth of equipment associated with the dispatch of experts (16 cases) was 2.5 times the 34 million yen worth of material associated with trainee acceptance (10 cases). The unit amount per case is 5.5 million yen for dispatch of experts compared to 3.4 million yen for trainee acceptance. As equipment supplies are often induced by dispatches of expert, advisors, it can be said that more expensive equipments tend, relatively speaking, to be supplied in this case than in the cases

of trainees acceptance.

The achievements of equipment supplies classified by countries and by industries consisted of supplies to educational establishments: Heavy industrial equipments supplied to vocational training establishments in the Philippines and Iran, mining and construction equipments for university laboratories in Kenya and Nigeria, and fishery equipments for fishery schools and fishery colleges in Chile and Mexico respectively.

## 2. Examples of Equipment Supply

Twenty-six cases of equipment supply were carried out from fiscal year 1971. As in the case of the dispatch of experts, the ratio to equipment supply to the agriculture and fishery sector and to the "infrastructure" in general is high.

## CHAPTER 4

# OVERSEAS TECHNICAL COOPERATION CENTERS

### *Section 1. Outline of Overseas Technical Cooperation Centers*

As part of the technical cooperation, programs overseas technical cooperation centers are established in developing countries with the purpose of contributing to exploitation of manpower, development of science and technology, the improvement of productivity and so forth, all of which are required for socio-economic development in these countries.

The establishment of a cooperation center is based on governmental agreement (usually for 3 years) between the Governments of Japan and the recipient nations. According to this agreement, Japan would dispatch experts (technical directors) and donate equipments for the training. The recipient nation, in principle, would bear all necessary expenses for the land, the buildings and indigenous personnel as well as for the maintenance and management of the facilities.

Beginning with the establishment of an agricultural training centre in the then Pakistan (now Bangladesh) in 1960, 33 such centres established included the Surat Thani Technical Training Centre for Road Construction established in Thailand in 1971. The classification of these centers by industries is as follows: (1) 11 centres for farming, (2) 7 centers for light industries, (3) 4 centers for public works (telecommunication), (4) 3 centers for fishery, (5) 2 centers for medical care, (6) 2 centers for (road) construction, (7) 7 centers for light industries, and (8) 4 centers for heavy industries. The regional classification showed that (1) 25 centers located in the Colombo Plan Re-

gion (Asia), (2) 6 centers in the Near and Middle East and African Region and (3) 2 centers in the Latin American Region.

### *Section 2. Achievements in Fiscal 1971*

#### 1. Vocational Training Centre in (Taiwan)

##### (1) Details of Establishment

The Government of Taiwan has set up a 4 year plan for manpower development and, in the course of promoting this plan, has requested cooperation from Japan for the planned establishment of vocational training centers in the Northern region (Keelung) and the Southern region (Kaohsiung) respectively. Upon request, Japan dispatched a preliminary survey team in February, 1969, and an implementation survey team in June of the same year. An implementation policy was made on the basis of the survey team's findings and an agreement for the establishment of the centers was signed in December, 1969.

##### (2) Activities

###### a) Dispatch of Personnel

Japanese personnel presently on duty totals 15 persons. They include a senior adviser in charge of coordination affairs and administering in both centers in the Northern and Southern regions. At the Northern Center, five experts in the fields of electricity, shipbuilding metal work, internal combustion engine assembly, shipbuilding engineering, draftmanship and welding work under an assistant adviser while at the

Southern Center, 7 other experts in the fields of casting, welding, plant electricity, wood molding, can manufacturing, machine assembly and mechanical drawing working under another assistant adviser, have been dispatched for technical guidance.

b) Supply of Equipment

For fiscal 1971, 36.032 million yen were spent to supply drilling machines etc., and the remaining 68.568 million yen was carried over to 1972.

c) Training of Counterparts

A total of 9 counterparts, i.e. 4 in welding, 2 in electricity, 1 in finishing and 2 in machinery were trained in Japan for 4 months from April to August, 1971.

This was followed by a second group of 8 including 2 for machinery, 2 for finishing, 1 for mechanical drawing, 1 for shipbuilding steel work, 1 for ship equipment and 1 for casting, who were trained in Japan from October to the end of January.

d) Local Trainings

The centers are given mainly for the training of fellowship trainees from various companies. At the Southern Center, training was carried out in the following system of divisions and classes: (I) Machinery Division: a) Formation class, b) Re-education class; (II) Electrical Division: a) Formation class, b) Re-education class, c) Formation class for Electrical Machinery; (III) Electrical Welding Division: a) Crash course class, b) Re-education class; (IV) Mechanical Drawing Division: a) Crash-course class, b) Re-education class. At the Northern Center, training courses consist of the Machinery Division, Welding Division, Electrical Division, Can Manufacturing Division and Ship Equipment Division. During the fiscal year 1971, a total of 862 trainees, i.e. 485 in the Northern Center and 377 in the Southern Center, have received training.

e) Future Problems

With only one year and several months remaining before expiration of the agreement for the centers, 17 more counterparts have studied in Japan in the current fiscal year. However, considering that there are the two centers of the North and the South, and that there are numerous divisions and trainees, a mere 17 counterparts is not at all sufficient.

## 2. Technical Development Center for Small-Scale Domestic Industries in the Philippines

### (1) Details of Establishment

The project began after an agreement for the establishment of a center was concluded on the 29th of September, 1966, between the government of Japan and the Philippines. Installation of machines was completed in July, 1969 and construction of the main building and dormitory was achieved in October of the same year followed by an opening ceremony. Up to fiscal 1970, a total of 83 million yen worth of equipment has been supplied, and a total of 10 experts

have been dispatched for the implementation of co-operation.

Training started from December, 1969, and 45 trainees have graduated in fiscal 1970 paving the way for trainings in fiscal 1971.

### (2) Activities

During fiscal 1970, courses for the 3rd class (3 months), the 4th class (6 months), the 5th class (2.5 months) and the 6th class (6 months) have been offered, and a total of 257 trainees in the fields of management, fiber, finishing, forging, machinery, ceramic industry and wicker wares have graduated. Moreover, in accord with a 2 year extension of the agreement beginning in September, 1970, 25 million yen worth of additional supplementary equipment requested by the Philippines were supplied financing them by balances from the previous year's budget. In June, 1971, at the 4th classes graduation ceremony a catalogue equipment to be supplied was formally presented.

Training in Japan of counterparts for the ceramic and textile industries have been realized, thus completing the education of counterparts in all fields except that in bamboo and wisteria wares. For the latter, individual trainings will be effected by next fiscal year and studies for assistants are also scheduled.

## 3. Prototype Production Training Centre in Singapore

### (1) Details of Establishment

A preliminary survey team was dispatched by Japan in March, 1965 followed by an implementation survey team in June, 1966. After careful examination, co-operation for the establishment of this center was decided and an agreement was concluded in October, 1966.

This center is composed of a manufacturing department (the manufacturing department consists of factories for machine manufacturing, metallic mold of tools, heat treatment, die casting, forging, plating and welding etc.). Under close collaborations between the two departments and in the actual process of production, integrated training was to be given to engineers, technicians, skilled workers and semi-skilled workers in the design, manufacture and finishing of trial products of metal machines.

In conformity to the agreement, Japan purchased and delivered 124.348 million yen worth of equipment in fiscal 1967, and 30 million yen worth of equipment in 1968 and 1969 respectively. Meanwhile, 11 persons were dispatched between August and November, 1967 and another one in February, 1969, bringing the total to 12 persons.

After the creation of the designing department in January, 1968, full-scale trainings in all departments began from the 1st of June. The center was then officially opened on the 14th of February, 1969. Prototype productions consisted mainly of the manufac-

tute of desk-type boring machines and of trial manufacturing of fork lifters. Several courses including those for short-term trainees from outside were conducted, and the number of trainees increased to 300 per year.

The Center, which was to expire in October, 1970, was extended for another 2 years upon request from the Government of Singapore. Thus, Japan continued the cooperation by dispatching further personnel to the departments of mechanical processing, manufacturing of metallic molds, design of metallic products, forging, die casting, heat treatment, plating and welding. Furthermore, a department for shipbuilding consulting was newly created on this occasion.

## (2) Activities

### a) Dispatch of Personnel

After extension of the agreement, the three departments of forging, heat treatment and die casting remained vacant of Japanese personnel. As it turned out the dispatch of personnel for heat treatment and die casting departments was impossible. These two departments were separated from the center to come under full administration and management by the Singapore Government. As for the forging department, an expert was dispatched in October, 1971.

### b) Supply of Equipment

With balances carried over from fiscal year 1970, 10,449 million yen worth of additional equipments have been purchased and delivered by the end of fiscal 1972.

### c) Training of Counterparts

Following extension of the agreement, 2 counterparts of a newly created shipbuilding consulting department were received in Japan for a 6 months study from July to December, 1971.

### d) Education of Trainees

Trainees in this Center consist of newly graduated students, ex-military personnel, scholarship trainees from civilian enterprises, etc., and although training periods are generally one year, they are not always of this length. Up to the end of March, 1972, trainees for that fiscal year numbered 24 including 1 for mechanical designs, 10 for mechanical processing, 6 for manufacturing of metallic molds, 4 for thin plate welding and 3 for plating.

## 4. Technical Cooperation Project for Fishing Industry in Indonesia

### (1) Details of Establishment

This project was devised as part of fishing cooperations following the conclusion of a tentative agreement on the 27th of July, 1968, and was formerly established by Japan-Indonesia Governmental Agreement for Technical Cooperation in Researches and Training of Fishing Industry.

Fiscal 1971 being the last year of cooperation by the 4 Japanese experts involved, their activities have been centered on setting research themes as well as

on creating an organization allowing independent research activities by their Indonesian counterparts after the completion of Japanese project. Meanwhile, a total of 16,485 million yen worth of equipment has been supplied in this fiscal year. This includes equipment for refrigeration, canning, laboratory, work shop, chemicals, machinery and tools and equipment related to trawl ropes used in tuna fishing.

### (2) Activities

Activities of each department in fiscal 1971 are as follows:

#### 1) Institute of Marine Fishery

On-board training was given during 6 cruises (approximately 100 days) for a shrimp trawling survey based on the Sunda Shelf Survey Project. Training included navigation guidance, fishing operation guidance, advice on how to handle equipments on board, and training of local trainees.

Advice and instruction based on on-land surveys consisted of surveys about sardine, bonito and mackerel, and researches on tuna bait. Also, instructions on design of winding nets used for shellfish fishing have been given.

#### 2) Institute of Fishery Technology

Activities in fiscal 1971 have been published in the "Research Report of the Institute of Fishery Technology No. 1, 2."

In the field of refrigeration, various tests on manufacturing of tuna bait for milk-fish, on coloration of peeled and cooked shrimp, on manufacturing of loin, cooked shrimp, mackerel products for retail sales and canning materials, and frozen tuna, etc., have taken place.

With regard to canning, manufacturing tests on mackerel canning with tomato sauce have been carried out.

#### 3) Fisheries Academy

Both lectures and actual practice guidance were given for the fisheries faculty. Lectures were given on "World Fishing-Grounds," "Necessity of Fishery" and "Introduction to Modern Fishing Implements," and guidance was given for actual practice in making winded nets.

Activities consisted of giving lectures to students with some corresponding actual practice guidance, as well as instructions and explanations for the maintenance of a marine production laboratory, the assembly testing and handling of supplied equipment.

## 5. Surat Thani Technical Training Center for Road Construction

### (1) Details of Establishment

In November, 1968, an unofficial request was filed by the Thai Government to the Japanese Government with regard to the establishment of a road construction center at Surat Thani, in Southern Thailand. This was followed in October, 1969 by an official request

for Japanese cooperation in the construction of a 80 kilometer-long road between Surat Thani and Si Chon and in the training local technicians. The road was to follow a line from Surat Thani to Nakhon Si Thammarat, along the Eastern coast, as part of the Southern Region Development Projects in Thailand.

In response to it, the Japanese Government began consideration of the project by setting up, a "Training Center Establishment Committee in April, 1970, and dispatched a preliminary survey team from May to June, 1970. In October, 1970, an implementation survey team consisting of experts in charge of civil engineering and another in machinery, was dispatched to arrange various concrete matters concerning establishment of the center.

After the implementation survey, it was decided that 4 specialists in civil engineering and construction work and 6 others in charge of machinery would be dispatched within fiscal 1970; and it was planned that equipment in the first fiscal year would consist mainly of construction machinery, and that 205 million yen worth of such equipment would be purchased and sent. The agreement was signed in May, 1971.

## (2) Activities

### 1) Dispatch of Personnel

In conformity to the above mentioned agreement, an advance team of 5, i.e. a managing director, 3 members in charge of civil engineering and construction and 1 member in charge of machinery, were dispatched in June, 1971, followed two months later by the remaining 5 members in charge of machinery, making a total of 10 members.

### 2) Supply of Equipment

Equipment consisting mostly of bulldozers and engineering test machines, and worth a total of 227,873 million yen was purchased and supplied with carried-over budget from fiscal 1970. Rollers and related machinery worth a total of 123,640 million yen was purchased and supplied using the budget of fiscal year 1971.

### 3) Training of Counterparts

Up to this date (end of March, 1971), Thai staff consists of the following:

Director	1
Assistant Director	1
Civil Engineers	4
Machinery Mechanics	2
Drivers and Others	177

Thai assistant director was invited to Japan for studies from mid-January to early March, 1972.

### 4) Education of Trainees

Lectures have been given on road construction designs, soil test, repair and maintenance of machines and their operation. In particular, training for construction works have been done with an on-the-spot survey, alignment design and drawing up of itinerary,

etc. On-the-job training has been general practice.

## 5) Outline of Management of the Center

Personnel in charge of construction works carried out planning of alignment, drawing up of working schedules, soil tests, etc., while personnel in charge of machinery made arrangements for the arrival of equipment supplied in accord with the fiscal 1971 budget. Soon after the arrival of the equipment in late October, construction work began with land readjustment and other site cleaning operations. With the dry season beginning in January, 1972, construction of access roads to the construction site, improvements and enlargements of the present roads as well as sub-base works and banking works have been started. Thus, the construction works are smoothly under way.

## 6. Telecommunication Research Centre in Iran

### (1) Details of Establishment

The Government of Iran had been requested Japanese cooperation in research and development of telecommunication technology.

In response to it, a preliminary survey team was sent in July, 1968, followed by an implementation survey team in December, 1969. On the basis of the results of the two teams, the Japanese Government signed an agreement in March, 1971, with the Iranian Government for establishment of the Center.

In order to assist in research and development of telecommunication technology in Iran and in accord with the agreement, Japan sent advisers, coordinators and wireless specialists in fiscal 1970. In October, 1971 specialists in microwaves, transmission, circuits, telegraph, telephones, and broadcast control were sent. One month later another specialist for guidance in trial production was added, making a total of 10 advisers now working in Iran.

Counterparts came to Japan in December, 1970 and returned in August, 1971 after completion of their studies.

## 7. Technical Training Centre for Small-Scale Industries in Kenya

### (1) Details of Establishment

This center was established as part of the Domestic Industries Promotion and Protection Policy of the Kenyan Government. In accord with an agreement concluded in July, 1964 between the Japanese and the Kenyan Governments, the Japanese Government has been sending advisers and equipment. After termination of an extended agreement in July, 1970, the Government of Kenya requested and received another extension for two years.

At the initial stage, 6 courses were offered at this Center: metal processing, electrical machine assembly and repair, sewing, woodcraft, machine assembly and repair, and leather processing. Later, 3 others courses

in management, casting, and motor car maintenance were added.

#### (2) Activities

Up to date, the Japanese Government has dispatched 28 experts and supplied a total of 80.58 million yen worth of equipment, while 313 trainees in 6 consecutive terms have completed their training.

Seventy-two new trainees have been registered for the current term, and they include: 10 for the machinery course, 12 for the automobile course, 8 for the metal working course, 6 for the casting course, 10 for the electricity course, 9 for woodcraft course, 8 for the leather processing course and 12 for tailoring course.

Since the administration of the Center scheduled to be handed over in following year, emphasis in fiscal 1971 year was laid on the training of counterparts and on preparing them to give lectures independently.

### 8. Technical Training Centre in Textiles in Ghana

#### (1) Details of Establishment

This Center is designed to contribute to propagation and development of textile techniques in Ghana by training technicians in the production of cotton fabrics and towels, in dyeing and in sewing. An agreement was signed in May, 1963, 53 million yen worth of installation equipments were supplied in fiscal year 1963, and 8 personnel were dispatched in 1965. Up to now, a total of 60 million yen worth of equipment has been supplied and 18 experts have been dispatched.

Training at the Center consists of an ordinary course for freshman technicians and an advanced course for experienced technicians, each on a one-year term, in which trainees learn to conduct physics and chemistry experiments relevant to textile fabrics, to produce cotton fabrics and towels, to dye, sew and the like.

#### (2) Activities

After 31 trainees of the 3rd term had newly graduated in August, 1971, the total number of graduated trainees reached 92. Presently, 23 trainees in the Ordinary Course and 24 in the Advanced Course are receiving their training from 7 Japanese personnel.

Moreover, since the Center is scheduled to be handed over in late May, 1972, 3 Ghanaian counterparts in charge of textile manufacture were invited to Japan for 6 months study beginning in June, 1971. By the end of fiscal 1971, counterparts at this Center numbered 12, of whom 6 have studied in Japan.

### 9. Vocational Training Centre in Uganda

#### (1) Details of Establishment

A request was made in 1965 by the Government of Uganda for establishment of this Center. In response, a preliminary survey team was dispatched in February, 1966. As a result, it was decided to help promoting medium and small-scale industries in Uganda by training skilled workers. Being the first attempt at setting

up an overseas training center, a total amount of 155 million yen was approved for the fiscal 1967 budget construction materials for the Center building.

In October, 1967, an implementation survey team was dispatched to examine, in a concrete way, establishment and administration of the Center, and in June, 1968, an agreement regarding establishment of the Center was concluded. Training is given in 6 courses: 1) mechanical processing, 2) metal plate processing, 3) welding and fusing, 4) mechanical finishing, 5) electrical finishing and wiring, 6) automobile repair.

Purchase and supplies of equipments were carried over to fiscal year 1969, and the equipment arrived in the period between February and June, 1970.

Cargo handling equipment like fork-lifters were supplied, and in January and March, 1971, 9 personnel including a managing director were sent. Trainings began on the 1st of October, 1971 and an opening ceremony was held on the 9th of October.

#### (2) Activities

##### 1) Dispatch of Personnel

In January and in March, 1971, 9 personnel were on their way to take up duties on a term lasting until June, 1972 when the agreement will expire. Their specialities are managing director, vocational training (training director) mechanical processing, metal plate processing, welding and fusing, machine finishing, electrical finishing (2) and automobile repair. The coordinator was sent in July, 1969 for a term lasting until June, 1972.

##### 2) Supply of Equipment

In fiscal year 1971, 3.3 million yen worth of equipments were supplied. Most of these consisted of additional parts such as parts for automobile repair for the previously supplied equipment.

##### 3) Training of Counterparts

The 3 counterparts (automobile maintenance, welding and electrical finishing) came to Japan in December, 1970, finished their studies in May, and are now working with the Japanese giving instruction to trainees.

##### 4) Instruction of Trainees

Training began in October, 1971 for a term of 3 months.

Trainees for the first term totaled 24 although there were facilities for 70 (10 for each of the courses in machine finishing, machine processing, metal plate processing, welding and fusing, electrical finishing, electric equipment, motor vehicle repair). The second term which began in January, 1971 consisted of instruction for 2 trainees in a metal plate processing course and 1 in a machine finishing course.

### 10. Technical Training Centre for Telecommunication in Mexico

#### (1) Details of Establishment

Preparing for the Mexico Olympic Games in 1968, the Mexican Government began large-scale improve-

ments of telecommunication facilities and requested Japan's cooperation in designs, construction, and administration of the telecommunication facilities. Prior to this, Japan had been sending advisers to Mexico since November, 1964. In response to the Mexican request, an implementation survey teams were sent in June, 1966, and in July, 1967, an agreement for establishment of the Center was concluded between the Japanese and Mexican Governments. According to the agreement, Japan supplied a total of 94.03 million yen worth of equipment until the end of fiscal 1970, and 18 technical advisers in fields such as telephone networks, transmission, micro-wave, wireless, and telegraph.

Training courses ranging from 3 to 6 months have been established in each department to prepare technicians in design, construction, operation and maintenance of communication facilities. In the 4 years since the Center was established in 1967, 712 trainees have completed their training here. Another highly appreciated course for trainees from other countries was opened in the spring of 1971.

#### (2) Activities

When the agreement for the Center neared its expiration in July, 1971, the Mexican Government requested its extension. In consideration of the importance of training telecommunication technicians and of the center's achievements, the agreement was extended until July, 1973. Four of the 6 personnel were replaced and 2 had their terms extended so that 6 members will continue the cooperation until termination of the agreement. The wireless department was improved and a data telecommunication course newly created in the telegraph department. Purchase and shipment of 42 million yen worth of data telecommunication equipment will be made by next fiscal year.

Newly created curriculum from February, 1972 consists of a micro-wave maintenance course (6 weeks), data telecommunication course (10 weeks), and a national private telephone network maintenance course (12 weeks).

### 11. Telecommunication Research Centre in Bangladesh

#### (1) Details of Establishment

This Center was established on the 16th of November, 1963, according to an agreement between the Japanese and Pakistani Governments. Since it started research activities in July, 1964 as the only integrated telecommunication research center in Bangladesh, it has been working on development of telecommunication in this country.

The Japanese Government has supplied 107,017 million yen worth of equipment since 1963, and a total of 15 technical advisers including personnel sent in accord with the Colombo Plan since June, 1969. Presently, 4 experts in telephone, micro-wave, transmission, telegraph and electric power are being sent for the

continuation of the cooperation.

#### (2) Activities

Activities of each department up to December, 1971 are as follows:

##### 1) Telephone Department

Researches on trial manufacturing of public telephones have led to decision on their practical use, and 500 sets at first will be manufactured by the T.I.P.

Two-party line telephone system is now under actual tests at Lyallpur and Karachi, both with satisfactory results.

Manufacture of an omnibus telephone system has been discussed in a Research Board Meeting, and manufacture of 20 sets (including 200 end devices) has been started.

As for the repeater accompanying the PCM device, the PCM set purchased on a trial basis by T & T from Japan will be used in Karachi. Tests are being performed to see whether the repeater performance is suitable for the F-1 system and EMD system used in Karachi.

##### 2) Transmission

In trial manufacture of transmission and channel interchanging devices, assembly and adjustment have been completed on one unit (end station), and tests are being conducted in the bare-wire transmission sector between Haripur and Rawalpindi.

Guidance for construction of the PCM unit consisted of guidances for measurements of losses, cross-talks and impedance in the application sector of the PCM-24 system (between PAK-CAPITAL exchange and airport exchange).

For local the transmission system in Karachi City, economical comparisons have been made on 0.65 mm loaded cable, two-way repeater loaded cable, and the application of the PCM on existing cables and on micro-wave system.

3) Parts for a unit of the VHF transmitter-receiver (50 Mhz band, 1 channel) were gathered for trial manufacturing. However, it is being postponed now.

4) Switching device of air traffic lights on the micro-wave tower have been made electronically operated.

5) Design and assembly of the 100WISB transmitter have been made with the purpose to increase the power to 500 W or 1 kW.

Trial production of transistor transmitter-receiver and measurement of actual antenna characteristics have all had satisfactory results.

### 12. King Mongkut College of Technology in Thailand

#### (1) Details of Establishment

According to an agreement for establishment of the Center concluded in August, 1960, the technical cooperation began under the name of Thailand Training Center for Telecommunication.

Later, following improvements in contents, the name

was changed to "Thonburi University of Telecommunication" in May, 1964. In July, 1970, it emerged as the Thonburi Technical Institute and North Bangkok Institute became the King Mongkut College of Technology. Moreover, the agreement for establishment of the Center having terminated in August, 1965, Japan is continuing its assistance under the Colombo Plan.

#### (2) Activities

The curriculum now consists of wireless, micro-wave, radio broadcasting, television broadcasting, telegraph, telephone, communication line, transmission etc. However, experts like chief advisers for telephone, radio broadcasting, telegraph and communication line have returned to Japan after termination of their term of duty. And in October, 1971, a chief adviser specialized in wire equipments has been dispatched.

For the improvement of contents, curriculum at the King Mongkut College of Technology has been re-organized: wireless and micro-wave have been unified into radio wave engineering; radio and television broadcasting formed the new broadcasting engineering department, telegraph and telephone turned into wire machinery, and finally, communication line and transmission are unified into transmission engineering.

As new courses, electronic computer engineering, control engineering and electronic circuit design are scheduled.

The number of students is 566 including 27 female students. Of the 34 five-year students who graduated, 2 went to study abroad and others were employed in Thai Government institutions or civilian enterprises.

Eligibility for entry to the King Mongkut College of Technology is limited to those who have passed the National Examinations. Courses are divided into an Ordinary Course and a College Course.

The Ordinary Course allows a student to graduate in 3 years from the 1st year to the 3rd while the College Course is from the 4th year to the 5th year.

With regard to supply of educational equipment, 71.30 million yen worth of educational equipment is scheduled to be donated in 1971.

Four counterparts have come to Japan and are now studying in universities.

### 13. Technical Training Centre for Industries in the Republic of Korea

#### (1) Details of Establishment

This Center was established on the 30th of October, 1968 with the purpose of exploiting technical manpower for the promotion of the Second 5-year Economic Development Plan in the Republic of Korea which was started in 1967. In the beginning, the curriculum consisted of 3 courses in machine processing (sheet metal, welding and forging), chemical analysis and casting, with a capacity of 30 trainees per academic year in each course, and the training period was two years while eligibility was for high school graduates.

Later, in 1971, two more courses in automobile maintenance and in electronic engineering were newly created and this helped the Korean Government to upgrade the Center from a vocational school to an industrial technical school.

Japanese cooperation for the Center consisted at first of sending a chief adviser, then 3 experts for each course in late August, 1968; also equipment worth 75 million yen in fiscal 1966, 45 million yen in fiscal 1968, and 23 million yen in fiscal 1970 budget have been supplied.

#### (2) Activities

Main activities in 1971 consisted of handing over the courses to the Korean authorities. The four persons including a chief adviser, have returned to Japan following termination of the cooperation agreement in October.

However, one long-term expert for each of the two new courses, namely automobile maintenance and electronic engineering were sent in February.

Supplementary equipment for the three existing courses were supplied, consisting mostly of 7.36 million yen worth of annealing furnaces, wood molds, and cutting tools. In late October, a specialist was dispatched for one month for installation of the annealing furnace. For the two new courses, 28 million yen worth of equipment, namely computers, and crank shaft grinders, etc., were supplied in fiscal 1971.

In early March, a two-member team was sent to the Center to inspect and examine future policy.

### 14. Technical Training Centre for Small-Scale Industries in Iran

#### (1) Details of Establishment

Japanese cooperation for Iran began with the signing of an agreement in December, 1958 for economic and technical cooperation.

In response to an Iranian request in May, 1960 for a Center in the areas of machinery and plastics, Japan sent a survey team in June of the same year, and decided to establish the Center in the outskirts of Teheran. The corresponding agreement was officially signed in September, 1960.

In accordance with this agreement, Japan supplied a total of 58.55 million yen worth of equipment, namely wood molds, casting machines, plastics, etc., sent experts, and invited Iranian counterparts to Japan for study. The opening ceremony was held in October, 1962.

Training subjects consist of machinery, finishing, assembly, sheet metal, welding, casting and wood mold for the Machinery Department, and molding and piping for the Plastics Department.

Agreed cooperation period for the Center was initially terminated in September, 1963, but was extended for two more years. Accordingly, the new cooperation period for the Center ended in September, 1965, and

Technical Cooperation Centers

(as of March 31, 1971)

Name of Center	Item	Contents of Training	Period of Agreement	Period of Extension	Number of Personnel	Purchased and Shipped Equipment		Date of Opening	Remarks
						Fiscal Year	Amount (¥1,000)		
<b>I Presently under Agreement</b>									
<b>I-I Asia</b>									
(1) Vocational Training Centre in the Republic of China		(1) canning (2) machinery (3) welding (4) electric appliances	Dec. 5, 1969 } Dec. 4, 1973		15	1969 1969 1971 total	96,762 30,000 36,032 162,794	Oct. 3, 1970	
(1)-1. Northern (Keelung) 6 personnel		(1) iron work (2) machinery (3) finishing (4) welding (5) electric appliances							
(1)-2. Southern (Kaohsiung) 8 personnel		(1) forging, small machine parts production (2) ceramics (3) wood works (4) bamboo and wisteria handicraft (5) processing of fabrics and woven cloth (6) management consulting	Sept. 29, 1966 } Sept. 28, 1970	Sept. 29, 1970 } Sept. 28, 1972	9	1966 1967 1969 1971 total	50,000 8,000 25,000 16,847 99,847	Oct. 7, 1967	
(2) Technical Development Centre for Domestic and Small-Scale Industry in the Philippines (Marikina)		(1) processing of machinery (2) tool and die manufacturing (3) designing of machinery metal (4) plating (5) welding (6) construction for shipbuilding (7) heat treatment (8) forging (9) die-casting	Oct. 15, 1966 } Oct. 14, 1970	Oct. 15, 1970 } Oct. 14, 1972	7	1966 1968 1969 1970 total	124,348 30,000 30,000 10,449 194,797	Training commenced: June 1, 1968 Formal opening: Feb. 14, 1969	
(3) Training Centre for Prototype Production in Singapore		(1) fishery (2) marine products (3) processing and storage of marine products	July 18, 1969 } July 17, 1972		3	1968 1969 1970 total	100,000 42,000 16,485 158,485	In Jan. and Mar. 1972 four experts were dispatched for two years cooperation. In July, 1972, advisory team consisted of 3 personnel was dispatched for continued co-operation.	
(4) Technical Cooperation Program for Fishing Industry in Indonesia		About 80 km of road construction between Surat Thani and Sichong and training of road construction engineers (Civil engineering and construction machinery)	May 19, 1971 } May 18, 1976		10	1971 1971 total	227,873 123,640 351,513		
<b>I-II Middle East and Africa</b>									
(1) Research Centre for Telecommunication in Iran (Teheran)		(1) micro-wave (2) wireless (3) transmission (4) telegraphy (5) telephone (6) telephone lines (7) regulation of broadcasting waves (8) work shop	Mar. 29, 1971 } Mar. 28, 1976		10	1969	119,238		
(2) Technical Training Centre for Small-Scale Industries in Kenya (Nakuru)		(1) metals of processing (2) assembly and repair of electric appliances (3) sewing machine	July 30, 1964 } July 29, 1968	July 26, 1968 } July 29, 1970	8	1964 1967	54,961 supplementary 1,345	July 1965	



Name of Center	Item	Contents of Training	Period of Agreement	Period of Extension	Number of Personnel	Purchased and Shipped Equipment		Date of Opening	Remarks
						Fiscal Year	Amount (\$'1,000)		
(3) Technical Training Centre for Textiles in Ghana	(4) wood works (5) processing of hide and leather (6) assembly and repair of machinery (7) welding (8) repair of cars (9) forging (10) management consulting	(1) physics of fabrics, chemical experimentation (2) cotton fabrics, towels (3) dyeing (4) processing of sewed goods	May 23, 1963	July 30, 1970	7	1968	supplementary 84	Feb. 27, 1967	
			May 22, 1967	July 29, 1972		1969	expanded 20,000		
				May 23, 1970		1971	supplementary 1,000		
						total	supplementary 2,769		
(4) Vocational Training Centre in Uganda	(1) processing of machinery (2) welding (3) plating (4) finishing by machinery (5) electric finishing (electric wiring) (6) motor vehicle repairing	June 28, 1968 June 27, 1972	May 23, 1967	10	1963	80,159	Training commenced: Oct. 1, 1971 Formal opening: Oct. 9, 1971		
			May 22, 1970		1966	51,863			
					1968	1,539			
					total	15,500 136,750 5,861 160,861			
I-III Central and South America (1) Technical Training Centre for Telecommunication in Mexico	(1) micro-wave (2) automatic switchboard for telegraphy (3) wireless communication (4) transmission (5) drafting telephone networks	July 25, 1967 July 24, 1971	July 25, 1971	6	1967	80,000	Dec. 5, 1967		
			July 24, 1973		1968	320			
					1969	1,210			
					total	2,500 10,000 94,030			
II Centres not operated under agreement (Those by CP, etc.) II-I Asia (1) Research Centre for Telecommunication in Pakistan (Haripur)	(1) micro-waves (2) telephone exchange (3) transmission (4) wireless	Nov. 16, 1963 Nov. 15, 1967	Nov. 16, 1967	4	1962	58,700	Jan. 1961	CP until Oct. 4, 1973	
			June 30, 1969		1967	35,000			
					1968	697			
					total	12,670 107,067			
(2) King Mongkut Institute of Technology (former Training Centre for Telecommunications in Thailand)	(1) wireless (2) transmission (3) telegraphic communications (4) telephone (5) telephone lines (6) television broadcasting (7) radio broadcasting (8) micro-waves	Aug. 24, 1960 Aug. 23, 1963	Aug. 24, 1963	7	1959-63	104,736	Jan. 1961	CP until June 23, 1972	
			Aug. 23, 1965		1967	2,826			
					1969	30,000			
					total	2,500 7,500 211,362			
(3) Institute of Technology, Yeungnam College (Korea)	(1) machining (2) chemical analysis (3) forging (4) electronics (5) repair of automobile	Oct. 25, 1967 Oct. 10, 1971	Oct. 25, 1967	2	1966	50,000	Oct. 10, 1968	CP until Jan. 31, 1975	
			1967		1,000				
					1968	45,000			
					1970	23,000			

Item	Name of Center	Contents of Training	Period of Agreement	Period of Extension	Number of Personnel	Purchased and Shipped Equipment		Date of Opening	Remarks
						Fiscal Year	Amount (\$41,000)		
II-II	Middle East and Africa								
(1)	Technical Training Centre for Small-Scale Industries in Iran	agricultural machinery	Sept. 12, 1960 Sept. 11, 1965		1	1959 1959 1963 1969 1971 total	52,000 5,911 700 19,758 4,852 83,201		CP until May 22, 1975
II-III	Central and South America								
(1)	Technical Training Centre for Fibre Industry in Brazil	(1) mixing and carding (2) glossing and coarse spinning (3) fine spinning and twisted yarn (4) preparation of cotton fabrics (5) cotton fabrics (6) examination and quality control (7) dyeing	Mar. 28, 1962 July 23, 1968	July 24, 1968 July 23, 1970	2	1960 1965 1968 1969 1970 total	80,000 2,545 80,000 290 5,000 167,835	July, 1965	Latin America Plan until Dec. 13, 1973
III	Agreements not yet concluded								
(1)	Technical Training Centre for Road Construction in Thailand (Surat Thani)	About 80 km of road construction between Surat Thani and Sichong and training of road construction engineers	5 years		(10)				
(2)	Technical Training Centre for Fishing Industry in Bangladesh	Training of official propagators for the retraining of coastal fishermen, through which development of marine food in the Bengal Bay may be realized (1) operation of small scale motor powered fishing boats (2) maintenance and handling of ocean going engines (3) modern fishing implements and techniques (4) handling of catch etc. (scheduled)							
	(Small-scale project for fiscal 1970) Cooperation program for the Expansion of the National Technical School of Industry in El Salvador.	(1) machinery (2) maintenance of motor vehicles (3) electricity (4) electronics							

the administration thereafter was handed over to the Iranian authorities.

#### (2) Activities

##### 1) Dispatch of Experts

Experts in agricultural machinery were sent in May, 1970. Their stay, which was initially planned to last one year, i.e. until May, 1971, was prolonged for one more year in order to facilitate handing over of the Center.

##### 2) Supply of Equipment

In accordance with the terms of discussion exchanged on the 30th of December, 1969 between the survey team and the Iranian Government, such equipment as tractors, combines, rice-planting machines, etc., have been supplied, with a budget of 5 million yen, to the newly created Agricultural Machinery Training Department of the Center.

3) 20 trainees in each term (6 months) are receiving instruction from the Agricultural Department.

#### 15. Technical Training Centre for Textile Industry in Brazil

##### (1) Details of Establishment

In order to contribute to industrial development in the less-developed north-eastern part of Brazil, an agreement was signed in March, 1962 with the purpose of training technicians such as foremen in north-eastern textile factories, in cotton processing, cotton spinning and textile manufacture. The training was to be conducted in Recife City, a core in the north-eastern region. In the same year, 80 million yen worth of equipment was supplied and, in 1964, 6 persons were sent. The Center was temporarily opened in July, 1965 and a training program started. In 1968, a course in the use of dyes was newly created, making it possible to give training in an integrated process it possible to give training in an integrated process of spinning, weaving and dyeing.

Up to the end of 1971, equipment supplies have totaled 170 million yen; persons sent have numbered 8; graduated trainees have amounted to 552 while an-

other 33 are presently receiving instruction.

##### (2) Activities

From May, 1971, the Brazilian managing director of the Center was invited to Japan for a 4 months study. Preparation for Brazilians to take over the Center went smoothly. The spinning department and the weaving department were handed over to the Brazilians on the 23th of December, 1971. With the return of one Japanese weaving expert, two others, i.e. a managing director and a coloration finishing expert, are now working in the personnel training program the coloration finishing department. The cooperation program in this department will end in early November, 1973.

#### 16. National Technical School for Industry in El Salvador

##### (1) Achievements

Japanese cooperation on this project began with the dispatching of technical advisers in October, 1960. The number of experts sent totaled 15, including 6 radio and television experts, 5 motor vehicle specialists (including machinery), 3 for machinery and 1 for electricity. Equipment supplies amounted to 36 million yen.

##### (2) Activities

Cooperation began as a small-scale project in 1970. 15,168 million yen in 1970, and 11,943 million yen in 1971 were spent on equipment supplies. They included 1,216 million yen for the motor vehicle department, 0.55 million yen for measuring instruments, 4,562 million yen for the electric department, 3,557 million yen for the electronics department, 2.02 million yen for the radio and television department, and 38 thousand yen for tools. These contributed greatly to the development of the El Salvador National Technical School for Industry.

Since 1961 seven trainees have studied in Japan. They include: 1 in electricity, 2 in machinery, 1 in motor vehicles, 1 in radio and television, and 1 in vocational education.

## CHAPTER 5

# DEVELOPMENT SURVEYS PROJECT

### Section 1. Outline of the Development Surveys Project

The Development Survey Project involves a project which organizes survey teams of specialists to carry out on-the-spot surveys or various kinds of work in Japan related to public development plans in developing countries, and to draw up reports helpful for the

promotion of development plans.

As economic development in developing countries requires promotion of integrated regional development projects or public-works development projects, this development survey project aims at giving assistance to planning and designing overall comprehensive programs and various specific individual projects. Japan has been carrying out these development surveys as

part of governmental technical cooperation.

The governmental development surveys in Japan began in 1957 with 15 million yen as commissionial expenditure for international technical surveys. This money came from the budget of the Ministry of Foreign Affairs, with implementation entrusted to the International Engineering Consultants Association which conducted surveys for development plans in construction, transportation, agriculture, etc., adopting a nation to nation method. In 1958, the following year, the survey of the Mekong River Development Plan, in the form of multilateral cooperation to ECAFE (Economic Commission for Asia and the Far East), was entrusted to the Mekong River Development Association which was to carry out field surveys and preliminary surveys on development plans of main tributaries as part of the Comprehensive Development of the Mekong River Basin.

In 1962, with the establishment of the Overseas Technical Cooperation Agency (OTCA), the above-mentioned two survey projects were taken over by the OTCA. Thus, full-scale development survey projects were started with 129.55 million yen as a pre-investment basic survey commission fee (including the commission fee for the Mekong River Development Survey) from a budget of the Ministry of Foreign Affairs, as well as with 45.2 million yen as commission fee for overseas development plan surveys from a budget of the Ministry of International Trade and Industry (MITI). In 1966, surveys for the Asian Highway Construction Plan, with which Japan had been cooperating since 1962, were conducted with a commissioned expenditure for survey of the Asian Highway Construction Plan in the budget of the Ministry of Foreign Affairs. In the same year, surveys on the Trans-Sumatra Highway Construction Project were conducted with a budget allocations from the Ministry of Construction. Since 1968, a budget for implementation design of economic development plans had been appropriated in the budget of the Ministry of Foreign Affairs, and thus, cooperation also started for implementation designs. In addition, a budget for surveys of the Malacca Straits, and another for basic survey of resource exploitation cooperation, which was part of the Overseas Development Plans Survey Project, were appropriated in 1970. Thus, in the ten years up to 1971, development surveys have increased year after year with its budget jumping from 174.75 million yen in 1962 to 1.09343 billion yen in 1971. Along with the increase in the budget, scale and quality of surveys have been expanded and improved while technical areas covered have greatly diversified.

Fields covered by development surveys, which can be roughly classified into integrated regional development, productivity increase and preparation of infrastructures, include agriculture, forestry, fishery, mining, industry, roads, railways, port, harbors, airports,

communications, land projects, urban transportation, water supply, land protection, hydro-and-thermal power generation.

Although stages or content of surveys differ according to the nature and content of each project, they consist generally of the three following categories: 1) field survey, preliminary survey or basic survey which aims at preparing basic plans and indicating a direction for the project concerned, or at providing data for decision on whether a subsequent feasibility survey is necessary. 2) Feasibility survey which aims at producing conclusions or recommendations on technical and economical feasibility and appropriateness of the project by drawing up plans for the facilities and management of the project concerned. 3) Implementation design carried out since 1968.

The number of survey teams dispatched since establishment of OTCA up to date (the 31st of March, 1972) have reached 230, namely 25 to Indonesia, 21 to Khmer, 20 to Thailand, 18 to Pakistan and 12 to Malaysia, these accounted for the most frequent of all. Meanwhile, members having participated in the survey teams have totaled 2,031, 280 to Khmer, 190 to Indonesia, 163 to Thailand, 145 to Pakistan, 123 to Malaysia and so on.

As for areas where the teams have been dispatched, the Asian areas accounted for an overwhelming number of 156 teams (67.8%) and 1,494 personnel (73.8%), and this trend continued into fiscal year 1971. An industrial classification shows that transportation (50), power resource exploitation (34), industries (28), communications (21), mining (22), urban affairs (20) and agriculture (16) etc. occupy the greater ratios.

## Section 2. Achievements in Fiscal 1971

In fiscal year 1971, 14 running projects and 29 new ones amounting to a total of 847,439 million yen, have been carried out. These expenditures included:

1) 428,109 million yen (2,334 million yen carried over from fiscal 1970, 526,558 million yen newly approved in fiscal 1971, of which 100,783 million yen was carried over to fiscal year 1972) as pre-investment basic survey expenditures for 6 running projects and 17 new ones.

2) 127,007 million yen (14,741 million yen carried over from 1970, 124,925 million yen approved in 1971, of which 12,659 million yen was carried over to 1972) as usual overseas development plans survey expenditures for 6 running projects and 8 new projects. Besides, 180 million yen (11,198 million yen carried over from fiscal year 1970, 336,305 million yen approved in 1971, of which 167,301 million yen was carried over to 1972) as basic survey expenditures on resource exploitation cooperation,

which had been commissioned since 1970, were used to implement 3 new projects. This makes a total of 6 running projects and 11 new projects implemented with expenditures for overseas development plans surveys.

3) 112,121 million yen (40,070 million yen carried over from fiscal 1970, 128,636 million yen approved in 1971, of which 56,585 million yen was carried over to 1972) as implementation designing expenditures for economic development plans were used to implement 2 running projects and 1 new project.

Since 1971, the surveying method consisting of long-term field stay has been adopted, and at the same time, equipment supplies have begun.

Overall characteristics, by industrial classification, of the Development Survey Project showed, in the category of base preparation, a greater number of surveys in the transportation fields; especially those for airports and harbors, while the mining industry accounted for most of the surveys on productivity. In classification by country, Indonesia came at the top with 8 projects out of 29 carried out in fiscal year 1971, offering a particular case among the 17 recipient countries. This was a clear result of connections with economical cooperation (such as Yen-based loans, etc.), due to the nature of development surveys. On the budgetary plan, increases have continued year after year, and the overall development survey budget has reached two times that of the last fiscal year while budget allocations for each project have increased considerably. This shows efforts in centralizing expenditures, and can be regarded as meaning that effective surveys are being carried out with success.

Surveys conducted in fiscal 1971 are as follows:

#### <PRE-INVESTMENT BASIC SURVEYS>

##### 1. Projects Carried Over from Fiscal 1970

- 1) Water Supply Project in Vietnam
- 2) Extension Project of Water Supply in Local Areas in Thailand
- 3) Water Supply Leakage Control in Islamabad, Pakistan
- 4) Harbor Construction at Phitti Creek, Pakistan
- 5) Microwave Network Construction Project in Central Ethiopia
- 6) Dar Es Salaam—Mtwara Road Construction Project in Tanzania

##### 2. New Projects

- 1) Manila Expressway Construction Project
- 2) Phan Rang Agricultural Development Project in Vietnam
- 3) Saigon Water Supply Project in Vietnam
- 4) Phnom Penh Broadcasting Network Expansion Project in the Khmer Republic

- 5) Songkla Port Project in Thailand
- 6) Railway Construction Project in Thailand
- 7) Brantas River Water Resource Development Project in Indonesia
- 8) Survey Report on Inter-Island Vessels in Indonesia
- 9) Barito River Basin Development Project in Indonesia
- 10) Surabaya River Rehabilitation Project in Indonesia
- 11) Economic Development Program in Indonesia
- 12) Hydrography Project of Malacca and Singapore Straits
- 13) Fisheries Development Project in Papua and New Guinea, Commonwealth of Australia
- 14) Economic Development Project in Saudi Arabia
- 15) Bridging Project over Rufuji River, Tanzania
- 16) Transportation Capacity Expansion Project in Zaire
- 17) Telecommunications Facilities Construction Project in Peru

#### <PRELIMINARY SURVEY>

- 1) Tourism Development Project in Cheju Island in the Republic of Korea
- 2) Agricultural Development Project in the Republic in Korea
- 3) Thailand Meat Processing Industry Project
- 4) Study on Lampung-state Development Project in Indonesia
- 5) Hydrography Project of Malacca and Singapore Straits
- 6) Transport Capacity Increase Project in Zaire
- 7) Cross-linking Highway Construction Project of Malta Islands
- 8) Central Africa Highway Construction Project in Zaire
- 9) Ports and Harbors Construction Project in Mexico and Costa Rica

#### <AFTER-CARE SURVEYS>

- 1) Fishing Development Project in Indonesia
- 2) Central Africa Highway Construction Project in Zaire

#### <SURVEYS FOR OVERSEAS DEVELOPMENT PROJECTS>

##### 1. Projects Carried Over from Fiscal 1970

- 1) Mass Industrial Water Consuming Industry in the Philippines
- 2) Textile Industry Development Project in Indonesia
- 3) Mining and Manufacturing Industry Development in Indonesia
- 4) Development of Mineral Resources, Pakistan

- 5) Industrial Development in Africa
- 6) Lima-Chimbota Transmission Line Project in Peru

## 2. New Projects

- 1) Long-Range Electric Power Development Program in East Java in Indonesia
- 2) Nickel Industry Development Project in Indonesia
- 3) Mineral Resources Development Project in Burma
- 4) Industrial Development Project in Afghanistan
- 5) Electric Power Industry Development Project in Iran
- 6) Timber Utilization Industry Development Project in the Republic of Ivory Coast
- 7) Steel Industry Development Project in Peru
- 8) Fulmeat Hydro-Electric Power Generation Project in Colombia
- 9) Resources Development Cooperation Project of Eastern Part of Mindanao in the Philippines
- 10) Resources Development Project of Sulawesi Island in Indonesia
- 11) Resources Development Cooperation Project of Yauri District in Peru

### <DETAILED DESIGN FOR ECONOMIC DEVELOPMENT PROJECT>

#### 1. Projects Carried Over from Fiscal 1970

- 1) Second Phase Vietnam Airport Expansion Project, Laos
- 2) Jurong's Japanese Garden Construction Project in Singapore, Construction Schedule and Supervision

#### 2. New Project

- 1) Microwave Network and Satellite Communications Ground Station Construction Project

### <PRE-INVESTMENT BASIC SURVEYS>

#### Running Projects

- 1) Survey on Provision Plan of Water Supply Facilities in Vietnam
- 2) Survey on Extension Project of Water Supply Facilities in Local Cities of Thailand
- 3) Survey on Prevention of Leakage in Water Supply of Islamabad, Pakistan

### <PRE-INVESTMENT BASIC SURVEYS>

#### 1. Survey on the Manila Urban Transportation Project in the Philippines

##### (1) Outline of Survey

This survey was carried out from the 13th of July, 1971, by a 12-member survey team headed by Professor Takashi Inoue of Tokyo University. The field survey started with conducting a Person-Trip investigation on specified days and on 35 thousand inhabitants of Manila. Based upon the results of the investigation,

a pattern of population flow in Manila was drawn up. Other surveys dealt with present land utilization, trends of urban growth, commercial and industrial conditions, etc.

Works conducted in Japan are as follows:

- a) Examination of land utilization
- b) Counter-measures for traffic conditions
- c) Traffic analysis
- d) Forecast of traffic demands
- e) Planning of traffic facilities projects
- f) General designs of highways and main roads
- g) Urban railway project

#### (2) Conclusion and Recommendation

The report is now being drafted.

Four team members constituting a Supervision Committee worked 11 days from the 7th of October, 1971, while 12 members of a survey team worked for 50 days from September, to conduct field surveys on the following projects as well as drafting a general master plan and a feasibility survey. Phase Project Area (Southern Area).

- 1) Survey on the entire area
  - a) Gathering of humidity and meteorological data
  - b) Survey of plans for irrigation, drainage and transportation facilities
  - c) Field surveys on the nature of earth and soil
  - d) Surveys on agriculture, agricultural economy and farm product markets
  - e) Survey for the site of a sugar factory

#### 2) Feasibility Survey for the Third Stage Project Area

The following items are added to the above-mentioned ones:

- a) Survey on nature of earth and soil
- b) Plane survey and topographical survey (building site)
- c) Survey on construction materials

After drafting the report, its on-the-spot briefing will be done by a 4-member team for a period of 10 days from the 16th of March.

#### (2) Conclusion and Recommendation

Essential points in the conclusion and the recommendation resulting from the survey are as follows:

1) Agricultural development in the projected area will be implemented by area of each phase project. The first phase area has 12,800 ha, the second phase project area 4,700 ha and the third phase project area 6,800 ha. With the exception of a trunk water way in the first phase project area, there will be no irrigation facilities.

2) Available water source consists of 32 m<sup>3</sup>/sec. output from the Da Nhim Dam and natural flow of Phan Rang River and Song Lu River (6 m<sup>3</sup>/sec. and 1 m<sup>3</sup>/sec. respectively).

3) Productions in the target year are expected to be approximately 102 tons for aquatic rice and 876 tons for sugar canes, the former being planted mostly

in the first phase area, and the latter in the second and third phase area.

4) Assuming that the daily processing capacity of the sugar factory will be 2,000 tons at the first phase and up to 4,000 tons at the second, an estimated annual production of 100 thousand tons of sugar can be expected at the target year.

5) Total net profit anticipated at the stage of full implementation of the project would be US\$15,071 million (US\$9,217 million in agricultural production and US\$5,854 million from the sugar factory) while total investment amount is expected to be US\$50,705 million (US\$30,521 in agriculture and US\$20,184 in the sugar factory).

6) In the 3rd phase project area, target harvest amounts are expected to be 16 thousand tons of rice and approximately 350 thousand tons of sugar canes. Gross income, production cost and net profits at full implementation of the project are anticipated to be respectively US\$4,646 million, US\$1,835 million and US\$2,811 million.

In addition, taking into account the overall construction cost (US\$12,801 million) and the construction charge for common facilities in this project (US\$1,654 million), the total will reach US\$14,456 million.

### **3. Water Supply Survey in the Capital Area in Saigon, Vietnam**

#### **(1) Outline of Survey**

Electrical detector for underground water has been used in Hoc Mon area (area with reserve of underground water) north of Saigon City to survey reserve characteristics of underground water which will be made basic data for test boring scheduled in the next fiscal year. At the same time, present conditions of water supply in the Capital area are surveyed and its results are to be made data for the above-mentioned (1)-(2) and (2).

A report is now being drafted.

### **4. Survey for Enlargement Project of Broadcasting Facilities in Phnom Penh, Khmer Republic**

#### **(1) Outline of Survey**

A survey team was dispatched in September, 1971 and carried out survey on the following items:

1) Improvement project for studios and related buildings.

2) Planning of expansion project for broadcasting networks, and calculation of costs and working processes for its implementation.

3) Selection of application frequency for newly installed transmitters.

A briefing of the report drafted after on-the-spot surveys and careful data analysis conducted in Japan is scheduled to be given to the Khmer Government.

(2) Conclusion and Recommendation

The radio and television broadcasting facilities will each require the following consolidation, and a period of about 1 year and 10 months will be needed for completion of the expansion project.

Moreover, employment of project advisers experienced in construction management and personnel training will be desirable for better promotion of the project. Especially in the case of such special buildings as studios and transmitting stations, it will be better to entrust designs and work management to experienced consultants while actual construction works will be carried out by native construction dealers. Achievement of this expansion project will require a construction cost of approximately 1,150 billion yen.

#### **1) Expansion of Radio Broadcasting Facilities**

Considering the actual nation-wide propagation of radio receivers, radio broadcast plays a very important role in development of social activities in such fields as politics, economy, civilization, education, etc. It is therefore necessary to actively promote improvement of broadcasting programs as well as expansion of the area serviced.

- a) Improvement of existing studio facilities
- b) Installation of 6 new small studios
- c) Installation of medium-wave high-power transmitter
- d) Renewal of short wave transmitter
- e) Creation of new wireless circuit for program transmission
- f) Provision of radio car and news broadcasting cars

#### **2) Expansion of Television Broadcasting Facilities**

Compared to radio broadcasting, present broadcasting time of television is very short, and propagation of TV sets considerably low. Thus, television in this country still plays a minor role as a means of data transmission to citizens.

Therefore, to increase broadcasting time and improve program's contents as well as to enrich functions of television broadcasting, improvement on the following facilities will be required:

- a) Installation of a new small-scale studio
- b) Installation of a new VTR
- c) Installation of a new Tele-Cine System
- d) Installation of a principal adjustment equipment
- e) Installation of a stand-by transmitter

### **5. Survey on Songkhla Port Construction Project in Thailand**

#### **(1) Outline of Survey**

Natural conditions, economic conditions and data for the construction have been surveyed on the spot for one month since mid-August, 1971.

Survey on natural conditions centered on gathering existing data on climatic and oceanic conditions. An economic survey was conducted on achievements and forecast of economic conditions in Thailand, and in

areas around the Songkhla Port, as well as on actual conditions of transportation costs, goods flow etc.

In preparation for the construction, a survey was conducted on actual conditions and future prospects of materials, labor, working machines, etc.

Data gathered in Thailand was rearranged and analysed in Japan. From this analysis, a draft report was drawn up estimating the amount of goods to be handled, selection of suitable harbor sites (comparative examination of plans for lake entry, inner port and outer port), harbor facilities projects, calculation of approximate construction cost, economical evaluation, and financial plans etc.

Moreover, simultaneously with these general surveys, topographical surveys, depth sounding and geological surveys around Songkhla Port were carried out in a 3 months period from mid-August. The results were put to order in Japan and soil tests were conducted.

#### (2) Conclusion and Recommendation

Goods to be handled at Songkhla Port are believed to be primary products consisting mostly of natural rubber, the amount of which is expected to grow considerably following consolidation of the Songkhla Port. Besides, potential goods flowing through other transportation routes are expected to converge to Songkhla Port after completion of harbor facilities.

Construction for consolidation of the Songkhla Port will be carried out by phases according to growth of quantity of goods. After comparing the three plans for the lake entry, inner port and outer port, the plan for the inner port is recommended for its low cost. According to this plan, projected good quantity in 1990 is estimated at 1.85 million tons, and related facilities including five 8.0 m berths, four 5.5 m berths, one 500 m breakwater, one 1.770 m flow-adjusting dike etc., will be built by 1990.

### 6. Survey on Railway Construction Project in Thailand

#### (1) Outline of Survey

In November, 1971, a 8-member team was dispatched to Thailand for one month survey. Surveys conducted in Thailand covered basic survey of transportation demands, survey on various transportation institutions, survey on existing railway lines, field survey of lines scheduled for construction, and basic construction data etc. In Japan, estimation of transportation demands, establishment of schedule of transport, draft of construction schedule and of standards for various facilities, examination on economy and convenience, and comparison of two routes etc., were carried out.

#### (2) Conclusion and Recommendation

Following the surveys, outline of the two routes is as shown in the following table:

- 1) Route (1)
- 2) Route (2)
- 3) Track length

4) Roadbed

5) Bridge

6) Tunnel

7) Stations

8) Block system: Tokenless system

9) Construction cost: 1,181 million Baht  
1,475 million Baht

10) Construction period: 7 years (depending on the period for tunnel construction)

Moreover, after an economic evaluation on the two routes, Route (2) proved to be more economical and more advantageous than Route (1), and can be expected to bring about national and public benefits in the forms of regional development and social welfare etc. However, the recommendation called attention to the fact that the construction project for this new line can be realized only by implementing with an integrated regional, economical and social development plan.

### 7. Survey on Brantas River Resources Exploitation Project in Indonesia

#### (1) Outline of Survey

The survey started from the 24th of August, 1971 with 2 members of a Supervision Committee working for 30 days, and 6 members of a survey team working for a maximum of 90 days to conduct the following surveys on the spot:

- 1) Climatic and hydraulic conditions
- 2) Flood control and erosion control
- 3) Conditions of hydraulic utilities
- 4) Condition of the basin

In addition, the following items have been analyzed in Japan and a report has been drawn up:

- 1) Analysis on the present condition of high and low water flows
- 2) Basic direction in distribution plan of high flux
- 3) Remarks concerning the planning of flood control project

#### (2) Conclusion and Recommendation

The essential points and recommendations based upon this survey are as follows:

- 1) Distribution of high flux, flux analysis and erosion control

Basic policies in the distribution plan of high flux of the main stream are as follows:

- a) Projected flood flux should be subjected to probable flood flux in 50 years allowing for adjustment by the Khlankates Reservoir.
- b) The present free water area is planned to be used as it is.
- c) Considering the importance of Surabaya area downstream, discharges from the two gates of Gedek and Mlirip will not take place.

Based upon the above policies, distribution of projected high flux between mid-stream sections of the main current are recommended as follows:



- a) 1,200 to 900 m<sup>3</sup>/sec. between junction with the Ngrowo River and Kediri.
- b) 900 m<sup>3</sup>/sec. between Kediri—junction with Konto River.
- c) 1,100 m<sup>3</sup>/sec. between junction with Konto River—junction with Widas River.
- d) 1,500 m<sup>3</sup>/sec. between junction with Widas River—Terusan.

As for flux adjusting effects by the two reservoir of Khlinkates and Karikonto, average flux increases at dry season are calculated to be 13.5 m<sup>3</sup>/sec. and 1.7 m<sup>3</sup>/sec. respectively.

Influx to the main current of earth from volcanic eruptions have been  $128 \times 10^6 \text{m}^3$  in 20 years since 1951, and earth washing capacity down from the mid-stream is estimated at average 5 to  $5.5 \times 10^6 \text{m}^3$ . Riverbed fluctuation within 10 years from 1971 is assumed to continue a leveling condition.

- 2) Overall project for mid-stream river conservation works

Outline of the conservation project for this section is proved to require a total construction cost of approximately US\$26 million and a construction period of more than 10 years. Therefore, it is recommended that the first phase works would consist of repairs and improvements with regard to probable high flux in 10 years hereafter. Construction cost for this phase is anticipated to be approximately US\$17 million, requiring a period of 5 to 6 years.

- 3) Recommendations for flood control

- a) Survey and planning for erosion control around the Volcano Klud will be necessary.
- b) Planning of riparian works, especially phased working projects according to the degree of emergency, will be required for the mid-stream and further downward.
- c) With regard to riparian works on the main current, preliminary surveys for the main affluents will be necessary.

- 4) Recommendations for water-utilization

a) Topographically, only the upper stream from Uringi Dam is suitable for hydroelectric power generation, and water storage large enough to be useful in flood regulations cannot be expected. Although a power generation plan will not cause large changes in downstream flux. It will be necessary to draft a project taking into account the re-adjustment of river flux so that fluctuations in periodic discharges will not cause difficulties in water-utilization projects downstream.

b) Regarding irrigation, surveys will be required of an effective distribution of the best water resources as well as of improvement of facilities. Also, it will be necessary to coordinate downstream service and industrial water supply.

## 8. Survey on Domestic Shipping, Indonesia

### (1) Outline of Survey

Through cooperation between Japanese shipping experts and Indonesian experts trained by Dutch technical cooperation expenditures, the following surveys mostly in the fields of ship-hull, machinery and electricity, and which took place in Jakarta Port, Surabaya Port, Berawan Port and Macassar Port.

Namely, the following surveys have been conducted on 150 to 200 domestic liners (totaling 500 to 3,000 tons).

- 1) To decide whether a ship is not worth repairs or should be classified for "scrap and build."
- 2) Ranking of extent of repair, in case this is judged possible (including division of destinations to domestic docks, to Singapore or to Hong Kong).
- 3) Repair equipment, machine parts, their amount and costs.
- 4) Those that Japan can provide out of the above-mentioned articles, and time required for repairs and supplies.

Besides the above-mentioned items, preliminary surveys as follows have been conducted regarding general shipping administration:

- 1) Position of various ports and harbors in domestic shipping.
- 2) Relation between domestic and overseas shipping.
- 3) Relation between domestic shipping and overland transportation system.

### (2) Conclusion and Recommendation

Out of the 101 ships to be built at the beginning were subject to surveys, a total of 92 (51 ships by the Japanese team and 41 by the Indonesian team) have each received detailed checks and were subsequently divided into five classes according to extent of necessity for repairs. Following this, repairing cost for each ship was estimated (approximately 868,311 million yen of repairing expenses for the 49 ships checked by the Japanese team only), and necessary expenditures for the repairs were reported to the Indonesian and Japanese Governments. At the same time, concrete plans were recommended in details. The necessity of equipment and technology of shipbuilding yard as well as establishment of a supply center for spare parts was also stressed.

## 9. Aerial Photographical Survey for Drawing up of Topographical Map of Barito River Basin, Indonesia

### (1) Outline of Survey

An aerial photographical survey team was dispatched in October, 1971 and returned to Japan after having gathered relevant data.

Thereafter, actual photographic works were delayed and have been subsequently carried out from May, 1972, through the dry season with a budget carried over from 1971. Actual works are performed by the Inter-

national Engineering Consultants Association in accordance with a contract with the OTCA. Up to mid-July, 75 per cent of 16,800 Km<sup>2</sup> of objective area has been photographed (63% have been handed over), the contract with PENAS has been extended to early December, 1971, and the remaining areas (mostly mountainous areas) are now being shot.

#### 10. Survey for Riparian Project of Surabaya River in Indonesia

##### (1) Outline of Survey

This survey was carried out by a team of 9 members in 90 days from the 12th of December, 1971 to the 19th of March, 1972. Data gatherings and field surveys were conducted for the following items:

- 1) Indonesian Government officials and their views on land exploitation as well as local people's opinion.
- 2) Survey of natural conditions:
  - Climate (temperature, humidity, evaporation rainfall).
  - Hydraulic conditions (water level, flux, tide, salt content).
  - Earth and sand (earth flow, river-bed substance, geographic features, soil).
  - River facilities (dikes, water gates, drainage pumps).
  - Urban area drainage (topographic division, overflows, sewers).
- 3) Survey on water demands
  - Irrigation water
  - City water
  - Industrial water
- 4) Survey on social and economical conditions
  - Population, laws, industries
  - Condition of land utilization
  - Conditions of flood damages
  - Work implementation capacity
  - Calculation data for work costs and compensation cost

##### (2) Conclusion and Recommendation

The draft copy of the report being drawn up is scheduled to be brought to Indonesia in November of this year for an interim presentation to the Indonesian Government. At that time, its content will be discussed. Thereafter, a final report is planned to be drawn up by January, 1973.

#### 11. Basic Survey on Economical Development in Indonesia

##### (1) Outline of Survey

Preliminary surveys were conducted in the 1971 fiscal year for an comprehensive understanding of the actual economic conditions covering the entire Indonesian economy. The main themes center on the following 3 items:

- 1) Economic forecast by means of macro-models.
- 2) Examination of the possible exportation of manu-

factured industrial products.

3) A study of the Japanese market as a potential export market.

Field surveys were conducted in the areas of:

- a) The export costs of industrial products.
- b) Policies to promote the export of manufactured industrial products.
- c) The relation of the manufacturing industry to other industries; especially a survey on the possibility of an agricultural-based manufacturing industry.
- d) The marketing and shipping of main export items to the United States, Europe, Japan.
- e) The international price ratio of articles exported to Japan.

Based upon the results of these surveys, an interim report has been drawn up in light of the following items:

- a) A statistical arrangement of Indonesian national income.
- b) An examination of the present Indonesian 5 year economic plan.
- c) Preparation of economic projections using macro-models published in 1966.
- d) The construction of a macro-model for further understanding the basic economic structure of Indonesia.
- e) A data analysis of Indonesian industrial exports.
- f) A survey on past trends in Japanese imports from Indonesia.
- g) An examination on Japanese trade policy toward Indonesia.
- h) An analysis of prospective Japanese demands for Indonesian imports.

##### (2) Conclusion and Recommendation

As the main survey will be forthcoming in fiscal 1972, it is difficult to reach a comprehensive conclusion. The final results are available only from joint works and studies with working groups from various countries (Harvard group, German group etc.).

#### 12. Hydrographical Survey in Malacca Straits

##### (1) Outline of Survey

This is a hydrographical survey to be conducted in an area close to Ukchil lighthouse, with cooperation of the Indonesian Navy and the Malaysian Navy. The survey will cover depth sounding, a tidalogical survey, a tidal current survey and a survey of ocean floor substances.

##### 1) Selection of Site

In order to determine measured depth in the survey, selection of a suitable site for the Decca hifix station to be installed on land will be carried out, and its findings will be arranged on the Decca chart.

##### 2) Regular Survey

##### a) Depth Survey

In principle, depth surveys are performed every

50 m. In the case of a suspected shallow spot, there will be a sounding taken place.

b) **Tidological Survey**

Tidal indicators set at 5 points will perform tide measurements required for corrections in the depth survey.

c) **Tidal Current Survey**

Current indicators will be set in one place for this survey.

d) **Ocean Floor Substance Survey**

This will be performed over the entire survey area.

e) **Consulting discussion between related countries**

Consultations and discussions on necessary items and equipment to be used in the survey will be held.

Site selection and part of the regular survey were carried out in 1971. The remainder of the regular survey, analysis of data and draft of the report will be executed in 1972.

**13. Survey on Fishery Exploitation Project in Papua and New Guinea (Australia)**

(1) **Outline of Survey**

This consisted of research on fishing conditions in the Bismarek Sea, fish processing facilities, labor conditions, financing and other related matters.

(2) **Conclusion and Recommendation**

**Conclusion**

1) According to findings of the field surveys, Sekk Bay in the Madang area will be suitable, due to its location and fishery conditions, for establishment of a processing compound.

2) Plans for this processing compound will consist of 2 cannery lines (daily production: 1,700 cases) with relating facilities such as refrigerators (500 t) and mills (daily production 10 t). 216 workers are required.

3) Management will be entrusted to civilian enterprises. The project will start with one cannery line and the working ratio will be increased by adding another line.

4) In order to bring about smooth management, research into bonito fishing and bait fishery must be started.

5) As for the balance of the project, profits are expected in 5 years, and completion of compensation for losses brought forward is anticipated in 8 years.

6) IRR with 10 years after the start of operation is calculated to be 15.6 per cent.

**14. Survey on National Development Project in Saudi Arabia**

(1) **Outline of Survey**

A preliminary survey in October, 1971 and a regular survey in March, 1972 studied the contents of the 5 year development project in Saudi Arabia, the social and economic conditions, the concreteness of project implementation in the fields of administration, medi-

cine, labor, regional development and transportation, the involvement of foreign institutions; the technical cooperation such as acceptance of trainees, the dispatches of experts and development surveys; the feasibility of consulting business by technical service enterprises in public departments; the feasibility of mining where Japanese enterprises can participate in through joint investment; and the feasibility of loan grants and of gratuitous cooperation.

(2) **Conclusion and Recommendation**

Although national development in this country is far from being an easy enterprise, it has abundant funds from petroleum incomes and will need technical cooperation only. As a managing capacity is also required for industrial development, joint investments will be desirable. Various development projects are being energetically pushed forward while experts are being sent in from foreign companies. Therefore, work must be first started on items in which the Saudi Arabian companies have voiced interest. The final plan should then be drawn up from meetings of a joint commission.

**15. Survey on Bridge Construction Project over Lefiji River in Tanzania**

(1) **Outline of Survey**

In fiscal year 1970, the route of the Southern coast road and position of the bridge over the Lefiji River was determined, and flood level of the Lefiji River was estimated. A new survey was carried out by a team of 11 members during a period of 65 days from the 5th of November, 1971 to the 8th of January. The survey studied basic bridge foundations means of boring, compled mountains for rocks to be used as material for roadbeds and cement. Works conducted in Japan consisted of the analysis of soil samples, designs for the road (approximately 7 km), the construction of a bridge (approximately 5 km) and the total length (12 km), and rough calculation of the construction cost.

(2) **Conclusion and Recommendation**

1) **Basic foundation**

In all, test borings performed in 7 places and conditions of foundation were found to be worse than expected. For works on the lower part of the bridge, it is necessary for a further lengthening of pile depth or an increase of piles.

2) **Bridge**

A side walk 1.5 m wide is planned for one side of the main bridge.

**16. Survey on Transportation Expansion Project in Zaire**

(1) **Outline of Survey**

1) **Preliminary Survey**

A 6-member preliminary survey team was dispatched in June, 1971 to Zaire. There, they carried out a

preliminary survey for implementation of the feasibility survey, which consisted of investigations on the basic policy of the survey, the acceptance and cooperation on the part of the Government of Zaire, the scale of the regular survey team, and the arrangement for an application schedule.

## 2) Regular Survey

From late November, 1971 to early January, 1972, a survey team of 14 members was dispatched to Zaire.

The survey team made arrangements with the related institutions of the Government of Zaire, and investigated and gathered data on the following items:

- a) Field surveys and information gatherings.
- b) Geological data, data on the nature of soil, and data for the estimation of construction costs.
- c) Construction schedule.
- d) Survey on unit price of work materials and means of transport.
- e) Survey for operation schedule.
- f) Survey for selection of routes.
- g) Survey on transport demands.
- h) Survey on places and means to cross rivers.
- i) Survey on related harbor facilities.

Based upon findings of the above field surveys as well as gathered data, the following works were conducted in Japan and a report has been drawn up.

- a) Route selection.
- b) Calculation of quantity of work.
- c) Estimation of construction costs.
- d) Broad design of bridges.
- e) Planning of work schedule.
- f) Estimation of transport demands.
- g) Planning of transport schedule.
- h) Examination of economy and convenience.

## (2) Conclusion and Recommendation

Conclusions and recommendations based on the surveys are as follows:

1) This project is a vital condition for economic development in Zaire by easing the circulation of goods to foreign countries.

2) The area around Banana being blessed with energy resources and supply of crude materials from abroad, and with abundant labor, is believed to have an advantageous location for industrialization, provided that overland transport is secured.

3) This project can be roughly classified into 3 de-bridge over Zaire River and construction works in Banana Port. It is recommended that work for these 3 departments be performed integrally for a better

effect and for a balanced working schedule.

4) Construction costs are estimated at US\$140 million, including US\$8 million for railway construction, approximately US\$3 million for construction of the bridge across Zaire River, and approximately US\$3 million for the first phase work destined to give necessary capacity to Banana Port in 1980.

## 17. Survey on Telecommunication Facilities Project in Peru

### (1) Outline of Survey

The survey has been based on the Five Year Plan for Economic and Social Development as well as on the National Telecommunication Project in Peru.

A survey on the Northern telecommunication networks has been conducted on 143 cities within the reach of the toll centers of Huacho, Huaraz, Caraz, Chimbote, Trujillo, Pacsamayo, Chiclayo, Piura and Tumbes. The survey estimated the number of telephone calls and amount of traffic, selected the necessary communication equipment, determined the loss distribution and noise distribution of toll trunks, contact trunk between central exchanges, toll centers and terminal offices etc. to find the best design for a local city telephone system. At the same time, calculation of costs and estimation of accounts were carried out.

For the survey for a microwave communication route to be set across the northern forest regions, basic surveys were carried out mostly for the section between Trujillo and Iquitos between Cajamarca and Yurimaguas. A survey of the section between Yurimaguas and Iquitos was done with map and not a new field trip.

For coastal station facilities, 8 stations besides Paita, Callo and Matarani have been planned to carry out various shipping services using short wave band and international VHF band.

As for the broadcasting department, there has been no past achievements in cooperation for survey or construction. Therefore, the survey in this field was limited to acquiring an understanding of wave conditions, broadcasting administration, broadcasting networks, and broadcasting facilities in Peru.

However, after the survey team reached Peru, the implementation survey was conducted for broadcasting networks and facilities in 4 border areas of Iquitos, Tacna, Tumbes and Puno which the Government of Peru requested in order to replace other regions wrecked by earthquakes.

## CHAPTER 6

# MEDICAL COOPERATION

### *Section 1. Outline of Medical Cooperation*

Japan's Governmental Technical Cooperation began in 1954, when she entered into the Colombo Plan as one of the member countries.

At the outset, it was extended mainly in the cooperation in the field of medicine emerged as one of the important programs of Japan's Governmental Technical Cooperations.

At the outset, it was extended mainly in the forms of sending medical experts to the developing countries and inviting foreign trainees to Japan. Later, in 1958, with the assistance of the Japan Red-Cross Association, the so-called "Traveling Clinic Teams consisting of doctors and nurses emerged as one of the forms of cooperation and were sent to Laos, Thailand, Burma, Indonesia and Nepal. These teams actively engaged in examination and treatment activities for patients residing in remote and inaccessible areas, with necessary equipment and supplies furnished from Japan. Nevertheless, this form of medical cooperation often resulted in a half-rooted and sporadic one, as the project automatically comes to an end immediately after the experts returned from the country to Japan, as no drastic follow-up measures were taken for the patients examined.

In the meantime, it has also become more and more difficult for Japan to continue to carry out this form of cooperation because of the limited budget appropriation as well as other difficulties involved. In attempt to reorganize and improve the mechanization of technical cooperation activities, especially that in the field of medicine, the Overseas Technical Cooperation Agency has established the Medical Cooperation Office to carry out these activities more efficiently. The Agency has been allocated a budget appropriation amounting to ¥337 million to be disbursed for expansion of medical cooperation administration for the developing countries. Thus, it has come to enable the Agency to conduct the activities in more efficient and effective ways. Since then, it has become customary that a medical cooperation project is to be put into implementation under the following formula; first, at the request of an aid-requesting government, an implementation survey team is sent to discuss with the authorities concerned and to work out the details of medical cooperation; second, record of discussion is compiled, on the basis of the findings of the survey team dispatched along with the discussions held between the two governments, and is signed and exchanged between the two parties, which becomes a basic principle under which future cooperation is to be commenced.

Next, dispatching of experts individually or in a survey team to hospitals, medical colleges, research institutes or similar organizations of a recipient country to teach or instruct doctors necessary techniques with the equipment and supplies furnished. At the same time, counterparts are often invited to Japan to undergo training or re-training programs. The majority of medical cooperation projects so far extended are aiming at fostering medical staff, development of research activities, training of counterparts, improvement of public health, conducting of family planning, and provision of charity-oriented clinical work in developing countries. The variety of diseases which have been controlled through this medical cooperation is becoming more and more extensive and diverse, including not only communicable diseases such as viral diseases, tuberculosis, and chorela, but also adult diseases such as heart-attack, dental disorder, and eye-sicknesses.

In recent years, there have been many requests from abroad demanding the creation or the construction of hospitals. Highly competent specialists, mostly professors of colleges or universities have been sent to demonstrate operations, conduct lecture meetings, or upgrade the technical level of dispatched experts. Teams of trained personnel consisting of X-ray technicians, electronic engineers or electricians are dispatched to assist in the maintenance, operation and repair of the equipment already furnished from Japan.

Unlike other forms of technical cooperation, medical cooperation is primarily based on the sincere intention of extending medical assistance solely from a humanitarian view point. However, method of approach and scope of cooperation is becoming more and more diversified.

As a result, the project has come to be an integration of combined efforts as mentioned in the following.

- (1) Volunteer-minded Medical Cooperation  
Example: Tha-Ngon Dispensary in Laos
- (2) Medical Cooperation in Scientific, Research and Educational Activities  
Example: University of Ghana Medical School
- (3) Medical Cooperation in Research and Field Examination  
Example: The Joint Philippines-Japan Eradication Program Chorela El-Tor
- (4) Modernization and Expansion of Facilities  
Example: Thai National Cancer Institute
- (5) Medical Cooperation for Improvement of Public Health  
Example: Parasite Eradication in the Republic of Korea
- (6) Family Planning and Population Control

### Example: Family Planning in Indonesia

As for the terms of on-going cooperation projects, a greater portion is requested of an extension even after it is expired. In addition, the number of requests asking for Japan's assistance in undertaking new projects in developing countries is on the increase can not be ignored. It is important for Japan to take adequate measures so that these requests can be processed efficiently.

## Section 2. Achievements in Fiscal 1971

1. Dispatching of Implementation Survey Teams in fiscal 1971 is as follows:

(1) Total Expenditure	
Implementation survey	¥19,059,000
Implementation programs	¥91,000

2. Expenditure for dispatching of experts and supplying of equipment on project basis are as follows:

Dispatching of experts	¥337,408,000
Supplying of equipment	
a) Budget approved and executed in fiscal 1971	¥237,769,000
b) Budget carried over from fiscal 1970	¥287,293,000

3. Achievements in fiscal 1971 are as follows:

### (1) AFGHANISTAN

#### (A) Wazir Akbel Khan Hospital

To this national hospital, situated in the capital city, Kabul, services of a Japanese expert had been provided to the Orthopedic Department for the fiscal 1967 to 1969, since then, steady progress has been made. The primary object of the project has been to educate the local personnel with the advanced techniques of the Japanese experts. Cooperations so far extended are aimed at the following:

- 1) To strengthen the ties between the two parties in performing the respective services.
- 2) To identify what is needed mostly in this project through the examination of patients.
- 3) To conduct surveys on the actual aspect of the medical institution, doctor's society and post-graduate education in Afghanistan.
- 4) To study the present status of hospital management and organization facilities and operation rooms in order to carry out effectively medical cooperation.
- 5) To conduct surgical operations with the assistance of local staff and to give instructions on the study of various cases and pre-and-post operative management.
- 6) To provide guidance and conduct discussion meetings on the measures necessary for the treatment of burn injury cases or surgical operations.
- 7) To help local technicians take therapeutic meas-

ures for the in-patients and thus to send out new technicians.

- 8) To conduct lecture meetings at colleges or universities, medical associations or in the hospital.

The performances thus far provided are as follows:

Total of eight experts and three therapists, and eight nurses have been dispatched and attached to the orthopedics department. Equipment and supplies necessary for general surgery and orthopedic operation, worth about ¥37,539 have been provided. This equipment is put into use by demonstrating skills in rehabilitation purposes as well as fostering new technicians. In fiscal 1972, an implementation survey team was dispatched in order to evaluate the efficiency of the cooperations already extended and to work out the details of future cooperation. On the basis of its findings, it was decided to extend two more years of cooperation in the department of orthopedic surgery and also the creation of a local workshop within the premises of the hospital where the production of artificial limbs is made possible. Thus, the hospital is expected to play an important role in fostering new technicians at post-graduate level in Afghanistan.

### (2) INDONESIA

#### (A) Department of Oral Surgery, Faculty of Medicine, State University of Padjadjaran

An expert in oral surgery has been in service over the previous year and helped raise the technical standard of the department.

#### (B) Central General Hospital, Bandung, West Java

Since the inauguration of the project in 1967, cooperation has been extended in the forms of sending Japanese experts, supplying of equipment and receiving of trainees in Japan. Steady progress has been made in the development of management methods of the following departments: biochemistry, physiology, microbiology, and serology. As the result of this, the hospital has come to be functioning more smoothly. Two physicians and two laboratory technicians have been sent. Thus, the project is coming to an end as the expected achievement has been attained along with the conclusion of the project. An implementation survey team has been sent in order to study the methods and ways of a new medical cooperation project for modernization and expansion of a clinical laboratory in the Central General Hospital in Djakarta.

#### (C) Central General Hospital, Djakarta

Cooperation continued to be extended as from the previous fiscal year for both the Central General Hospital and Rumah Sakit Persahabatan Hospital in Djakarta. Another expert team consisting of two specialists in surgical operations of pulmonary tuberculosis were sent to finalize the work performed by the dispatched experts attached to the two hospitals.

A senior specialist in operation and treatment of pulmonary tuberculosis who was in charge of the co-

ordination of the previous cooperation was sent, and actively engaged to disseminate and improve the skills and techniques necessary for pre-and-post-operative management. Special mention can be made of the twenty trainees who have completed training programs related to the project in Japan and have been assisting the Japanese experts to the best of their ability. The cooperation has produced fruitful results.

The equipment and supplies that have been donated in this fiscal year such as X-ray apparatus, and other items necessary for conducting examinations in departments of pathology, microbiology, sterilization and rehabilitation are worth about ¥247 million.

#### (D) Tuberculosis Control in Ambon

Receipt of a request from the Government of Indonesia concerning the provision of medical cooperation in eradication of malaria and controlling of tuberculosis in the province of Maluku. It was agreed that Japan's medical cooperation is needed. A total of four experts, three in tuberculosis control, one in laboratory inspection were sent to conduct mass examinations and vaccination against two hundred thousand inhabitants there. Special research has been made to countermeasure the disease. Equipment and supplies consisting of a cruising boat for examination purposes, refrigerator, etc. worth about ¥1.2 million were furnished. In addition, two experts in malaria control have also been sent on a short term basis.

#### (E) Family Planning

The project has entered into the third year following its inauguration in fiscal 1963. On the basis of the findings of the implementation survey team dispatched, purchase of five mobile units to be shipped to BKKBN of the Ministry of Health were processed but it was not possible to complete it by the end of the current fiscal year. In addition, twenty-five thousand gross of condoms amounting to ¥1,184 million for local distribution have been purchased from the budget carried over from the previous fiscal year, and shipped to the related units in Java and Bali Islands.

As for the fellowship training of counterparts, a total of five group training courses has been conducted by OTCA in cooperation with the foundation of International Cooperation in Family Planning Inc., Tokyo. The project is aimed at an effective conduction of the five-year program of Family Planning.

#### (3) KOREA

Cancer Institute attached to Severance Hospital, Faculty of Medicine, Yonsei University

Upon request from the Government of the Republic of Korea, requesting Japan's technical cooperation for the creation and enlargement of the Cancer Institute of Yonsei University, an implementation survey team was sent to study the methods and ways of modernizing the facilities in question. On the basis of its findings, an agreement was reached between the two governments as to the details of future cooperation. A second im-

plementation team was also sent in fiscal 1968, to work out the details of further cooperation. The team discussed with the authorities concerned of the Korean Government on the matters related to the future plan of the project. On the basis of the agreement, experts and technicians were sent. About ¥120 million worth of equipment and supplies i.e.; a linac accelerator, peritoneoscope were provided.

#### (A) Parasite Control

Since the inauguration of the project in August, 1968, a total of fifteen experts, equipment and supplies amounting to some ¥116 million i.e., mobile units for examination purpose or field work have been furnished to the Korean Association of Parasite Eradication.

#### (B) Industrial Hygiene

With a view to modernizing and expanding the existing facilities in the department of industrial hygiene and sanitation of the Catholic Medical College, an implementation survey team was sent to work out the details of future cooperation. On the basis of its findings, ¥463 million worth of equipments and supplies i.e., Hurdurt Tank, operation tables, high-pressure sterilizer etc., were furnished. At the same time, a total of five technicians have been sent to install the equipments already provided. As for the period of this cooperation project, it was decided to be continued for three more years.

#### (4) SRI LANKA

Sri Lanka Drug Quality Control Laboratory

The cooperation began in August, 1968. Assistance has been provided in the forms of supplying of equipment, materials and dispatching of Japanese experts. So far, a total of five pharmacologist have been sent. In addition, equipment and supplies amounting to ¥45.5 million i.e., sample analyzer etc. have been furnished. An implementation survey team was sent in August to discuss and work out the details of future cooperation extended to modernize research laboratories posted in several departments; chemical analysis, pharmacology, biology, and microbiology.

Since the beginning of the project in November, (A) Faculty of Medicine, University of Sri Lanka 1970, two experts have been sent, and about ¥25,034 million worth of equipment and supplies has been furnished by the end of the current fiscal year. Equipments donated were electron microscope and its accessories etc.

#### (B) General Hospital

The cooperation began in fiscal 1967. Expansion of several divisions including general surgery, pediatrics, and nutrition were completed. The project is now nearing its goal. Very good results are expected. In the meantime, one expert has been sent and actively serving at the hospital to give his advanced skills to the local personnel.

#### (5) THAILAND

(A) Thai National Cancer Institute

The cooperation was started in fiscal 1966. In response to a request made by the Government of Thailand at the Annual Consultation Meeting held in Tokyo in May, 1970, it was decided to extend medical cooperation further to assisting in their creation and modernization of several departments of the institute i.e., Department of Surgery, Department of Radiology, Department of Endoscopy, and Department of Liver Cancer Research Project. As agreed upon between the two parties at the Annual Consultation Meeting held in Bangkok in June, 1971, discussion was centered around the further extension of the terms of cooperation as well as the provision of necessary equipment and supplies for its expansion. It was decided that equipment and supplies worth about ¥200 million are to be donated during the coming three year period.

(B) Virus Research Institute, Thailand

Since its opening in February, 1967, a total of thirty-eight medical experts and technicians have been sent. In addition, worth about ¥907.27 million of equipment and supplies useful in eradication of vital diseases, i.e., polio, rabies influenza, and bleeding fever have been furnished. The research thus far conducted has proven extremely useful and is enjoying a high reputation among the peoples of Thailand.

(C) Ramathibodi Hospital, Faculty of Medicine Mahidol University

With Pathology and Ophthalmology Department being added to the hospital in 1968, a total of fifteen experts have been sent, and worth about ¥42,756 million of equipment and supplies was furnished.

(D) Faculty of Tropical Medicine, University of Medical Sciences

Upon request from the Government of Thailand concerning the medical cooperation necessary to exterminate the spread of mosquitoes and ticks, carriers of tropical epidemics, it was decided to help carry out research activities. Equipment and supplies totalling some ¥13,819 million have been provided since the project was inaugurated. In the current fiscal year, a binocular-type microscope and stereographic microscope and stereographic microscope amounting to ¥2,103 million in value have been furnished.

(E) Thai Medicinal Plant Research Project

As requested by the Thai Government, cooperation has been extended in the forms of sending experts, supplying of equipments and receiving of trainees since the inception of the project. More than ten experts have been sent, and many of the counterparts have been invited to Japan. In addition, more than ¥50,000 worth of equipment and supplies have been provided.

(6) PHILIPPINES

Joint Philippines-Japan-WHO Chorela El-Tor Research Project

The project was begun within the frame work of the Colombo Plan in 1964 with a view to controlling

Chorela El-Tor widely spread in the country. The project named "Joint Philippines-Japan-WHO Chorela El-Tor Research Project" was primarily designed to help carry out research activities and eradicate the origin of the diseases in this region. A total of twenty-seven experts consisting of epidemiologists and laboratory technicians were sent. In addition, worth about ¥60 968 million of equipment and materials—medicine etc. has been furnished. Emphasis has been put on the development of technical skills applied to the treatment and establishing of new countermeasures against the spread of the epidemic.

(A) Poliomyelitis Control

On the basis of the findings of an implementation survey team sent in 1967, cooperation has been extended combining the dispatching of experts and furnishing of live-vaccine. A total of nine experts have been dispatched to study and assess the after-effects of the people vaccinated and also to demonstrate new methods for treatment of the epidemic. A total of nine experts have been sent, and worth about ¥117,082 million of equipment and supplies i.e., live polio-vaccine etc. has been donated. Thus, the project is playing an important part for a successful implementation of polio eradication program.

(7) BURMA

Burma Medical Research Institute

The cooperation was put into effect on the basis of the findings of survey team dispatched in 1966. The summary of the assistance proposed by the Burmese Government were as follows:

- a) Research on viral diseases and studies by biological approach
- b) Research on tora-choma
- c) Cooperation in the field of dentistry

As the result of their findings, it was decided to extend assistance in the area of research of viral diseases (as indicated "a" above). Later, in June, 1967, the second implementation survey team was sent to study the methods and ways of future cooperation including dispatching of experts, acceptance of trainees and supplying of equipment. The results of the survey were compiled into the "record of discussion." On the basis of it, a total of fourteen experts have been dispatched and nine counterparts have been invited to Japan. In addition, worth about ¥70 million of equipment and supplies i.e., electron-microscope etc. has been furnished. Thus, the project is not only associated with the study of viral diseases but also that of Tora-choma widely spread throughout the country.

(8) NEPAL

National Hospital

As requested by the Government of Nepal, assistance has been extended in the forms of dispatching of experts, namely, one engineer for installment of X-ray and one for tuberculosis control. In this fiscal year, one installation engineer has been dispatched to help



repair the X-ray units already supplied in the Central Hospital.

(9) VIETNAM

(A) Cho-Ray Hospital

On the basis of an exchange of note signed by the two governments in 1967, aid to build out-patient wards in Neuro-surgical Department to encourage diagnostic and curative activities has been given. Necessary equipment and medicines have been furnished and also a total of seventeen experts, neuro-surgeons and X-ray technicians were sent.

(B) Since the inauguration of the project in 1966, two experts, one surgeon and one anesthist have been attached to the respective departments. In addition, one X-ray technician has also been sent. Equipment and supplies thus far donated has reached ¥52,594 million in value. Thus, the hospital has come to emerge as one of the important first-aid departments in the city.

(C) Refugee Relief Measures

The cooperation was begun in 1971 with a budget appropriation amounting to ¥240 million allocated by the Japanese Ministry of Foreign Affairs. The budget has been expended in the form of a grant to be provided for the construction of refugee camps. Further, supplying of equipment and supplies has been made with a budget allocation amounting to ¥17,618 million for the provision of technical cooperation.

(10) LAOS

(A) Hospital de Luang-Prabang

In response to a request submitted by the Government of Laos asking for Japan's cooperation in expansion of the facilities of the hospital, especially that of Dental Division, one dentist and one installation engineer were dispatched in 1968. So far, a total of eight experts has been sent, and worth about ¥17,866 million of dental appliances have been furnished. Thus, the hospital is contributing much toward the improvement of dentistry in Laos.

(B) Tha-Ngon Dispensary

The cooperation started in March, 1969, with the dispatch of one physician. Following this, a total of three doctors, one technician and five nurses have been dispatched. An implementation survey team was sent in March, this year to work out the details of future cooperation.

On the basis of its findings, equipment and supplies i.e., jeep-station wagons and travelling boat, medicine, medicine etc., worth about ¥44,887 have been donated. Thus, the cooperation enabled the hospital to function fully and provide self-devoting services for the public by making visits a few days a week to the near-by refugee camps. These efforts have been acclaimed highly among the community.

(11) IRAN

Faculty of Medicine, Teheran University

The cooperation was started in January, 1971 on the basis of the record of discussion exchange between

the two governments. So far, an Amino-acid analyzer has been provided to the Department of Abnormal Hemoglobin of the Faculty. One counterpart has been invited to Japan for receiving further training. As for the Nuclear Medicine Department, one scintillation scanner has been provided and one trainee was invited to Japan to undergo further training.

(12) Ethiopia

The cooperation has been extended to help carry out research works planned in various departments including microbiology, virology, serology, epidemiology, and parasitology. Emphasis has been placed on the training of technical staff in these fields. Further assistance has been given to the creation of the Medical Zoology Department. As of the end of fiscal 1971, a total of eleven experts, one adviser on duty, two experts in zoology, one expert in internal medicine have been assigned to respective departments. In addition, worth about ¥26.9 million of equipment and supplies i.e., laboratory instruments etc. have been furnished.

(13) GHANA

University of Ghana, Medical School

The cooperation was begun on the basis of the findings of the implementation survey team dispatched in June, 1971. Emphasis has been made upon the advancement of virological research activities. So far, a total of thirteen experts in virology has been dispatched and equipment and supplies i.e., an electron microscope, consuming goods worth about ¥81 million have been furnished. Equipment thus far supplied has proven to be very useful to educate young technicians who perform research works on viral diseases widely spread in Ghana.

(14) KENYA

(A) Rift Valley Provincial Hospital, Nakuru

The project was inaugurated in fiscal 1967, on the basis of the "Gist of Discussion" signed between the survey teams dispatched from Japanese Government and the Government of Ghana. A total of twenty-six experts has been dispatched. Equipment and supplies including an electron microscope, totalling some ¥81 million have been shipped to help conduct clinical examinations and to teach post-graduate students.

(B) District Hospital Embu and Kenyatta National Hospital

The cooperation was begun in fiscal 1967, on the basis of the "Record of Discussion" signed between the implementation survey teams sent in fiscal 1968 and 1970 and the authorities concerned of the Government of Kenya. A total of seventeen experts have been dispatched and worth about ¥74,778 million of equipment and supplies including intensive care units and their accessories have been donated to help not only conduct clinical examinations and treatment activities for the public but also to operate the new units installed in the hospital. Thus, the efforts have been made by the both parties to bring out a successful operation of the

units already donated.

(15) NIGERIA

(A) Trypanosomiasis Control

In order to assist their research and experimental activities for eradication of trypanosomiasis prevalent in Nigeria, one expert continued to be assigned in the institute since the preceding fiscal year.

(B) University of Ibadan

One technical expert has been assigned since the preceding fiscal year in order to help make the most of the electron microscope already furnished from Japan.

(16) TANZANIA

University of Dar es Salaam

As detailed in the record of discussion exchanged between the Government of Tanzania and the implementation survey team dispatched in January, 1971, worth about ¥2.6 million of electron microscopes and its accessories have so far been furnished. In addition, one specialist in electromicroscopy has been dispatched and counterparts have been invited to Japan to undergo training programs.

(17) BRAZIL

Institute de Medicina Tropical, Universidade  
Perumbuco

Emphasis has been placed on the development of the Brazil-Japan Joint Research Work related to the prevention and eradication of several of the wide-spread parasitoses in Brazil such as Shistosomiasis, Chagas etc. On the basis of the findings of the implementation survey team dispatched in fiscal 1967, the project was put into effect. The cooperation has marked its third year program in this fiscal year. During these years, necessary steps have been taken to furnish those equipment and materials which are to be used for research and investigation by the institute. The areas of expert's assignment were wide-ranged including those in Clinical Examination, Pathology, Laboratory Examination, and field investigation etc. In order to assess the effectiveness of medical cooperation extended for the past five year period and to coordinate the whole works performed by previously returned experts, one senior expert in parasitology has been dispatched in this

fiscal year when the shipping of the proposed equipment was finished. The expert has been able to attend a ceremony commemorating the transfer of Japanese equipments totalling some ¥25 million to the authorities concerned of the Brazilian Government. In addition, the cooperation thus far extended has amounted to a total of ten experts dispatched and a total of five counterparts invited to Japan.

(18) PARAGUAY

National Reprosarium

One expert was sent on a long term basis since the fiscal 1970 to help in the research, diagnosis and treatment activities of leprosy. Though encountering many difficulties such as locality, different customs and culture, an expert has been making untiring efforts to achieve the ultimate aim of the project.

(19) PERU

National Cancer Institute

One expert in Gastroendoscopy has been dispatched for about three months to provide lectures and demonstrations for the returned trainees as well as interested members of the Peruvian Endoscopic Society.

(20) TAIWAN

The projects were started on the basis of the findings of the implementation survey team dispatched in November, 1969. Since then, equipment and supplies amounting to some ¥80 million in value have been furnished and a total of ten experts have been dispatched.

The contents of the cooperations were as follows:

(A) National Taiwan University

Expansion and consolidation of Clinical Laboratory Division and conduction of cooperative study on nose and the oat oilments.

(B) Taichung Provincial Hospital

For improvement of X-ray Diagnosis Facilities.

(C) Taipei Municipality Hostel

Development preventing tuberculosis and modernization and improvement of X-ray diagnosis department.

Since the inception of the project, a total of ten experts have been dispatched and worth about ¥80 million of equipment and supplies has been furnished.

## CHAPTER 7

# AGRICULTURAL COOPERATION

### Section 1. Outline of Activities

#### 1. Background to Agricultural Cooperation

While technical cooperation to the developing countries is not limited to the area of agriculture, it should

be admitted that agriculture occupies a major position for social and economical development in these countries and that it is, therefore, impossible to expect any economic development in these countries without the successful development of agriculture.

In the developing countries—above all in the South-east Asian region, the majority of the people are farmers. Therefore, the improvement of the living conditions of farmers is the most important of the policies for the stabilization of the people's livelihood, though it would depend on the particular conditions of each country how much emphasis is to be placed on agriculture. Moreover, in view of the fact that agriculture constitutes a key production sector that supports the finance of such a country, every such country naturally attaches importance to the development of agriculture in farming policies.

The First Ministerial Conference for the Economic Development of Southeast Asia was held in Tokyo in April, 1966, in which Japan set out a positive stand to its role in the economic development of Southeast Asia. With this as a starting point, Japan implemented first of all a cooperation plan connected with the agricultural development projects in the Southeast Asian region.

In the recent years, there has been a constant increase in the number of requests for cooperation connected with agricultural development not only from Southeast Asia but also from developing countries in Near and Middle East, Latin America, and Africa, etc.

## 2. Present Status of Japan's Agricultural Cooperation

The agricultural cooperation in the past was not very much more than "piecemeal" cooperation, such as transferring specific agricultural technology or establishing an agricultural center, with main emphasis on (1) dispatching experts, (2) demonstrating agricultural technology, or (3) training in such technology. More recently, however, more and more requests have been made for assistance and cooperation in projects planned to be an integral part of an economic and social development program purporting to contribute to the development of national economy. Moreover, there have been a growing number of requests for agricultural education, researches, and technical training, which are most important and fundamental to the development of agricultural technology.

Details of the existing activities in agricultural cooperation may be described as follows:

### (1) Model Farm Development Project

The aim of this project cooperation is to select an appropriate area, not too large in size, which is to serve as a most adequate model for the areas likely to be developed in the future, and to carry out the following activities with a view to providing consistent and comprehensive technical cooperation.

- a) Improvement of physical infrastructure through providing irrigation and drainage, constructing and improving farm roads, and farm field improvement.
- b) Selection of most suitable plant varieties, use of fertilizer, introduction of seeding and cultivation standards, and improvement on the standard of farm-

management techniques by means of extensive employment of agricultural machinery.

- c) Community development of farmers, propagation of technology and other institutional development.

- d) Establishment of pilot farms of a size appropriate to the project area, with a view to contributing to the improvement of farm-management techniques and providing training to the technical instructors of the recipient country.

In carrying out this project cooperation, the above-mentioned basic aim is taken as a guiding principle for the research and operational planning of the projects as well as in dispatching experts, furnishing equipment, and providing training opportunities in Japan to the technical personnel of the recipient country.

### (2) Rural Communal Development Project

Model Development Project Described in (1) is a form of cooperation extremely small in scale with a project area limited to some 200 h.a., and with main emphasis placed on rice growing. More recently, however, more and more requests have been made for the development of a rural community in its entirety, i.e. for assistance to a rural communal development project. In consideration of the present situation like this, the above-mentioned project cooperation has been started.

The project cooperation thus initiated takes up a village as a whole for its project area, and makes a multifarious approach to the problems including not only rice growing but also the development to a multiple cropping pattern and the promotion of agro-industry, in order to increase and stabilize the communal agricultural production. It is also intended to be a comprehensive cooperation plan for achieving the overall development of the rural community in parallel with assistance provided to farmers' cooperative activities and to the efforts for improvement of rural life and environments.

The implementation of the project cooperation comprises not only such activities as surveys, planning and designing for implementation of the project, but also experts services, provision of equipment required, and training of technical personnel of the recipient country in Japan.

### (3) Agricultural Education Cooperation and Research Cooperation

Both educational and technological research play a very important and essential role in directly promoting agricultural development. All the developing countries, being fully aware of this, have been making their utmost efforts in these fields.

The standard of researches on agricultural technology in these countries would require further improvement in the coming years, just as agricultural education awaits dissemination as discussed earlier. Consequently, each developing country will make increasing requests for Japan's cooperation and assistance

in the experimental research activities in the field of agriculture. In response to such requests, experts are dispatched and equipment furnished as required to agricultural educational institutions and experimental stations.

#### (4) Training Center Project

Research engineers are undoubtedly in lacking shortage. Yet even greater shortage is in the supply of counterpart technicians to propagate the technology obtained at experimental research stations. Propagation technique also requires much improvement. Especially, it is considered to be of great importance to train technicians in cultivating techniques and agricultural machinery techniques.

Accordingly, training centers are established in areas where such facilities are needed. Such training centers, staffed with Japanese experts and furnished with necessary equipment, extend practical cooperation by training such counterpart technicians at the project site.

### 3. Future Direction of Agricultural Cooperation

The international community is just entering into a period of great change. At this stage, Japan's technical cooperation extended to the developing countries including those in the Southeast Asian region in particular will gain ever-growing importance in the coming years, if Japan is to fulfil its responsibility and function as an important member of the international economic community. Above all, there will be ever-increasing requests for Japan's technical cooperation in agriculture, which constitutes the most important strategic part of industries for the developing countries. The importance of agricultural project cooperation that would serve as an integral part of an economic development plan directly leading to the growth of national economy of the recipient country received much attention and full recognition also at the Sixth Ministerial Conference for the Economic Development of Southeast Asia, which was held recently, and other international conferences.

In specific terms, the present situation requires large-scale and comprehensive cooperation activities based on what is known as the wide-territory development system including the improvement of physical infrastructure through irrigation and drainage, etc. as well as the improvement of the socio-economic foundations such as the improvement and dissemination of farm-management techniques, the consolidation of farmers' organizations, and establishment of better distribution systems. With these circumstances in the background, there has been in the recent years a tremendous increase in the number of requests from the developing countries for Japan's agricultural cooperation.

The recent requests from the developing countries for Japan's agricultural cooperation are characterized by the following features:

- 1) There is a marked tendency towards integration

through such means as the combination of funds and technology with a view to having agricultural cooperation projects carried out under the Rural Communal Development Plan become an integral part of the economic development strategies.

- 2) The requests for agricultural cooperation represent ambitious development objectives featuring a departure from the existing self-supply cultivation centering around rice growing to achieve multifarious agricultural development covering fruits cultivation, horticulture, and live-stock breeding, for which growing demands are anticipated. The substance of the requests for cooperation consequently shows greater diversification.
- 3) Along with the progress made in the projects for infrastructure improvement, there has been an increase to the areas of pilot farms where agricultural cooperation is implemented.
- 4) There has been an expansion in the regions to which Japan extends agricultural cooperation to cover not only the Southeast Asian region but also the developing countries in Near and Middle East, Latin America, and Africa, etc.
- 5) The objectives embodied in agricultural cooperation projects have shifted from mere production increase to the improvement of labor productivity and land productivity.
- 6) The aim of the cooperation projects is to attain an increase in the income of farmers, and the measures taken to achieve this aim include price policies as well as improvement plans in the areas of distribution and soil composition.
- 7) The areas considered for agricultural cooperation projects have been growing in scale to a state or province as a unit.
- 8) Agricultural cooperation projects are now planned and implemented in terms of a package comprising experimental researches, establishment of farm-management techniques, promotion of the growth of farmers' organizations, and propagation of agricultural techniques.
- 9) Greater emphasis is now placed on agricultural education and research activities on agricultural techniques because these areas are basic to agricultural development.
- 10) The term for agricultural cooperation projects is becoming longer.

### 5. Outline of Agricultural Cooperation Activities by Country and by Project

The following is a summary account of the agricultural cooperation activities currently undertaken under Japan's cooperation plans by country and project.

(As of March 31, 1972)

## Implementation of Project by Fiscal Year

(United: ¥ 1,000)

Country	Project	Fiscal 1967	Fiscal 1968	Fiscal 1969	Fiscal 1970	Fiscal 1971
Indonesia	Increased Food Production in Western Java	77,242	36,668	35,493	55,215	45,829
	Agricultural Development of Tandjum District	0	0	12,241	58,225	22,364
	Agricultural Research at Bogor	0	0	5,986	42,655	51,389
	Development of Rice Cultivation	61,204	118,103	47,117	35,279	43,960
Philippines	Can-Tho University	0	0	44,144	32,654	62,396
Vietnam	Agricultural Development at Toa Ngon	19,008	89,813	34,574	38,584	59,174
Laos	Development of Maize Cultivation	80,665	42,040	30,632	15,011	7,228
Khmer Republic	Agricultural Technology Centre, Livestock Centre	49,500	31,249	31,560	—	—
	Agricultural Mechanization	47,805	63,277	25,044	12,010	14,613
Malaysia	Sericultural Development	0	2,784	84,669	84,432	77,762
Thailand	Agricultural Development at Dandakaraya	0	12,754	45,600	57,752	85,632
Sri Lanka	Rural Development Extension	37,488	89,216	85,715	100,448	75,856
India	Agricultural Development at Dandakaraya	0	0	33,458	99,479	83,383
Nepal	Agricultural Development	0	0	4,926	7,634	26,199
Bangladesh	Agricultural Development	0	0	0	6,038	27,068
	(Sub-total)	372,914	485,903	521,955	645,416	682,853
Others	Basic Research for Development, etc.	} 809	} 22,097		5,470	17,334
	Instruction Tour			7,924	10,863	23,228
	Previous Arrangement for Project				4,980	4,602
	Others			(24,809)	7,039	61,937
	(Sub-total)	809	22,097	7,924	28,352	107,101
	Total	373,723	508,000	529,879	673,768	789,954

## Section 2. Achievements in Fiscal 1971

## 1. Increased Food Production in Western Java, Indonesia

## (1) Outline of Project

In response to Indonesian requests, Japan has been extending cooperation in connection with the following three projects intended for increased food production since May, 1968 with a view to helping the Indonesian Government to promote the implementation of the projects:

- Project for cultivation, examination, and propagation of improved varieties of rice at the experimental farms at Muara, Bogor.
- Project for training in agricultural mechanization at the national farm in Sukamandy and at the Machinery Section of Technology Department, Directorate-General for Agriculture at Passar-minggu in the outskirts of Jakarta.
- Guidance and advice on rice-growing techniques, mechanization, improvement on small-scale land, cooperatives movement, planned production of rice seeds, and so on at the Tjihea Farm, Tjiandjur.

The Government of Indonesia requested Japan to expand the areas of agricultural cooperation still further in the future, and Japan, therefore, started extending agricultural cooperation in respect of the following three projects for a period of three years starting in May, 1971.

In the belief that the future technical cooperation should desirably take the form of combining both

"piecemeal" cooperation activities and comprehensive cooperation activities for regional development, featuring model development of some particular regions with respect to all the processes of rice-growing development as well as cooperation activities for training an increased number of technicians to be engaged in the extension of agricultural techniques and improving their qualification for the purpose of ensuring the diffusion of agricultural techniques to the individual farmers through the Agriculture Extension Office located in each province at present, the arrangement for Japan's future cooperation has been set out as follows:

- Achievement of the Tjihea Tani Makmur Project, which is designed to give guidance and demonstration on all the processes of modern rice growing in a particular district which has been selected as a model district after the improvement of the soil foundation through the construction of farm roads and the completion of irrigation and drainage facilities.
- Achievement of the Extension Farm Project for regional development featuring guidance and demonstration of rice-growing techniques that are applicable as part of the traditional agricultural techniques to the extension-workers and key farmers in Kabupaten, a major rice-producing province in Western Java State.
- Achievement of the training program project designed to offer theoretical and practical training opportunities on rice-growing techniques, seed selection and cultivation techniques, and agricultural mechanization to the technical per-

sonnel of the governmental organizations, the first-line technicians engaged in the propagation of agricultural techniques, and some of the key farmers within the State of Western Java.

These three projects will be implemented with particular emphasis and, besides, these three projects will be combined in an organic way for integrated effects.

Furthermore, Japan will extend cooperation also in connection with the Seed Inspection Training Project and Agricultural Mechanization Training Program, which the Government of Indonesia has been carrying out on the nation-wide scale since some time ago.

## (2) Details of Technical Cooperation

a) At the request of the Government of Indonesia, a preliminary survey team consisting of four members was sent in October, 1966, for a period of approximately three weeks to study the overall policy for the establishment of an agriculture center. Further, on the basis of the results obtained through the preliminary survey, a 10 expert team was dispatched on August 22, 1967 to make an implementation survey concerning Japan's possible cooperation with the Government of Indonesia in its important agricultural policies, as part of the Agricultural Development Cooperation Projects. As a result of the survey, an agreement on agricultural cooperation was concluded between the two Governments in May, 1968. In accordance with this Agreement, five experts were dispatched to Indonesia on September 9, 1968.

b) Agricultural machinery and experimental instruments were supplied in the three years from 1968 to 1970 for the purpose of cooperating in the propagation of technology that would contribute to achieve the increased food production.

c) A traveling experts mission was dispatched in February, 1969 with a view to giving advice to those concerned on the questions of rice growing, soil, fertilizers, damages by insects and vermin, farm management, and agricultural civil engineering, and also discussing the future course of cooperation with the people concerned.

In November, 1969, an Assistance Agreement under Kennedy Round Aid Program was concluded between the two Governments including the project to provide agricultural material and equipment worth \$250,000 to the Tjihea Farm.

Furthermore, the Government of Indonesia made a request that Japan would extend cooperation in improving the infrastructure of farm land to have effective utilization of the equipment and machinery offered under the present cooperation program and the Food Assistance Program in the Tjihea district, and in October, 1970, a 10-man implementation survey mission was dispatched to undertake a detailed survey on the farm field improvement project

at the Tjihea Farm.

d) In May, 1971, a 6-man traveling experts mission was sent for clarification of the implementation policies of agricultural cooperation projects under the Agreement for the period following its renewal. Cooperation was started with a new system by the seven experts assigned to the cooperation projects.

## 2. Agricultural Development Cooperation for Tadjum District, Indonesia

### (1) Outline of Project

The present irrigation project features the construction of (tôshukô) in the Tadjum River to take water at the rate of 5.8 m<sup>3</sup> per second and to lead the water through the trunk water channel and secondary trunk water channel extending over 38 km for irrigating paddy fields of approximately 3,200 h.a. in the Dadjum District. The irrigation project was completed in part in April, 1972, starting watering for irrigation.

The present agricultural development project is carried out, in conjunction with the implementation of this Tadjum irrigation project, for the purpose of constructing a pilot farm in the district under the present project to promote modern irrigation agriculture and to disseminate agricultural technology of this category to the farmers working in the neighboring areas. The present project will include the following undertakings:

a) Improvement work of the infrastructure of farm land including the construction and improvement of water channels for distribution of water from (bun-sui). 1 to each paddy field, drainage channels for improving areas of poor drainage condition, and the farm roads for ensuring highly efficient and modern agricultural operations.

b) Formulating improved cultivation standards concerning the cultivation of excellent varieties, fertilization, and vermin control, etc. for introducing the bi-annual cropping of paddy rice; training, guidance, and propagation of such standards were also provided.

c) Offering guidance and propagation activities concerning water control techniques for effective utilization of limited irrigation water and the maintenance and control of the facilities along with the implementation of the bi-annual cropping of paddy rice.

d) Implementation of agricultural mechanization with a view to carrying out highly efficient agricultural operations and the cultivation of adequate crops at an adequate time of a year, leading to the improvement of labor productivity in agricultural activities.

e) Cooperative implementation of fertilization, vermin control, water control, and mechanization together with efforts of fostering and strengthening a farmers' organization formed the purpose of cooperative procurement of production materials and cooperative shipment of agricultural product, etc.

f) Offering guidance and training on these modern

agricultural techniques not only to the technicians engaged in the propagation of agricultural techniques but also to key farmers, etc. to ensure their proper diffusion with modern model agriculture applicable to the State of Central Java being implemented in this Farm.

#### (2) Details of Technical Cooperation

At the request of the Indonesian Government, a preliminary survey team was dispatched in October, 1969, for a period of one month to study the possible particulars of cooperation activities in connection with the technical cooperation in the pilot farm project and to carry out preliminary surveys. After the survey was completed by this preliminary survey team, a second survey mission was sent in October, 1970 to make detailed plans for the implementation of the cooperation project. This survey mission discussed the particulars of cooperation projects with the Government of Indonesia.

Through negotiations and on the basis of the Minutes of Discussions agreed upon between the authorities of the Indonesian Government and the second survey mission, an agreement was reached between the two parties to the effect that Japan would extend technical cooperation for a period of three years starting in February, 1971. On the basis of this agreement, six experts were dispatched in September, 1971, and necessary equipments have been supplied.

### 3. Agricultural Research Cooperation, Indonesia

#### (1) Outline of Project

The present cooperation plan relates primarily to dispatching experts and offering necessary research equipment to the Central Agricultural Research Institute at Bogor in Western Java for the purpose of conducting researches in collaboration with counterpart researchers on the following three themes.

- a) Ecology of crop-damaging blight insects and their preventive measures.
- b) Method in forecasting an outbreak of crop-damaging blight insects and virus-carrying insects
- c) Physiological lesion of plant and influence of crop-damaging insects to botanical physiology

#### (2) Details of Technical Cooperation

A preliminary survey team was sent in October, 1969 to study the possibility of agricultural research cooperation with Taiwan, Thailand, and Indonesia. The survey team reached agreement with the Indonesian authority on the outline of technical cooperation in the area of plant-protection to be implemented at the Central Agricultural Research Institute.

The agricultural cooperation implementation survey mission sent in February, 1970, conducted a detailed survey on the above-mentioned particulars of the technical cooperation projects on the basis of the results of the preliminary survey and decided to extend technical cooperation.

Three experts were sent in February, 1971 and another expert followed on May 12 of the same year to conduct joint studies on botanical pathology, virus-carrying insects, and plant-protection in the field of botanical physiology. At the same time, necessary experimental material and equipment were provided each year, and the cooperation activities started.

This Agricultural Research Cooperation Project is now getting on the right track because of the efforts of the Indonesian personnel concerned and the Japanese experts assigned to the project after a lapse of one year and a half since its inception.

In the rainy seasons of 1971-1972, both the pathological studies and the physiological studies were carried out not only in the research laboratory but also in the field, and the results of these studies are now being assembled and put in order.

### 4. Agricultural Development in Lampon, Indonesia

#### (1) Outline of Project

The Government of Indonesia made a request in 1970 that Japan would extend cooperation in comprehensive agricultural development in the State of Lampon located at the southern end of the Sumatra Island so that the Government might successfully deal with the ever-increasing dense population of the Java Island.

In response to this request, Japan dispatched a preliminary survey mission in August, 1971, followed by an implementation survey mission in March, 1972. The missions set forth a basic concept for the agricultural development of the State of Lampon and reached a bilateral agreement on technical cooperation.

#### (2) Details of Technical Cooperation

- a) A preliminary survey mission was dispatched in August, 1971, and conducted a feasibility study for the project for which fund-raising cooperation had been requested side by side with a comprehensive agricultural survey of the State of Lampon. The survey mission made a recommendation of the basic conception for the agricultural development in view.
- b) Then, Japan dispatched another mission for implementation of the technical cooperation project for a period of one month since March, 1972. This mission discussed concrete details of the cooperation project with the Government of Indonesia and, at the same time, conducted surveys as required.

### 5. Development Cooperation for Rice Cultivation in the Philippines

#### (2) Details of Technical Cooperation

- a) A rice-production increase plan preliminary survey team was sent in September, 1966 to study the possible areas of agricultural cooperation through on-the-spot surveys and to consult with the Philippine Government.
- b) On the basis of the results of the survey carried

out by the preliminary survey team, a second survey team was sent in April, 1967 and selected three projects designed to promote irrigation on medium and small size farms. In November, 1967, a consultation team in charge of a construction plan of "a Model Farm Land for Increased Rice Production through Improved Irrigation" was dispatched to the Philippines.

c) In order to formulate a detailed implementation plan, an on-the-spot investigation was carried out in the areas from March, 1968 by eleven Japanese experts.

d) In September, 1968, a mission was dispatched to the Philippines to study the project of setting up pilot farms. The mission discussed the future plan of the project with the Philippine Government and drafted the agreed minutes of discussions which set down the outline of technical cooperation to be implemented in the coming years.

e) A agreement was signed on June 17, 1969. Four experts, respectively, were dispatched to the two project areas and necessary equipment were made available, starting the cooperation project that was to continue for the five years to come.

f) For fiscal 1970, a traveling advisory team was dispatched in December, 1970.

## 6. Cooperation with the Department of Agriculture, Can-Tho University, Vietnam

### (1) Outline of Project

The Government of the Republic of South Vietnam requested Japan's assistance in consolidating and reinforcing the Faculty of Agriculture. In response to this request, Japan dispatched a survey mission in July, 1969, and developed the following cooperation plan.

a) Dispatch of a professor and a research fellow both in agronomy and in livestock raising, and guidance and assistance by Japanese instructors in research and teaching methodology.

b) Acceptance by Japanese educational institutions of Vietnamese students who are expected to join the teaching staff of the university in the future.

c) Supply of research and educational equipment and materials required for the operations of the faculty.

In March, 1970, an Agreement on Assistance to the Department of Agriculture of Can-Tho University was concluded between the Vietnamese Government and the Japanese Government, and thereupon Japan started its regular cooperation activities under the Agreement.

### (2) Details of Technical Cooperation

a) In September, 1967, the Government of the Republic of South Vietnam made a formal request for Japan's assistance to the Faculty of Agriculture of Can-Tho University.

b) In May, 1969, the dean of the Faculty of Agriculture of Can-Tho University visited Japan, besides inspecting various universities in Japan, approached many quarters with a request for Japan's cooperation with the University.

c) In July, 1967, Japan sent a mission in response to the request from the Republic of South Vietnam. The mission formulated a cooperation plan, and the details of the cooperation plan were agreed upon between the authority of the Republic of South Vietnam and the head of the mission.

d) A formal agreement was concluded between the Government of the Republic of South Vietnam and the Government of Japan in March, 1970.

In accordance with this Agreement, two professors—one in stock-breeding and the other in agronomy—were dispatched. Further in June, 1971, one professor in agronomy was dispatched, followed by one more professor in stock-raising in March, 1972. These four professors have been engaged in the cooperation activities. In addition, one short-term expert each in optical instruments and in practical agricultural machinery was dispatched to conduct guidance on the operation of the machines and instruments during the fiscal 1971.

While necessary equipment have been offered since the fiscal year, 1970, Japan supplied equipment—mostly experimental equipment—worth ¥48.250 million during the fiscal 1971. Besides, a traveling advisory and investigating team was dispatched in March, 1971 to discuss details of the implementation schedule of the cooperation project and other related matters for ensuring smooth performance of cooperation activities in the subsequent period.

## 7. Tha-Ngon Agricultural Development Project, Laos

### (1) Outline of Project

An Agreement was concluded in April, 1970, with the aim to practise modern agriculture at a pilot farm to be established in an area of approximately 100 h.a. in the Tha-Ngon District having an area of 820 h.a. and to propagate modern agricultural techniques to the entire area of the Tha-Ngon District and further to the whole Vientiane Plain.

The modern agriculture management planned for implementation at this pilot farm originally featured double-cropping of paddy rice. However, it has been decided that some part of the cooperation plan is to be modified to fit the subsequent changes in the socio-economic changes.

### (2) Details of Technical Cooperation

a) A survey mission was sent in January, 1968 for the purpose of formulating an agricultural development plan for the project. Further, in November of the same year, another survey mission was dispatched to review the development plan prepared by the former survey team and to work out a detailed



plan for the implementation of the project.

b) On the basis of this detailed plan for the implementation of the project, a team of three experts was dispatched to Laos.

c) As a result of the negotiations between the mission and the concerned authority of the recipient country, it was decided that the cooperation project would be undertaken with the total project expenses in the amount of U.S.\$2,440,000, and the Government of Japan would offer U.S.\$1,290,000 out of this total amount of required expenses extending technical cooperation through developing 820 h.a. of paddy fields and operating an area of 100 h.a. of these newly developed paddy fields as a pilot farm.

d) In June, 1968, a survey mission was dispatched to study the possible particulars of cooperation to be implemented in the pilot farm. On the basis of the results of the survey conducted by the mission, it was decided that Japan would extend technical cooperation for a period of five coming years, and an agreement to the effect was concluded between the Government of Japan and the Royal Government of Laos.

e) Under this Agreement, experts of the Agriculture and Stock-Breeding Center were dispatched in several stages, and at present nine experts are engaged in the cooperation activities. In the meantime, required materials and equipment such as construction machines and agricultural materials have been supplied.

## 8. Cooperation for Agricultural Mechanization, Malaysia

### (1) Outline of Project

The Malaysian Government has been promoting land improvement projects on a large scale with an accompanying expansion of land that can be utilized for two-crop rice growing pattern as an integral part of the *First-Stage Five-Year Plan of Malaysia*.

In response to a request made by the Government of Malaysia, Japan carried out a preliminary survey concerning mechanization along with the Prai Basin Drainage Reclamation Project initiated in September, 1967. Subsequently in June, 1968, a survey for implementation of the cooperation project was carried out, and on the basis of the results of the survey, the Japanese Government decided to extend assistance for the *mechanization training project* required for introducing two rice-crop pattern.

Through the negotiations that started in December, 1969, it was decided that Japan would extend cooperation in the areas of mechanization training and applied testing techniques connected with the establishment of agricultural mechanization at the Agricultural Mechanization Training Centre located in Bumbong Lima in the neighborhood of the areas planned for the promotion of two rice-crop pattern. The two Governments reached a general agreement concerning the prospec-

tive technical cooperation involving the dispatch of two experts and the supply of necessary materials and equipment. The technical cooperation was launched into actual operation on December 29, 1970 on the basis of this bilateral agreement.

### (2) Details of Technical Cooperation

a) A feasibility survey was carried out on the Prai Basin Drainage Reclamation Project in September, 1967. The preliminary survey on agricultural mechanization which was carried out at the same time clearly set out the future course of technical cooperation towards agricultural mechanization.

b) Subsequently, another survey mission conducted a survey for the implementation of the technical cooperation project for a period of one month from June 24, 1968, and this survey mission drew up a concrete plan of cooperation for training facilities for agricultural mechanization designed to offer training opportunities to Malaysian staffs engaged in agricultural extension work and to promote the propagation of the knowledge and techniques of agricultural mechanization to the neighboring areas.

c) An agreement concerning the project for training in rice-crop mechanization was concluded in December, 1970 between the Government of Japan and the Government of Malaysia.

d) In accordance with this Agreement, two experts were dispatched in March, 1971 for continued cooperation activities. The materials and equipment required for the present project have been supplied in quantities equivalent to 80 per cent of the amount appropriated for the budget for the material and equipment supply project. The items supplied during the fiscal 1971 year were chiefly component parts for the agricultural machines, etc. supplied during the previous fiscal year.

## 9. Cooperation in Sericultural Development, Thailand

### (1) Outline of Project

Subsequent to the First-Stage Six-Year Economic Development Plan (1961-1966), the Government of Thailand is concentrating its efforts on the implementation of the Second-Stage Economic Development Plan started in 1967.

Sericulture in Thailand is carried out chiefly in its north-eastern region, but the scale of the sericultural activities at each farming household is relatively small. Besides, the sericulture techniques await further improvement. The Government of Thailand requested Japan to extend technical cooperation in connection with the promotion of its policy for sericulture development techniques with a view to achieving the improvement of its foreign trade conditions and the stabilization of the livelihood of its people.

### (2) Details of Technical Cooperation

a) A basic survey team was dispatched in July, 1968. The team made a survey of the basic prob-

lems concerning the projected sericultural cooperation as well as rice cropping and irrigation. The survey team made a recommendation to the effect that the proposed cooperation project would be one that would prove highly efficient and effective for the development of agriculture in Thailand.

b) Subsequently, a detailed survey team was dispatched in February, 1969 to make further studies for the implementation of the proposed sericulture development cooperation project. The team surveyed various places in the north-eastern region of Thailand and examined the details of the project plan. At the same time, the survey team consulted with the officials concerned of the Thai Government on concrete measures to be taken by the Japanese Government by way of cooperation to this project.

c) In September, 1969, four experts, including the leader and concurrently expert in breeding, a pathology expert, an expert in silkwork improvement, and an expert in mulberry cultivation, were sent to Thailand in response to a request of the Thai Government for dispatching experts. Further in the fiscal 1970 year, an expert in the development of silkworm varieties and an expert in silk manufacture were dispatched. In the first 1971 year, an expert in mulberry cultivation was dispatched, followed by the short-term dispatch, in the same year, of an expert in threading technique and an expert to be engaged in the installation and adjustment of the threading machine as well as in guidance activities concerning its operation.

d) The equipment supplied so far amount to ¥68,367,000 for the fiscal 1969 year, ¥55,677,000 for the fiscal 1970 year, and ¥52,682,000 for the fiscal 1971 year. The value of the equipment to be supplied in fiscal 1972 is expected to run up to ¥53,313,000. During the fiscal year 1969, a minimum of equipment required for the Sericultural Research and Training Centre in Corat including breeding equipment, pathological research equipment, freezing facilities for silkworm eggs, mulberry cultivation equipment, and vehicles, etc., were supplied. In the fiscal 1970 year, silk-manufacturing equipment, mulberry-cultivation equipment, and so on were supplied to the Sericultural Research and Training Centre and freezing facilities for silkworm eggs were supplied to a sub-center in good quantities to meet its needs. In the fiscal 1971 year, supplementary equipment for the Centre and silkworm egg freezing facilities adequate to meet the needs of a sub-center and silkworm breeding utensils in sets for a sub-center were supplied.

e) The first roving guidance and survey team was dispatched in the fiscal 1969 year and gave adequate guidance on countermeasures for the corpuscle disease. The second survey mission, dispatched in 1970, consulted with the officers concerned of the Thai

Government on the overall development of the co-operation project including such matters as the improvement of subcenters, techniques for extension work, improvement and management of silk-reeling techniques, and training of counterparts in Japan.

In the fiscal 1971 year, the second-stage survey mission was dispatched twice—i.e. at a certain interval, and this mission consulted with the authority concerned of the Thai Government on the extension of the cooperation period.

f) The Sericulture Research and Training Centre in Corat had its opening ceremony in December, 1971.

#### 10. Model Agricultural Development Cooperation, Dewahuwa, Sri Lanka

The Dewahuwa District is located at a point 150 km to the north-east of Colombo. The Sri Lanka Government requested Japan to extend cooperation in promoting the measures for the development of farming villages including this Dewahuwa village in particular. The details of the present agricultural village development project are as follows:

- a) Establishment and guidance of farming techniques and introduction and propagation of mechanized work system.
- b) Instruction of the efficient and effective utilization of irrigation facilities and guidance on control of irrigation water as well as on maintenance and control of irrigation facilities.
- c) Implementation of farming facilities improvement work including repair work on trunk irrigation channels, improvement of branch irrigation channels, construction of new farm roads, farm land readjustment, and so on.
- d) Installation of field irrigation facilities and instruction of irrigation techniques.
- e) Reorganization and promotion of agricultural cooperatives.
- f) Improvement of the farmer's income level through introduction of agro-industry.
- g) Advice for improving livelihood covering such areas as the installation of simplified water-works, improvement on the dietary life, and health and hygiene for farmers.

#### (2) Details of Technical Cooperation

a) A preliminary survey team was dispatched in July, 1968 in response to a request from the Government of Sri Lanka. As a result, the Japanese Government decided to extend cooperation to the project on regional agricultural development of villages of a certain scale including farm-land readjustment, improvement and extension of farming techniques, and organization of farmers, with a view to rendering contribution to the development of agriculture of Sri Lanka. The Government of Sri Lanka selected

eight possible areas for development under the technical cooperation plan and requested Japan's cooperation for realizing the development scheme.

b) The second survey team, dispatched in February, 1969, carried out on-the-spot surveys required for village development in areas centering about the eight prospective sites for development, and, in consultation with the Government of Sri Lanka on the basis of the proposed development scheme, selected Dewahuwa district as a village to be developed under the technical cooperation plan.

c) On the basis of this survey, a detailed survey mission was sent in July, 1969 to formulate a plan for the implementation of the cooperation project concerning the agricultural development of the Dewahuwa District. The team prepared a concrete plan for the cooperation activities, and consulted on the matter with the officials concerned of the Government of Sri Lanka.

d) In July, 1969, three experts were dispatched and some part of the required materials and equipment were supplied in compliance with an earnest request from the Sri Lanka Government.

e) In October, 1970, an Agreement was made and entered into by the two governments for technical cooperation to be extended for a period of the coming five years.

f) In July, 1970, three experts were dispatched, and at present six experts are playing an active part in the cooperation project.

## 11. Agricultural Extension Centre, India

### (1) Outline of Project

The first and the second agreements were concluded between the Government of Japan and the Government of India in 1962 and 1964, respectively, concerning the establishment of model farms. In accordance with these Agreements, Japan extended cooperation by establishing eight model farms (Centres of Agricultural Techniques) in India, together with cooperation in the management of these facilities, for the purpose of demonstrating the Japanese rice-cropping techniques.

In view of the fact that these farms made substantial achievement in the demonstration of improved agricultural techniques, which was the aim of their establishment from the very beginning, the administration of all the phases of these farms was handed over to the Indian side, as the two-year period of cooperation (1967 and 1968) expired. As the Government of India made a request for Japan's further cooperation, Japan decided to render contribution to the increased food production in India through reorganizing two model farms out of the four model farms developed under the first cooperation agreement into agricultural extension centers, taking the opportunity of the expiration of the agreement. Moreover, the same judgement was applied to the four model farms developed under the second

cooperation agreement, and the two model farms, located in Khopoli, Maharashtra State and Mandya, Mysore State, respectively, were reorganized into agricultural extension centers. The agricultural machinery and equipment required for the extension work were supplied and experts were dispatched. At the same time, the following extension training and practical examination programs were undertaken.

a) On-the-spot training for improving rice-cropping techniques extended to agricultural technicians and leading farmers.

b) Practical tests necessary for improving rice-cropping techniques.

c) Practical tests and demonstration programs using improved agricultural tools.

In March, 1971, when the first agreement was closing to the date of its expiration, a team was dispatched to India for discussing the agricultural extension center project in India with the Government of India. As a result, it was decided that the first agreement would be renewed and extended for a period of three years from March, 1972, when the agreement was originally scheduled for expiration.

### (2) Details of Technical Cooperation

#### The First Extension Center

a) In April, 1962, the first agreement concerning the establishment of model farms was concluded, and Centers of Agricultural Techniques were established in West Bengal State, Orissa State, Behal State, and Gjharah State. In accordance with this Agreement, Japan supplied agricultural material and equipment in quantities worth a total amount of ¥36.970 million and dispatched a total of sixteen expert staffs—i.e. four experts for one Centre, continuing efforts in the operation of these Centres for five years.

Prior to the expiration of the agreement in April, 1968, a survey mission was dispatched from Japan to consult with the Government of India on the possible cooperation to be extended by Japan after the expiration of the agreement. The Indian authorities confirmed the successful achievement accomplished at the model farms and requested Japan to extend further cooperation. As a result of the negotiations, it was decided that the model farms located in Surat District, the Gjharah State and in Shahabad District, the Behal State, respectively, were to be reorganized into agricultural extension centers.

b) The agreement concerning the establishment of agricultural extension centers was concluded in March, 1968. Since seven experts were dispatched to the two Centers in July of the same year. Japan has been continuously engaged in the cooperation activities. Moreover, Japan supplied agricultural materials and equipment required for the cooperation project, including motorized cultivators, vermin-control equipment, and cropping machines, worth ¥34 million.

Since then, Japan supplied equipment required for activities at the two agricultural extension centers each year. For the fiscal 1969 year, agricultural tractors were supplied to the Agricultural Extension Centre in Alah, and analytical equipment and instruments, component parts of agricultural machines, and other equipment were supplied to the Agricultural Extension Center in Surat. In fiscal 1969 and 1971, the two centers received equipment and machines, which were for the most part agricultural machines and experimental equipment.

The Second Extension Center

a) The agreement concerning the establishment of second-stage model farms was concluded in December, 1964, and centers for agricultural techniques, similar to those established under the first agreement, were established in the States of Maharashtra, Kelara, Mysol, and Andrapradish. In accordance with this agreement, Japan supplied agricultural materials and equipment worth a total amount of ¥46.9 million and dispatched four experts to each of the centers for agricultural techniques or 16 experts in all.

Prior to the expiration of the agreements in April-June, 1968, a survey team was dispatched. It was decided from a technical point of view, that the two model farms in Khopoli, Maharashtra State and in Mandya, Mysol State, respectively, were to be reorganized into agricultural extension centers.

b) The agreement for this cooperation project was concluded in December, 1968, and four experts were dispatched to each of the two extension centers for cooperation activities.

Moreover, agricultural materials and equipment necessary for the implementation of this cooperation project under this agreement were supplied in the fiscal 1968 year in quantities amounting to ¥31.94 million. Subsequently in the fiscal 1969 year, Japan supplied machine tools, observation equipment, experimental equipment and instruments, and component parts of agricultural machines worth ¥8.51 million. In the fiscal 1970 year, agricultural machines and their component parts as well as experimental machines and equipment were supplied to either one of the two centers. Further in the fiscal 1971 year, equipment and machines chiefly machine tools and extension equipment were supplied to these centers.

### (3) Cooperation for Promotion of Extension Work in Areas Adjacent to the Centre

The Government of Maharashtra State made a request that Japan would extend cooperation to the State in connection with its regional agricultural development plan covering the area of approximately 10,000 h.a., spreading over three Countries, around Khopoli Agricultural Promotion Center with a view to promoting improvement on rice-cropping as well as facili-

tating introduction and utilization of agricultural machinery on a collective basis. Accordingly, the two Governments reached an agreement in March, 1970, concerning Japan's cooperation for promoting the extension of the improved rice-cropping techniques, which had been established prior to the establishment of the centers for agricultural techniques, to the neighboring areas.

On the basis of this Agreement, Japan dispatched three experts of extension work in February, 1971, and two experts of farm-land adjustment in May, 1969. Necessary equipment and machines worth ¥32,000,000 for the fiscal 1969 year were also supplied.

### (4) Outline of Roving Guidance and Survey and Project-Planning Discussion on the First and Second Extension Centers

a) In the fiscal 1970 year, a survey team was dispatched on the occasion of the third year following the inception of model farms as new extension centers, with an aim to discuss the future plan for cooperation activities for the agricultural extension centers.

Subsequently in March, 1971, another survey team was dispatched to consult with the officials concerned of the Government of India on all matters related to the agricultural extension centers.

b) The Government of India requested the Government of Japan to dispatch a roving survey team on vermin-control measures, and Japan dispatched a survey mission of the nature requested in September, 1971 for cooperation with the four agricultural extension centers and the Dankaranya Development Project. Further in March, 1972, Japan dispatched a detailed survey mission in response to a request made by the Government of India for a period of one month to conduct a survey for the implementation of the cooperation project and to study the feasibility of a plan for installation of tube-well facilities at three sub-centers which were subsidiary organs to the agricultural extension center located at Alah.

### 12. Agricultural Research Cooperation, India

The Government of India made a request for Japan's technical cooperation in the areas of rice-cropping and horticulture in order that India might secure the required quantities of fruits and vegetables adequate to meet the growing population as judged from the standpoint of the nutrition of the people of India. Therefore, Japan decided to comply with the request of the Indian Government by offering research cooperation, and a preliminary survey team was dispatched in November, 1971 to make a survey for agricultural research cooperation. As a result of the negotiations between the survey team and the officials concerned of the Government of India, the two parties came to an agreement that a joint India-Japan Research

Project would be carried out in order to establish the techniques for foretelling large outbreaks of chief rice-crop vermin in India, in view of the fact that there still remained many tasks to be accomplished in the area of vermin control while rice production had already reached a stage of constant production increase.

### 13. Dandakaranya Agricultural Development Cooperation, India

#### (1) Outline of Project

An agreement concerning agricultural development cooperation was concluded between the Government of India and the Government of Japan in August, 1970 for the purpose of Japan's technical cooperation in such programs as the training of extension workers to be engaged in the development project for local farmers and farming villages as well as the implementation of farming facilities adjustment, improvement and consolidation of irrigation water channels, and improvement of farming techniques. As the agreement took effect, Japan started its regular cooperation activities.

#### (2) Details of Technical Cooperation

a) In response to the request of the Indian Government, a survey team was dispatched in December, 1967 and conducted a survey of the Dandakaranya Area. After the survey was completed, the Government of India made a request for Japan's technical cooperation.

b) The eighth roving survey team visited India in February, 1969, and undertook a survey of Paralkote District of Dandakaranya Area. As a result, a preliminary survey team was dispatched in July of the same year to make a survey on prospective areas for cooperation and to discuss the particulars of the cooperation project. Further in November of the same year, a detailed survey team was dispatched to India to formulate a concrete plan for the implementation of the cooperation project through on-the-spot surveys. A technical cooperation plan was developed on the basis of the results obtained by the survey team.

c) The two Governments continued negotiations thereafter and concluded an "Agreement concerning the Agricultural Development of Dandakaranya District, India" in August, 1970.

d) Since Japan dispatched six experts in October, 1970 in accordance with this Agreement, it has been engaged in continuous cooperation activities. Chiefly farm-land adjustment machines were supplied in the fiscal year 1970, and chiefly agricultural machines were supplied in the fiscal 1971 year. Moreover, an implementation planning team was sent in August, 1971 to take charge of planning and guidance concerning the (mizu-kakari) area, and a roving vermin-control and guidance team was dispatched in September of the same year and offered advice on vermin-control measures.

### 14. Agricultural Development Cooperation, Nepal

#### (1) Outline of Project

The Government of Nepal has been promoting its economic development along the line laid down in the Fourth Stage Five Year Plan, 1971-1975. Above all, Nepal has been placing emphasis of economic development on agriculture in view of the fact that more than 90 per cent of its people are engaged in agriculture.

In April, 1971, the Government of Nepal requested Japan to extend agricultural cooperation in agricultural development in Narayani Prefecture, Janakpur Prefecture, and Meti Prefecture in Nepal. Japan dispatched a detailed survey team for developing an implementation plan in October, 1971, in response to the request of the Government of Nepal and decided on the particulars of the technical cooperation project.

#### (2) Details of Technical Cooperation

a) In March, 1970, a basic development survey team was dispatched to conduct surveys in the East Kankai Region, the Rapti Farm, and the Janakpur Region of Nepal for a period of one month.

b) A Nepal Project Survey Mission was dispatched in November, 1970 to select appropriate areas for technical cooperation and to work out concrete details of the cooperation project. The mission compiled a report on the results of its surveys.

c) With a view to consulting with the Government of Nepal on the future course of the technical cooperation project, Japan dispatched a project coordination team in June, 1971. Further in October, 1971, an implementation survey team was dispatched. The project started as from November 26, with a two-year preparatory period and a five-year regular cooperation period, and five experts were dispatched under the cooperation project.

### 15. Agricultural Development Cooperation, Bangladesh

Bangladesh (former East Pakistan) imports 1.2 million-1.5 million tons of food per year even though it has an extremely high proportion of cultivated land to the total area of its national territory with an area of 22 million acres of cultivated land for rice crop.

The Bangladesh Government attaches the greatest importance to the Urgent Production Increase Plan for Food. The Bangladesh Government made a request for Japan's cooperation for its plan to reorganize and expand the Agricultural Mechanization Training Centre in Dacca, to which Japan had extended its cooperation before, into seven sub-centers to be established in different regions of Bangladesh for operating as agricultural mechanization training facilities with particular pilot projects as a part of the above-mentioned Urgent Production Increase Plan for Food. On the basis of this request, Japan dispatched a survey mission in August of the current year and formulated the follow-

ing cooperation plan.

- a) To carry out on-the-spot training, demonstration, and education on the operation and repair of agricultural machines at the Agricultural Mechanization Training Centre in Tejgaon for agricultural extension workers at the country level and the village level.
- b) To carry out demonstration programs on agricultural mechanization and modern agricultural tech-

niques for the local farmers and the above-mentioned agricultural extension workers in the pilot-project area of a moderate scale belonging to the training center.

- c) To offer technical guidance to the junior experts, dispatched to the seven sub-centers, at training facilities with the training center operated as the central facilities.

## CHAPTER 8

# PRIMARY PRODUCTS DEVELOPMENT COOPERATION

### *Section 1. Outline of Activities*

It can be pointed out that majority of the developing countries, with aims to become economically self-dependent nations, are making efforts to solve various unsettled questions such as the lack of capital, foreign exchange reserves and the elevation of human skills.

In view of these circumstances, the developed countries, realizing the role of self-helping efforts made by the developing countries in accelerating their national economic development, have been provided assistance mainly in the following three forms.

- (1) Providing "Capital Assistance" in such forms as extension of loans, aimed at solving such questions as shortage of the capital for investment and foreign exchange reserves.

- (2) Providing "Technical Assistance" aiming at raising the level of industrial technology and promoting the training of technicians.

Nevertheless, as cooperations so far extended proved to have given adverse effects on the recipients, unless the extension of loans or goods be included on-going aid projects. Moreover, they have tended to multiply, to a considerable degree, the accumulated debts on the part of recipients, although such assistance has been expanded to improve their balance of payments position.

Meanwhile, the trade gaps between the recipients and Japan have been widened, a big surplus of Japan's export over the import from the developing countries has been recorded.

Thus it has become an urgent matter for Japan to expand further the scale of import of the products from the developing countries, aiming at equilibrating the balance of payments account.

On the other hand, foreign exchange earnings through exports have the advantage that they can be used without any concomitant restraint of debt repayment, etc. by the developing countries. It is, therefore,

considered far more effective than any other means to assist in economic development of the developing countries, which place their economy on the path of development by eliminating trade gaps through the promotion of their exports for increased foreign trade earnings.

About 80 per cent of the total exports by the developing countries consists of primary products. In view of this fact, an increase in the export of primary products seems to be the most important and essential means for these countries to increase their export earnings.

Since Japan's trade with the developing countries has continued to show a large surplus of export over import, creating a big gap between these countries and Japan. Thus, Japan should increase her import of primary products from the developing countries, aiming at improving their international balance of payments.

It is therefore, a new form of economic cooperation that Japan should extend for the benefit of the developing countries. This will help increase their international competitive power needed in the world market. In addition, it will also lead to the maintenance of export surplus, improvement of the quality of the products, reduction of production cost by promoting what may be called "Development Import" meaning combination of capital assistance such as capital investment with technical guidance on such goods as Japan should import more in future, thus increasing the imports of primary products from the developing countries.

The purpose of Primary Products Development Cooperation started in fiscal 1967 with such circumstances as its background, is aimed to increase the volume of Japan's import of primary products from the developing countries and to give technical Guidance required to the improvement of productivity, quality, and distributing machinery.

a) In the first year, fiscal 1967, Japan conducted surveys on the development of maize production in Tanzania, Indonesia, Khmer Republic and a similar was also conducted in Thailand.

b) In fiscal 1968, it was decided that Japan will extend development cooperation on maize in Indonesia and Khmer Republic on the basis of the findings of the survey team sent in the previous fiscal year. Experts were dispatched and equipment needed were provided for the activities there. As for Thailand, construction equipment for use in the excavation of Kenaf retting ponds were furnished, experts on soy-bean production were dispatched on a short-term basis to develop primary products production.

c) In fiscal 1969, experts were dispatched and equipment were supplied to both Indonesia and Khmer Republic for maize production development in continuation of the programs started from the previous fiscal year. Analysis equipment for the oil seed laboratory and equipment for inspection of commodity standards of exports were provided to Thailand. A new project was inaugurated in the same year on the basis of the survey team's report sent concerning the forestry development in Khmer Republic.

d) In fiscal 1970, Japan dispatched a traveling guidance team to Indonesia to discuss the question of expiration the maize development cooperation. On the basis of the discussions held with the Government of Indonesia, the project was continued for another three-year period. In addition, experts were dispatched and equipment were supplied.

In connection with the primary products development cooperation project in Thailand, facilities for pilot plants to conduct experiments on the development of oil seeds were supplied. Three experts were dispatched to teach on soy-bean development. Surveys on the actual conditions, various experiments, and tests were started, and equipment needed were supplied.

The new project which was begun in this fiscal 1971 included the dispatch of a survey team to both Indonesia and Thailand to carry out maize development project.

## Section 2. Achievements in Fiscal 1971

The total amount of the budget allocated for fiscal 1971 was ¥203,960,000, and the main activities were as follows:

a) The duration of the development cooperation project for maize production in East Java, Indonesia, was extended for another three-year period, and the experts dispatched were attached to each project area to continue their services.

b) In view of the fact that fiscal 1971 fell on the

second year after Japan began to assist in the soy-bean development in Thailand, a traveling guidance team was dispatched for the purpose of finding problems and their settlement. The guidance team gave instruction and advices to the experts during their assignments.

c) The cooperation period for the maize development cooperation project in Khmer Republic was extended for another three-year period at the request of the Government of Khmer Republic.

d) The assistance extended in fiscal 1971 was dispatch of a survey mission to study the ways and means for implementation of the agricultural development project in Rampon, Indonesia.

The achievements of the projects being undertaken during the fiscal 1971 were as follows:

### 1. Development Cooperation for Maize in East Java, Indonesia

#### (1) Outline of Project and its Background

The Government of Indonesia had worked out a plan to increase the production of maize in East Java for the purpose of promoting foreign exports, and requested Japan's technical cooperation to the program.

Japanese Government has extended technical assistance under a three-year program starting fiscal 1968 to Indonesia aiming at increasing the production of maize, improving its quality, consolidating the distribution structure. In compliance with the request sent by the Government of Indonesia, the agreement was extended for a period of three years beginning April, 1971 to continue technical cooperation.

The particulars of maize development cooperation project are as follows:

Efforts are being made to the cultivation of the rainy season species of maize. A maize cultivation contract was made with local farmers undertaking the project, when after consent was made by each Kabupaten Office and agricultural cooperatives, the Desa Chieftain which represent them.

Under an agreement, reached on the basis of the Colombo Plan. Experts were dispatched in such fields as cultivation, quality control, and distribution together with the supply of agricultural machines and tools including tractors, fertilizers (urea), etc.

#### (2) Details of Activities

Out of the areas devoted to the project in East Java, five major maize-producing areas were selected.

In the first year prior to the extension of the cooperation agreement (i.e. the one-year period from April, 1971 to March, 1972), that is, in the fourth year of the cooperation from the beginning of the project, all experts who had been dispatched there were already replaced by their successors, and the number of succeeding experts came to seven in all, and provided guidance on themselves with cultivation, product preparation, distribution improvement, and project-

plan development. Among these experts, those offered cultivation techniques were assigned to East Java. Furthermore, an expert in fumigation was dispatched in March, at the end of the fiscal year, and technical guidances in fumigation to local counterparts were given.

Experts sent to Malang Center for Maize Production have been engaged in the maintenance to excellent pure-breed varieties of seeds suited to each project area, guidance on reproduction, and production of seeds for seed-collection field at the Center in addition to those guidances given in the vicinity. Moreover, a traveling guidance team was dispatched to the local area in March, 1972 to give instructions concerning the development project of maize production.

Under this project, the pure-breed seeds of good quality collected at the Maize Center in Malang in the previous year are used for producing seeds to be used for seed collection at the seed-collecting field in each project area by July of the year for distribution to each project area.

In fiscal 1971, many demonstration farms were newly set up. These demonstration farms are devoted to the demonstration of cultivation techniques for the purpose of the extension of maize cultivation techniques and also education aiming at increasing the benefit of extension workers and farmers.

In fiscal 1971, four trainees, counterparts of the Japanese experts (agricultural cooperatives course) were given fellowship trainings in Japan for a period of two months.

### (3) Traveling Guidance Team Dispatched in Fiscal 1971

As mentioned earlier, the traveling guidance team for fiscal 1971 was sent to East Java for a period of one month from March 1, to March 30, 1971. The survey team aimed to supplement the experts already dispatched to the region and have took part in a vermincontrol, soil and fertilizer group and a silo group who took the task of conducting a preliminary survey on the construction of silos in the Port of Slabaja.

#### Experts Dispatched in Fiscal 1971

Planning (Returned to Japan because of illness before the expiration of this term of assignment)	1
Cultivation technique (Production)	1
ditto	1
ditto	1
ditto	1
Processing	1
Distribution Improvement	1
Quality Control (Fumigation) (Short-term)	1
Traveling Guidance Team Dispatched in Fiscal 1971	
Soil & Fertilizer	1
Vermin Control	1
Distribution	1

Quality Control	1
Planning & Processing (Production Planning and Processing)	1

## 2. Agricultural Development Cooperation, Rampon, Indonesia

### (1) Background and Activities of Project

On the basis of the findings of a survey mission dispatched in 1970 to conduct a study concerning the provision of technical assistance in maize development, it was planned to help carry out an agricultural cooperation project in Rampon, Indonesia. Thereafter, it was also pointed out by the Government of Indonesia that the agricultural development is needed in the State of Rampon, for eventually developing it into the foodsupplying base for the Java island, by increasing production of agricultural products encouraging the farmers in Java to trans-migrate the Rampon region to expand agricultural development.

A request was made asking for Japan's cooperation, an agricultural development survey team was dispatched in August, 1971. On the basis of the results of the survey conducted by this survey team, it was decided that Japan will extend development cooperation featuring a unified and organic combination of the following three projects:

- (i) Agricultural Development Center Project
- (ii) Rice-Crop Promotion Project
- (iii) Farm-Crop Promotion Project

#### a) Dispatch of Long-Term Survey Staffs

As a result of having dispatched an implementation survey team, mentioned below, on the basis of the results obtained by the two survey teams mentioned above, a long-term survey team was dispatched to conduct survey activities over a long period of time on the agricultural activities and the management of farming business in Rampon and for the purpose of future promotion of the project.

#### b) Dispatch of Project-Implementation Survey Team

The project-implementation survey team dispatched this time carried out studies for the implementation of the present cooperation project on such matters as a detailed survey of the current conditions, the clarification of possible problem-causing factors, and the formulation of measures for their settlement in cooperation with the long-term survey staffs as required. At the same time, this survey team selected the project areas and worked out the particulars of the development cooperation projects as well as a plan for their implementation.

### (2) Details of Cooperation Activities

#### 1) Long-term survey staffs

In line with the objectives for surveys mentioned above, two long-term survey staffs were dispatched in February, 1972. Additionally, two jeeps were supplied



as equipment intended for ensuring smooth performance of the survey activities.

The result of the survey included the following:

- (i) Survey of the actual conditions
- (ii) Preparatory works for the implementation of the project
- (iii) Follow-up of the capital cooperation
- (iv) Other matters including investigation and advice concerning the development of a regional development plan for Rampon State

## 2) Dispatching a Survey Team for Project Implementation

A survey team consisting of ten members was dispatched in March, 1972 for implementation of the present cooperation project. The particulars of the surveys carried out by the survey team are as follows:

### (i) Agricultural Development Center

The center is to be developed through the reorganization of the facilities currently operated as a seed farm in Teginanan, and the measures taken for this purpose included a series of surveys prerequisite to the enlargement and improvement of the buildings, the farm land, and the dam, etc.

This center performs the following activities:

- a) Collection and analysis of data on the income of the farming households, agricultural management, and the prices of agricultural products, etc.
- b) Technical advice and guidance concerning the planning and implementation of agricultural development projects.
- c) Experimentation and establishment of novel agricultural techniques.
- d) Training of agricultural extension workers and devoted farmers.
- e) Increased production and distribution of excellent seeds and seedlings.
- f) Any other undertaking necessary for the promotion of agricultural development.

### (ii) Rice-Crop Promotion Project

This project is designed to render contribution to the improvement of the income level and the living standard of the farmers chiefly through improvement on the productivity of rice growing in the rice-field areas in Central Rampon so that the agricultural development in the Rampon District may be effectively advanced.

As a result of the efforts to select the project areas, it was decided that the two areas, including the Ktj Trimra district, where the work for paddy-field development had been almost completed, and the Kji Panggur district, where paddy-field development was in progress, for the project areas in which a small-scale demonstration farm having an area of approximately 5 h.a. would be established.

### (iii) Field-Crop Promotion Project

The present project is designed to render contribution to increasing the income of the farmers for im-

proving their living standard and, at the same time, to acquiring foreign currency by means of the expansion of the production of marketable agricultural products including such ordinary crops as maize, beans, and cassava, etc. as well as (cinen-sei) crops in the field-crop areas in central Rampon and south Rampon, the improvement of the distribution systems and the promotion of exports of agricultural produce for the purpose of effective implementation of agricultural development in the Rampon District.

As a result of the examination of the prospective project areas from this viewpoint, the two project areas were selected in the two regions of Ktj Gununy-Sugih and Ktj Natar accompanied with the selection of Desa.

## 3. Primary Products Development Cooperation in Thailand

### (1) Outline and Background of the Cooperation Project

The survey teams dispatched in two stages in fiscal 1967 and 1968, respectively, arrived at the conclusion that the commodities to be taken up under the development cooperation project should be the six items including kenaf, oil-seeds, cassava, maize, milo, and tobacco, and worked out the possible problem-causing factors on each of the commodities and an outline for implementing the technical cooperation project.

The purpose of the project was to increase the productivity, to reduce the production cost, and to improve the quality of oil-seeds (soy beans, castor beans, sesames, and peanuts, etc.), feed crops (maize, milo, and cassava) and kenaf.

Of the cooperation activities to be taken up under the development cooperation project, the task for kenaf was carried into practice in fiscal 1968, and the activities for the standards inspection were carried out in fiscal 1969. As for maize development, three experts were dispatched for a period from April to May, 1970 and necessary materials and equipment were supplied to carry out the establishment of an oil-seed laboratory and the cooperation activities for the maize development cooperation project.

In fiscal 1971, materials and equipment were supplied and the three experts continued their cooperation activities in continuation from the previous fiscal year. Furthermore, a traveling guidance team was dispatched to give guidance and advice.

### (2) Details of Technical Cooperation

#### a) Maize Development Cooperation

On the basis of the survey conducted by the four short-term experts dispatched in fiscal 1968, it was decided that regular technical cooperation should be carried into effect in and after 1970.

The maize produced in Thailand amounts to no more than 60,000 tons in terms of its annual output at present. The consumption demand and the producer's

price of maize are not stable. If maize production is increased in Thailand, it will be necessary to increase the exports of maize because of the limited domestic demand for maize, and it will be necessary to reduce the price of maize in Thailand to the international level.

The measures for these problems would include:

i) Expansion of the maize cultivation acreage introducing the two-crop pattern of maize, cultivation as a second crop in the paddy fields, and maize cultivation as a catch-crop of cotton seeds.

ii) Increasing the maize crop per unit area Improving and extending maize cultivation techniques including the introduction of excellent high-yield varieties, the development of excellent varieties through selection and cross-fertilization breeding, and adoption of mechanized agricultural techniques.

iii) Reduction of production costs through improvement of the distribution structure and rationalization readjusting the existing complicated distribution structure for eliminating as many intermediate dealers as possible.

iv) Implementation of a minimum procurement price guaranty system.

With a view to implementing the above-mentioned measures, i)-iv), experts have been dispatched from Japan since fiscal 1970 and, moreover, necessary equipments have been supplied.

The dispatched experts have been engaged in artificial breeding and production of subsequent generations of crossbreeds in the area of breeding studies, the productivity standard tests, and selection tests on the breeds to be introduced, while devoting their efforts to guidance activities for their counterparts.

In addition to these, productivity standards tests on the breeds to be introduced and part of the selection tests of F<sub>3</sub> generation system and the individuals are being conducted in the farming facilities of the agricultural testing centers. As for cultivation tests, too, such tests as seed-collecting period tests, cultivation concentration tests, weed-control tests, germination tests, fertilization tests, soil water-content tests, and root-tubercle insertion tests were carried out at the agricultural testing center and the multiplication center in each district. Surveys were also conducted on the production costs for farmers, the actual conditions of soy-bean cultivation, and on the conditions of the distribution structure, etc.

Additionally, in view of the fact that the current fiscal year falls on the second year since the beginning of the present cooperation project, a traveling guidance team was dispatched for a period of 21 days from August 15, 1971 to conduct surveys on the current status of the cooperation activities under the present development cooperation project.

The Experts Dispatched are on

Distribution economy	
April 27, 1970-April 26, 1972	1
Cultivation	
April 27, 1970-April 26, 1972	1
Breeding	
May 18, 1970-May 17, 1972	1
The Composition of the Traveling Guidance Team	
Leader & Cultivation	1
Breeding	1
Vermin and Disease Control	1
Processing	1
b) Oil-Seed Laboratory	

A progressive increase is anticipated in the consumption demand for edible oil in Japan in the coming years along with the improvement of the dietary life of the Japanese people. Moreover, in view of the great importance of adopting testing equipment for such applications as the analysis of ingredients, etc. and applying improved quality control to the oil-expression technique for the purpose of promoting exports of edible oil to Japan, it was decided that a pilot plant for oil expression be established in Thailand.

#### c) Maize Development Cooperation

The Government of Thailand requested Japan to extend cooperation to its plan for promoting increased maize production, strengthening the agricultural cooperatives, and fostering the development of agricultural cooperative unions in the maize-production as a project to be undertaken by the agricultural cooperative unions, and Japan, therefore, dispatched a survey team in fiscal 1970.

On the basis of the survey conducted by this survey team, it was decided that Japan would dispatch an implementation survey mission in the current fiscal year to discuss details of the technical cooperation project for the purpose of its implementation. However, the implementation of this plan was tentatively suspended.

## 4. Development Cooperation of Maize in Khmer Republic

### (1) Outline and Background of Cooperation Project

The Government of Khmer Republic requested Japan to extend cooperation to the establishment of a Japanese-Cambodian joint-venture cooperation for tropical crops (SOC TROPICO).

Japan decided to undertake a technical cooperation project covering the processes of maize development from production to distribution in consideration of the need to correct the trade imbalance between the two countries.

An implementation survey team was dispatched in fiscal 1967, and, on the basis of its findings, three experts on distribution, soil and fertilizer, and agricultural machinery, respectively, were dispatched at the end of March, 1969, and fertilizers, agricultural chemicals, and agricultural machines were supplied to start

the development cooperation project from cropping in the rainy season.

#### (2) Details of Technical Cooperation

The purpose of the extension work for agricultural techniques is, of course, to find out how the adequate varieties of maize and the new seed-breeding standards can be propagated to the ordinary farmers so that they may be effectively combined with the intended production increase of maize.

Under the present cooperation project, it was, consequently, decided to adopt a pilot community system as a means to achieving the goal of agricultural extension. The particulars of the pilot community system are described below. The existing breeds of maize were first taken up for the extension activities because the hybrids and their seed-breeding standards were not yet established.

#### Pilot Community System

- a) Location: Two communities, Kokitom (located at a distance of 53 km from Pnonpen) and Samlonton (located at a distance of 43 km from Pnonpen)
- b) The total acreage of the pilot communities was to be 100 h.a., which was to be divided into the unit area of 20 h.a. to form five groups.
- c) System: The operations of the pilot community system will be based on a contract cultivation

system, under which the contractor farmers will be eligible to tractor cultivation service and fertilizer distribution at a low price level. The expenses for the tractor cultivation service and the fertilizers offered under this system are to be repaid with the profit raised through the increase of maize crop. Besides, all the quantity of maize produced will be sold to SOC TROPIC.

#### d) Administration and Management

Influential persons in the community concerned are appointed for taking charge of one 20 h.a. sector of the pilot community for each.

Direct supervision and guidance are performed by this person in charge and by the local counterparts. Also, the distribution of fertilizers and the collection of maize are carried out through the mediation of this person responsible for a part of the pilot community.

In November, 1971, it was decided that the present cooperation project would be extended for another three year period and official memoranda were exchanged between the two government. As a result of this renewal of the cooperation agreement, one expert in cultivation was dispatched, and this expert has been engaged in conducting cultivation tests at the laboratory located in Daiette in cooperation with the local counterparts.

## CHAPTER 9

# JAPAN OVERSEAS COOPERATION VOLUNTEERS

### *Section 1. Outline of Activities*

Budget for the dispatch of Japan Overseas Cooperation Volunteers in fiscal 1971 were 1,255,426 million yen, 7.7 per cent increase compared to the previous year. Dispatch of volunteers in the current fiscal year were: 218 newly dispatched members, 451 members continuing overseas assignment and 258 returned members. A classification among those newly dispatched showed that agriculture and fishery still hold the first place followed by construction, communication, and transport training. In a classification of volunteers by the country, they were sent to more than 60 per cent went to Asian countries with the Philippines being first, followed by Laos and Malaysia; in the African Area, the top position was held by Tanzania and Kenya. In the current fiscal year, Malawi can be added to make a total of 13 countries serviced by Japanese Overseas Cooperation Volunteers, including 6 countries in the Asian Area, 5 countries in Africa, and one country in the Near and Middle East and one

in Latin America. In the current fiscal year, overseas representatives to Zambia and coordinators to Tanzania and Malaysia were assigned to coordinate JOCV members. Moreover, overseas liaison offices have been newly established in Malawi and Zambia, and one more such office has been added in India and Malaysia respectively.

### *Section 2. Achievements in Fiscal 1971*

#### 1. Dispatch of Volunteers

In the current fiscal year, JOCV members have been newly dispatched to Malawi (22 members) in addition to India (16), Laos (25), Malaysia (27), Philippines (42), Kenya (13), Tanzania (32), Morocco (7), Zambia (3), Syria (2), Nepal (9) and El Salvador (10) so far. This means that a total of 208 were newly dispatched. 51 members have been reassigned after an extension of their term of service.

At the beginning of the fiscal year, a total of 482 JOCV members were abroad, namely 58 in Laos, 63 in India, 93 in Malaysia, 88 in the Philippines, 40 in Kenya, 76 in Tanzania, 24 in Morocco, 12 in Zambia, 2 in Syria, 14 in El Salvador, 12 in Nepal. Formalities for extending the period of stay have been made for some volunteers. Of these, 258 members, namely 45 in India, 44 in Laos, 51 in Malaysia, 36 in the Philippines, 11 in Kenya, 50 in Tanzania, 10 in Morocco, 6 in Zambia, 2 in Syria and 3 in El Salvador, have returned to Japan. Works relating to their return have been carried out.

As of the date (31st of March, 1972), the total number of JOCV members sent is 483, exclusive of 9 sent to Malaysia.

Furthermore, in the current fiscal year, on-the-spot physical examinations, technical guidance methods, purchase and shipment work, and direct guidance by the administration office have been carried out. Simultaneously, in order to improve effect of cooperation by assigned volunteers, comprehensive volunteer projects have been brought into execution in Malaysia, Laos, the Philippines, Kenya, Tanzania and Syria, and equipments have been supplied.

## 2. JOCV Volunteers in Active Service Overseas

### (1) India

Since an initial dispatch of 9 members in October, 1966 to India, the number have been increasing every year, and the total number of volunteers assigned has reached 114 up to date (the 31st of March, 1972).

However, due to difficulties the number of volunteers could not be further increased, and dropped down to a mere 16 new assignments in fiscal 1971 (meanwhile, 6 members have extended their term of service and were re-assigned). At the beginning of the fiscal year, 63 volunteers were in active service in India. However, 45 of them have returned within the fiscal year, and the number of volunteers as of the end of March has decreased to 40.

Volunteers with various specializations (agriculture in particular) are being assigned to 9 states such as Punjab State, M. P. State etc. Most important of them are 12 members cooperating in IADP (Integrated Agricultural Development Project) of M. P. State for the propagation of rice cultivation techniques. In Mysore State, 15 volunteers with various specialities are working for comprehensive development projects. Six volunteers went to Maharashtra State. In M. P. State, 2 volunteers are cooperating with experts in the Dandakarania Development Project, working for the spread of agricultural improvements. Four volunteers in sports and four in stock-raising have been assigned to Punjab.

### (2) Laos

Since an initial assignment of 5 volunteers in December, 1965, volunteers have been sent in twenty groups.

A total of 192 volunteers, (10 in fiscal 1965, 45 in 1966, 26 in 1967 plus 1 reassigned, 31 in 1968 plus

6 re-assigned members, 40 in 1969 plus 2 reassignments, 15 in 1970 plus 3 re-assignments, and 25 in 1971 plus 13 re-assignments). Meanwhile, a total of 165 members, namely 11 in 1967, 45 in 1968, 34 in 1969, 31 in 1970 and 44 in 1971, have returned to Japan. Up to date (31st of March, 1972), 52 members are in active service.

Assignment of these volunteers are limited to Vientiane and its outskirt, the royal capital Luang Prabang, and in the southern part of the country.

Four volunteer advisers on vegetables, agricultural machinery, radio transmission, and 7 others versed in agricultural machinery, rice cultivation, vegetables, pro-vender crop, measurement, etc. are now working. Forty-one of the members are stationed in Vientiane and its outskirts. Seven of them are attached to the Tha-Ngon Project, 2 for the Refugees Training Centre, 1 the National Rice Cultivation Experiment Station, and the remaining 31 are in Vientiane.

Their specialities consist of agricultural machinery, water supply equipment, Japanese language, telephone works, city planning, poultry raising, sports, ceramics, geology, mining, radio transmission, soil examination, bamboo wares, water tests, electronic engineering, judo, volley ball etc.

### (3) Malaysia

Since an initial dispatch in January, 1966 of 5 volunteers, a total of 180 volunteers have been sent so far, and presently 79 are in active service. Twenty-seven have been newly dispatched in fiscal 1971. Ten members extended their term of service and are still in active service. To help carry out the second 5 Year Plan starting in 1971, cooperation volunteers in the following areas were sent upon request from the Government of Malaysia:

- 1) Vocational training, in order to secure skilled manpower
- 2) Sports aiming at improvement of citizens' physical level, fraternity between youths of different races, and promotion of sports activities
- 3) Agriculture, to achieve, self-sufficiency of food
- 4) Japanese language training department

In the category of vocational training, 16 volunteers specialized in welding, machine tools, electric wiring, motor vehicle maintenance, radio and television repairs, and wooden wares etc., are attached to MARA Vocational Training Center, for technical training of youths, retraining and rapid training to the unemployed or trainees from enterprises.

In the sports category, besides coaching judo, athletics, gymnastics, volley-ball, basket ball, boxing, and swimming, 22 volunteers are also carrying out physical tests for youths and athletes, aptitude examination for sports, and are working on analysis and analysis of their findings. Through sports, they are increasing goodwill and friendship among youths.

In the agricultural field, volunteers are working

especially in Eastern Malaysia (Saba-State, and Sarawak State) on research in rice cultivation, its propagation, agricultural machinery, irrigation and drainage etc., playing an important role there.

#### (4) Nepal

The first 3 volunteers were personnel of the Rapuchi Experimental Farm who became JOCV members in October, 1970. In the current fiscal year, 9 volunteers have been newly dispatched and the total has reached 21 as of the end of March. Six are specialists in agriculture, 6 construction works survey, 4 sports, 2 nursing, 2 limnetic fishery, and 1 handicraft design.

Specialists are taking part in design and works for construction of major buildings of the Nepalese Government. Japan surveyors are acting as technical advisers accompanying survey teams despite imperfect land condition. Volunteers sent for sports are working on establishment and spread of rules of volleyball, badminton etc., thus contributing to the promotion of sports in Nepal.

#### (5) Philippines

Since an initial team of 12 members was dispatched in February, 1966, a total of 223 volunteers have been assigned up to the end of the current fiscal year. In addition, 32 volunteers have extended their term of service and are presently in active service.

In 1971, besides 42 volunteers sent in groups of 14, 17 and 11, another 9 volunteers extended their stay from the previous year. Presently, 103 volunteers are working in the North of Manila, in southern Luzon, Mindanao Island, etc.

The volunteers were accepted in the Philippines through the efforts of the President's Office and the Philippine National Volunteers Service Committee, and are assigned to the Central Government (the President's Office, Ministry of Agricultural and Natural Resource, Ministry of Social Welfare etc.), local governments (La Union State Government, Bukidnon State Government, etc.), and National Universities (University of the Philippines, Central Luzon University).

Presently, a 4 Year Development Project (1971 to 1974) is being executed with emphasis on agricultural development and social development.

Of the volunteers in service, 70 per cent are cooperating in the fields of agriculture, forestry and fishery, with emphasis on vegetable cultivation and stock-raising.

#### (6) Kenya

Dispatch of volunteers began with the signing of an agreement between the Japanese and Kenyan Governments in March, 1966. Since the first team of 3 volunteers was dispatched in March, 1966, a total of 92 volunteers were sent (besides 13 have been re-assigned) and presently, 45 volunteers are working in various parts in Kenya. In fiscal 1971, 13 have been dispatched and 3 others re-assigned. Within the current year, 3 volunteers have returned to Japan.

The volunteers are working in every part of Kenya cooperating with the Kenyan National Youth Service which aims at fostering young manpower in Kenya, and the cooperation covers construction machinery, surveys, road construction, fishery, welding, jūdo, karate sports and tailoring (for women). Jūdo and karate have been helpful in improving physical strength of Kenyan youths.

#### (7) Malawi

An initial team of 7 volunteers was dispatched in August, 1971, and the total has amounted to 22 volunteers dispatched for marine products, motor vehicle maintenance, access roads, construction designs etc. within 1971.

The volunteers are working in 4 places in Malawi. At the capital Zomba, 2 volunteers for vehicle maintenance are assigned to the Bureau of Motor Vehicles, Ministry of Enterprise Supply, where they are working on maintenance and repair of various models of motor vehicles. 2 volunteers charged with fishery statistics are working in the Malawi Lake Fishery Training Center at Mangochi under the Bureau of Fishery, Ministry of Agriculture.

Five volunteers are working at Borantaya in the central part of the country. Two volunteers working in the Ulser Radio Co. are charged with tests and manufacture of radio sets, directing native employees, administrating manufacturing process and giving advice for improvements.

Besides, other volunteers specialized in construction machinery, motor vehicle maintenance, and electric works are also working on introduction of new techniques in order to improve those of the native employees. The skills held by these cooperating volunteers are highly appreciated.

At Lilongway where construction of the new capital is under way, 4 volunteers are working on designs of roads, constructions and water supply system, while 9 others are carrying out construction works of water supply, direction of maintenance, surveys of roads, bridges and land demarcations, electrical works, installation and tests of electrical equipments in houses, schools, offices and factories; at the same time they are also directing maintenance and repair of various construction machinery and vehicles. They are thus carrying out constructive activities in fields that are indispensable to the modernization of Malawi.

#### (8) Morocco

Since 1967, 66 volunteers have been dispatched, and 7 have been assigned in 1971. Now, 21 volunteers are carrying out activities in such fields as construction, survey, motor vehicle maintenance, swimming coach, gardening, agricultural machinery, sericulture, and veterinarian. Their cooperation aims at solving the problem of shortage of technicians in Morocco. In the field of agricultural development which is part of the new 5 Year Plan in Morocco, Japanese volunteers

advise on agricultural machines, irrigations, and work toward improving skills in sericulture and silk processings, etc. Cooperations are also being given to examination of export meat and that to be on sale in the country.

#### (9) Tanzania

On the 20th of October, 1966, a basic agreement concerning volunteers was concluded, and since the initial dispatch in March, 1967 (30 members), a total of 169 volunteers (in addition to 17 re-assigned members) have been sent.

The 68 volunteers presently in active service are working in 18 different specialities with emphasis on agriculture.

Volunteers in vegetable cultivation being assigned to the Ministry of Agriculture and Agricultural Syndicates, are working in various places in the country as technical directors, giving instructions on cultivation and education of local farmers, farms attached to hospitals or schools, etc., and carrying out construction of model farms.

Volunteers for processing of farm products and livestock products are working on development and research for an economical processing method in order to stabilize product prices and secure off-season foods.

Other cooperation activities are being carried out on a wide scale for agriculture, such as chicken raising, breeding etc.

In the current fiscal year, the dispatch of volunteers in motor vehicle maintenance to the D.M.T. of the Ministry of Construction have been realized.

New dispatches in 1971 consisted of 12 in vegetable cultivation, 8 in fruit plantation, 2 in rice cultivation, 2 in gardening, 1 in chicken discernment, 5 in motor vehicle maintenance, 1 in fishery and fishing tools and 1 in fishing boat engine. The total of 32 which is a sharp increase compared to 19 of the previous fiscal year (10 other volunteers have been re-assigned).

#### (10) Zambia

Simultaneously with the conclusion of an agreement for dispatch of volunteers in March, 1970, an initial dispatch of 6 volunteers in judo (the third team for fiscal year 1969) was implemented followed by the dispatch of 6 other volunteers in wireless communication (the first team for fiscal year 1970). In fiscal year 1971, 6 volunteers in judo completed their term of service and returned to Japan while 3 replacement

members were dispatched as the third team for fiscal year 1971. All volunteers in judo are giving guidances on the techniques of making arrests by judo in the Police School of the Police Agency in Zambia. At the same time, they introduce Japanese judo in numerous demonstrations in various parts of the country in order to improve mutual friendship.

The 6 volunteers in radio communication are working at the police workshop for maintenance and repair of various transmitters and receivers of the VHF station and mobile stations and those of the HF station.

#### (11) Syria

Two volunteers were dispatched in January, 1970 to Syria, and two replacement volunteers were dispatched in fiscal 1971. These volunteers are giving instructions on judo and karate at police schools and at the military academy in Damascus. These instructions are being welcomed with enthusiasm.

#### (12) El Salvador

On the 12th of September, 1968, 8 volunteers in athletic sports, swimming, soft ball, heavy gymnastics, and weight lifting were dispatched as the initial team. They cooperated for the establishment of a training school for physical education instructors. In fact, such a school was realized in March, 1969 inside Masfere Normal School at San Andres City. Three other volunteers in judo, basketball and heavy gymnastics were dispatched. In addition, they gave field training and lectures in Spanish on sports.

Two other volunteers in soccer and table-tennis were sent in fiscal 1969, and 12 others in weight lifting, athletic sports, heavy gymnastics, judo, and basketball were also dispatched.

Moreover, two other volunteers in painting and sculpture were sent in fiscal 1970 to give instructions in art.

In fiscal 1971, 3 volunteers in graphic design, ceramics, and painting were sent. For the category of sports, new volunteers or those for replacement in volleyball (2), athletic sports (1), swimming (1), heavy gymnastics (2), and table-tennis (1) were dispatched.

Meanwhile 15 volunteers have returned to Japan, and 21 are still in active service. The above-mentioned Training School for physical education instructors had its first group of 80 graduates in November, 1970. In November, 1971, another group of some 80 students graduated from this school.

## CHAPTER 10

# PLANNING, PUBLIC RELATIONS, INFORMATION AND DATA PROCESSING, MANAGEMENT OF OVERSEAS OFFICES, LANGUAGE TRAINING AND OTHER ACTIVITIES RELATED TO TECHNICAL COOPERATION

### *Section 1. Dispatch of Survey Team to Assess the Effectiveness of Technical Cooperation*

In the current fiscal year, survey teams have been dispatched to study and assess the effectiveness of technical cooperation as follows:

It has been noted that Japan's technical cooperation extended to several countries in the Middle-East region. The technical cooperation extended to Saudi Arabia should be greatly emphasized in the coming years. This was stressed after a survey mission on economic cooperation with Saudi Arabia was sent. Mr. S. Nakayama, the Agency's President was dispatched in January, 1971 to conduct the survey. The visits thus made, strengthened amicable economic relations existing between the two countries. Moreover, these amicable relations have increased since an agreement on economic cooperation was reached between the two countries.

Meanwhile, demands have been growing in recent years both at home and abroad, for extension of Japan's technical cooperation, her organizational ability and her willingness to dispatch survey missions to these areas. In the wake of such international circumstances, it has been decided to dispatch survey teams to discuss and work out the methods and details of an economic cooperation program on a long termed basis. As a first step of extending economic cooperation to these areas, survey teams were formed and dispatched, and this meant an initial case of economic assistance in these regions. It is also noteworthy that the dispatching of the said contact-type survey team promoted from the fact that Japan's technical cooperation for the past decades toward Saudi Arabia was given merely in the form of receiving of trainees in Japan, no other steps were provided. The teams were able to obtain necessary data and information to work out the details of future cooperation. At the same time, the team was given a chance to join another team being sent by the International Development Center of Japan. And, so coordinated surveys were conducted there. Upon completion of the studies envisaged, the two teams also visited Saudi Arabia's neighbors, Qatar and Iran to collect data and informations related to technical cooperation.

Other survey teams are listed and described below:

a) Destination: West African Countries; Senegal, Cote d'Ivoire, Ghana, Nigeria, and Zaire

Duration: From January 15th, 1972, to February 3, 1972

Considering the past trends of Japan's technical cooperation, it can be said that a greater portion has been concentrated to the Asian region. The proportion of total aid extended to African and Latin American countries, is too small (only 10%) compared with that extended to Asia and the Far-East. Moreover, the volume of technical cooperation extended to West-African countries is far less than the volume extended to all the countries in Africa, and this imbalance can be revised.

The rapid growth of Japan's economy in recent years has become a matter of deep concern to African countries. Thus it has become a more and more important issue for Japan to extend further technical cooperation along with that being extended by advanced countries in the West. In addition, cooperation given to the development of African countries was an important issue during the discussions held at the Third Meeting of the United Nations Conference on Trade and Development convened in Santiago in April, 1972. This indicates that the assistance programs by the advanced nations to the late-beginners among the developing countries come to be an important issue to be dealt with in the context of international friendship and co-existence. More than ten countries out of the total of late-beginners among the developing countries are in the West African region.

b) Destination: Thailand, Laos, Burma

Duration of Survey: From January 24, 1972 to February 7, 1972

c) Destination: Vietnam, Malaysia

Duration of Survey: From December 8, 1971 to December 25, 1971

The above-stated two survey teams have been dispatched to study the present aspect of the technical cooperation projects under implementation at this stage, thereby to improve the cooperation expected in the

future.

The volume of technical cooperation provided by Japan to Thailand since the year 1954, has proven to be greater than other recipients in Asia, and at the end of the current fiscal year, it reached a total amount of US\$10,126 million, accounting for twelve per cent of the total amount received by Asian countries. Thus, Japan stands only next to the United States in terms of the volume of technical cooperation to Thailand. On the other hand, Japan has urged a forward-looking stand to deal with technical cooperation, in view of the increasing requests sent from Asian countries, especially from Burma, Laos, Vietnam, and Malaysia. Japan has been urged that due consideration be given for the extension of economic cooperation to the developing countries. This has been pointed out by the survey missions dispatched in this fiscal year.

The findings of the four survey teams dispatched in the current fiscal year has been compiled into the "Comprehensive Report on the Coordination and Assessment of Technical Cooperation Projects."

In the meantime, survey teams were dispatched to study the actual activities of Technical Cooperation Projects undertaken in the Near and Middle East and in Africa. The teams were able to collect necessary information with the assistance of Japanese experts working in these countries. The results of these surveys have been compiled in the report: "Near- and Middle-East Series" published in April, 1972."

The contents are summarized as follows:

- 1) Iranian Edition: By Mr. Torao Kawaguchi  
Adviser to the Ministry of National Economy,  
the Government of Iran
- 2) Lebanese Edition: By Mr. Kuraji Toojo  
Expert in Sericulture
- 3) Saudi Arabian Edition: By Mr. Shin Ebina  
Middle Eastern and African Affairs Bureau,  
Ministry of Foreign Affairs
- 4) Ministers of the United Arab Emirate:  
By Mr. Shin Ebina  
Middle Eastern and African Affairs Bureau,  
Ministry of Foreign Affairs

## Section 2. Activities of Public Relations

Although the agency's budget was small, at its early stage of participation in the international cooperation, in 1962, has been growing steadily year after year. Accordingly, the areas of technical cooperation have been more and more diversified. Steady progress has been made in the achievement of technical cooperation carried out by the Agency. It has come to attract wider attention among the general public. Obviously, it is important to carry out the activities as efficiently and effectively as possible. At the same time, it is pre-

requisite for the execution of technical cooperation to get more support and understanding about its achievements; especially that the Agency which is involved in the technical cooperation activities on a global scale. For this reason, in the current fiscal year, various kinds of magazines and periodicals have been published, and information activities for the public have also been carried out actively. In addition, the Agency, functioning as a secretariat of the "Overseas Economic Cooperation Campaign" took part in such events as panel discussions, television interviews, essay contests for senior high school students, thesis for foreign students staying in Japan, lecture meetings, film shows held at Tokyo, Osaka, Nagoya, Hiroshima, and Fukuoka. The campaign has proven very successful and gained a good reputation among the parties concerned.

### 1. Publication of "Overseas Technical Cooperation" in Japanese

The monthly periodical has been edited and published by the Agency in order to increase the people's support and understanding for technical cooperation. A special series on the Middle East and Africa were treated in this year's edition and widely distributed to the interested parties.

### 2. Publication of other information

A series of articles in OTCA 1972, edited both in English and Japanese, deal with the origin, organizational structure, responsibilities of the Agency. In addition, a pamphlet titled "Bridging the North and the South" was published containing photographs, and distributed.

### 3. Public relations activities by television

The public was informed of the various activities of the Agency in a sixteen millimeter film dealing with the actual life of foreign trainees studying in Japan. In addition, a sixteen millimeter narrated colored film entitled "Bridging the North and the South," by Mr. Kiyoshi Tsuchiya, a commentator on economic affairs, was produced from the one already completed. The films have been telecast in a series of four times by Fuji Television Co. in the Kanto District, by the Chukyo Television Corp. in the Nagoya Area, and by Kansai Television Co. in Osaka Area. At the same time, a twenty-seven minute colored film entitled "Welcoming our Friends from the South" has been revised out of the one already produced.

### 4. Public information service by newspaper

In the periodical "International Development Journal" some of the activities carried out for the current year have been presented. Further, references and materials necessary for the editorial work done by major news agencies have been provided.



## 5. Production of broadcasting programs for personnel overseas by the Nihon Tanpa Broadcasting Corporation

To inform various parties at home, and to show appreciation for the efforts made by experts, personnel of overseas centers, Japan Cooperation Volunteers new year's greetings from the Agency's President and Director General have been sent. This program has also been tape-recorded and distributed to the seven overseas offices.

## 6. Overseas economic cooperation campaign

The campaign has marked its eighth year, and is aiming at having necessary functions for the propagation and dissemination of informations regarding the importance of the role played by economic cooperation, and also to awaken the public to its significance. The campaign is entering its eighth year. Major events conducted include panel discussions and the Agency's director general's interview on television, an essay contest for senior high-school students and thesis subscription by foreign trainees staying in Japan. Further, film-shows and lecture meetings combined have been held at several major cities, Tokyo, Nagoya, Osaka, and Hiroshima.

In addition, the film show of "Bridging the North and the South" which was produced in the preceding fiscal year has been shown from time to time in some places in this country. This film has been widely acclaimed by those who have seen it. It has also been telecasted on the educational channel of NHK (Japan Broadcasting Corporation).

### Section 3. Information Processing

In order to cope with the expansion of technical cooperation activities of the Japanese Government, it is necessary for the Agency to expand the scope of information processing. For this reason, measures have been taken to provide the installation of a computer system in the information processing division. Necessary work for its installation has been carried out as follows.

#### 1. Streamlining and expansion of the reference room

In January, 1971, an annex of the Agency's head-quarter's building was constructed, which has made the space for various departments even larger. Upon completion of the annex, the reference room was transferred to the main building. At the same time, equipment and materials necessary for the public were furnished. Further, a micro-film recording system was made available to sort various types of reference materials. Thus steady progress has been made not only to expand the scope of the work, but also accelerate the collection and management of these materials.

#### 2. Figures on the results of technical cooperation have been collected and recorded quarterly

The figures were printed in a report "Statistical Report of the Results of Technical Cooperation, Quarterly." An English edition is also published and distributed to DAC, Colombo Plan Bureau as well as other international groups.

#### 3. Publication of "Fisheries in Developing Countries" Series

Interest in fishing industry has been growing in recent years both at home and abroad. To cope with this trends, the publication of the fisheries series has been planned, edited and published with the assistance of the Fisheries Agency and experts.

#### 4. Research entrusted to other groups

Stock raising was selected as one of the themes for research work carried out for the current fiscal year. This research work has been focused on the present level of technical skills and technical problems in question. Specific subjects for study included stock-raising in tropical lands, cattle adaptability, breeding techniques, and improvement of species. This research has been entrusted to the Japanese Foundation of Agricultural Development. The results of this research have been compiled into a report. It is important that information processing activities should be well-planned and executed and integrated in order to carry out efficiently technical cooperation activities. For this reason, the Overseas Technical Cooperation Agency is planning to set up a computer application and recording system to manage necessary data and information needed to carry out operational work. When installed, it will make it easier to conduct operational work.

In the current fiscal year, the Agency has set up a computer utilization committee to study the methods of installation as well as operation. With the assistance of the Ministry of Foreign Affairs, preparatory work has been started. This included designing and programming applicable to the computer operation, and some of the works have been completed already.

### Section 4. Management of Overseas Offices

#### 1. The fourth meeting of resident representatives overseas

In order to maintain close liaisons with the overseas offices, the Agency has made it a rule to conduct such a meeting once every year. The meeting for this year was held in Bangkok for three days beginning on March 27. The main subjects for discussion were:

- 1) Interpretation of newly effected systems and regulations, reporting of the outline of activities, briefing on the new or revised regulations concerning

subsidies to expert's organization, language allowance, remoteness allowance, special allowance for senior experts, etc.

2) Reporting of the outline of activities by each resident representative:

- a) Receiving of experts and survey teams and problems in question.
- b) Sending out of trainees to Japan and problems in question
- c) Achievements of technical cooperation project in each country

## 2. Establishment of Overseas Offices

During the current fiscal year, one office has newly been opened in Iran. One staff of OTCA has been attached to the Jakarta office, the New Delhi office, and Bangkok office, in order to cope with the expansion.

As already stated, in fiscal 1971, a new overseas office was opened in Iran, which added to the already working nine offices including those in Thailand, India, the Philippines, Khmer Republic, Singapore, Indonesia, Bangladesh, Kenya, and Vietnam, thus totaling ten.

## Section 5. Language Training

For the experts and personnel of overseas technical cooperation centers and other personnel to be dispatched to the developing countries, enhancement of expert's

linguistic skills is a most important question.

It is necessary to say that neither the work of expert or the centers personnel can be conducted efficiently, nor any progress can be made in their performances without the knowledge of the languages spoken. Further, the improvement of their language ability is prerequisite to raising the effectiveness of technical cooperation. In this respect, the Overseas Technical Cooperation Agency has established and is conducting intensive language training courses, shortly before their departure from Japan, employing both experienced foreign instructors and competent Japanese lecturers. Trainees are not only technical experts and personnel of overseas training centers, but also their accompanying families, personnel of Ministries or Agencies dispatched overseas, and also instructors of training facilities in Japan.

Languages taught are English, French, Spanish, Portuguese, Indonesian, Thai, Turkish, and others spoken in their assigned countries. English course is to be organized on a yearly basis, and applicants are admitted at any time throughout the year. Other courses are planned and opened when necessary. The number of trainees taught English are (48), French and Spanish (8), others (30). The duration of the courses is one and half months. A six month intensive course has been conducted both at Nagoya International Training Centre and Osaka International Training Centre of OTCA, in addition to the regular courses held at headquarters in Tokyo.