2. Problems and Future Prospects

(1) Shortage in Quantity of Supply

The number and amount of requests from the developing countries have already reached 102 cases and 1,623 million yen respectively since the beginning of equipment supply, which marks a sharp contrast against those of actual requests. The greatest difficulty on the part of OTCA lies in how to effectively select and supply materials out of the many requests, from the budgetary appropriation of only 100 million yen a year. It is inevitable that such requests should increase. if we continue to stick to the policy of combining "experts with equipment." In addition thereto, the requests for supply of materials apart from experts has increased in number. An increase in absolute amount of budgetary appropriations for this project is a problem which must be urgently solved.

The shortage of budgetary appropriation also makes it difficult to supply them with spare parts as an after-care service, and to effectively perform indispensable functions for the handling of such project as dispatch of experts, drawing up of instruction books and so forth.

(2) Necessity of Prior Investigation on Supplying Equipment

As a result of work done to measure the effects of material supply, it has often been pointd out that some of supplies are kept in idle condition and that the selection of equipment is not necessarily appropriate. For the effective execution of equipment supply, the data, such as the detailed specifications of the equipment to be supplied, selection of the installation site, relationship with the economic development program of the recipient country, the experts to be dispatched and the trainees to be accepted, must be accurately grasped. This necessitates prior and thorough investigation. To make effective use of equipment supply in combination with the dispatch of personnel, its propriety is presently determined through deliberate study of the background for the request, of the objective for receiving supply and of the local technical standards. Thus, the local needs and the effects to be technically achieved by the supplied equipment must be carefully studied from various angles; and for this purpose, prior dispatch of an investigator team or expert investigators should be taken into consideration.

(3) Supply of Repair Parts

Usually, in case of the OTCA's project, efforts are made to furnish enough spare parts for one year (or for two years for those that are easily consumed) when making procurements. Strong pressure from the recipient countries stating that Japan should consider after-service including supply of spare parts, introduces a difficult problem, due to the lack of productive capacity for spare parts and import restriction on foreign products due to shortage in foreign currency. To cope with it effectively, we should give kind and flexible after-service to countries taking into account kinds of supplied materials, speed of consumption, way of utilization and conditions prevailing in the recipient countries. In principle, it is to supply durable materials, to attach enough spare parts for two years and to purchase as much as possible the materials of makers having local service net-work. Regular circuit repairing and the checking by the local agents of such net-work should also be fully utilized. In such countries as Pakistan, Afganistan, Nepal and Malaysia, the regular circuit service system for agricultural machinery is functioning partly and has won a good reputation. It is also desirable to expand the supply of repair parts.

(4) Making and Sending Instruction Manuals

OTCA, when procuring materials, has requested makers and trade companies to attach instruction manuals written in English as a condition for making contracts with them. Although this requirement often causes great difficulty for small and medium scale makers to meet because of high cost and incapacity, except for the goods usually exported overseas. However, the making and sending of such manuals are absolutely necessary, if we consider that even a costly equipment will become useless without adequate explanation concerning its maintenance and repair. Also, in view of a strong need for the said manuals by the recipient countries, such items should be sent.

CHAPTER 4

OVERSEAS TECHNICAL COOPERATION CENTRES

Section 1. Outline of Overseas Technical Cooperation Centres

Overseas technical cooperation centres are established in developing countries, as a form of Japan's technical cooperation programs, with a view to contribute to the development of manpower resources in various technical fields, acutely needed for the economic and social development of these countries, and to assist in the promotion and development of scientific and technical

know-hows as well as the improvement in productivity. In establishing a technical cooperation centre, an agreement for the establishment of a centre is to be concluded between the Government of Japan and that of the recipient country; and under the agreement thus concluded, Japan is, as a matter of principle, to provide machinery, equipment and other articles required for the establishment of the centre at her own expense and to send technical experts to take charge of technical guidance and instructions to be given at the centre. As a demonstration of self-help on the part of the recipient country, the country is to provide land and buildings of the centre, and to bear the expenses of local staff as well as those necessary for the maintenance and management of such facilities. Through such mutual cooperation, these centres are established and operated.

Japan has so far established twenty-eight (28) technical cooperation centres as of the end of March 1968 in Asia, Africa, Middle East and Central and South America. Classified by type of technical training given, thirteen (13) centres are in the field of agriculture and fisheries, nine (9) in the medium- and small-scale industries, two (2) in telecommunications and four (4) in other various fields. Of these centres, six (6) centres (including four (4) agricultural demonstration farms in India) have already been handed over completely to the recipient countries, after the expiration of the cooperation periods, and cooperative assistance is still being extended to six (6) centres, with Japanese experts dispatched under the Colombo Plan, and to the remaining sixteen (16) centres, with assistance in accordance with the provisions set forth in the agreement for the establishment of the respective centres.

Given below is a brief description of the role an overseas technical cooperation centre has been playing and the administrative procedures that had been taken before the establishment of a centre.

1. The Role of "Overseas Technical Cooperation Centre" in the Technical Cooperation Programs

It may be summarized that the overseas technical cooperation centres, which Japan has so far established, have been playing a major role in the following ways.

(1) Cooperation in the Training and Development of Technical Skills

At the early stage, just after this form of technical cooperation program took shape, the main emphasis in many cooperation projects was placed on the cooperation in the training and development of technical skills of workers of middle and lower classes in various technical fields, badly needed in the developing countries.

Some examples of this kind of a technical cooperation centre are the Telecommunications Training Centre in Thailand, which has produced a remarkable achievement in the development of skills in the field of telecommunications; the Marine Products Processing Training Centre in India, which has turned out graduates, who acquired up-to-date knowledge for the marine products processing industry; and the centres for the training of the skilled workers and management staff in the medium- and small-scale industries established in Iran, Afganistan, Kenya, Ghana, Brazil, etc.

Particularly, the development of technical skills required in machining, sheet metal working, automobile maintenance, electrical and other industrial branches, including management control, has been taken up as vocational training in the technical training centres set up for medium and small-scale industries, as a form of cooperation to prepare the workers for modern industries. They receive instructions and training in ceramics, wood-working, leather processing, bamboo-craft and others for the modernization of traditional and existing small-scale and cottage industries of the developing countries; and it must be added that high hopes and great expectations are entertained by the developing countries in Japan for her cooperation in the development of their industries where labor is intensively used.

Since it is certain that the demand for middle-class skilled workers in developing countries will increase, in parallel with their economic and social development, fuller cooperation should be extended, both in quality and in quantity, to the various technical training facilities already established in these countries as well as to those that will be established in the future.

(2) Cooperation in the Introduction, Improvement and Dissemination of, and the Adaptation to, Advanced Scientific Knowledge and Techniques

Another type of technical cooperation centres has recently been established. These are the centres to introduce scientific knowledge and techniques and to undertake researches and experiments to help develop and disseminate new techniques.

In the agricultural field, eight agricultural demonstration farms have been established in India to spread Japan's modern rice-farming methods as a means to increase rice production in that country. In Cambodia, the Agricultural Technical Centre and the Livestock Breeding Centre have been established. There is the Telecommunication Research Centre in Pakistan to improve and modernize the techniques in the telecommunication field. It is planned in fiscal 1969 to establish another centre of similar nature in Iran and preparations are now underway. In Thailand, the Virus Research Institute has been established to undertake researches on vaccines for various viral diseases.

Since one cause of the economic gap between the advanced and developing countries can be found in the difference in scientific and technological levels, further cooperation to establish experimental, research and knowledge-disseminating facilities should be carried out positively in order to fill the gap.

It is, therefore, important for Japan to strengthen

this form of technical cooperation, step by step, so that Japan's technical cooperation program may bear good fruits.

(3) Cooperation in the Improvement of Prototype Production

Though the above-mentioned two factories, i.e. (1) and (2), are indispensable to the cooperative schemes for the improvement of production in developing countries, there are some overseas technical cooperation centres whose main purpose is solely to improve the productivity in various industrial fields in these countries.

The Prototype Production and Training Centre in Singapore is the only example of this new form of technical cooperation so far established. The Centre is to undertake the development and design of new machines and tools to be introduced to related enterprises and to offer guidance in the production to medium and small-scale entrepeneurs, as a means to raise the technical standards of elemental industries such as machine, tool and metal-working.

It is of importance, from the viewpoint of imparting real technical know-hows, that such cooperative schemes in proto-type production should further be promoted, particularly in the technical cooperation programs for the industrial fields, for the purpose of not only training in technical skills and giving guidances in management, production and quality-control, but also raising the technical standards in the elementary branches of the metal industry.

(4) Cooperation in the Furtherance of Public Works and Regional Development Projects

This form of technical cooperation involves the donation of a substantial amount of machinery and equipment and may result in a fairly monumental cooperative project quantitatively. The Technical Training Centre for Road Construction, established at Songkhla in the southern part of Thailand, is an example of such a technical cooperation. The Centre is to undertake the construction of roads in southern Thailand to promote the regional development of the area and, at the same time, to carry out the training of technical workers in this field of road construction, thus bringing about excellent results of cooperation in the improvement of social foundations of the communities and the development of that part of Thailand.

Agricultural demonstration farms in India mentioned above could be cited as examples of centres located in distantly rural places where modern agricultural machinery and implements have been introduced, with a result that they have made a great impact on the conventional local communities. The Farm Mechanization Training Institute in East Pakistan, another example of this form of cooperation, has achieved a great deal in this respect, too.

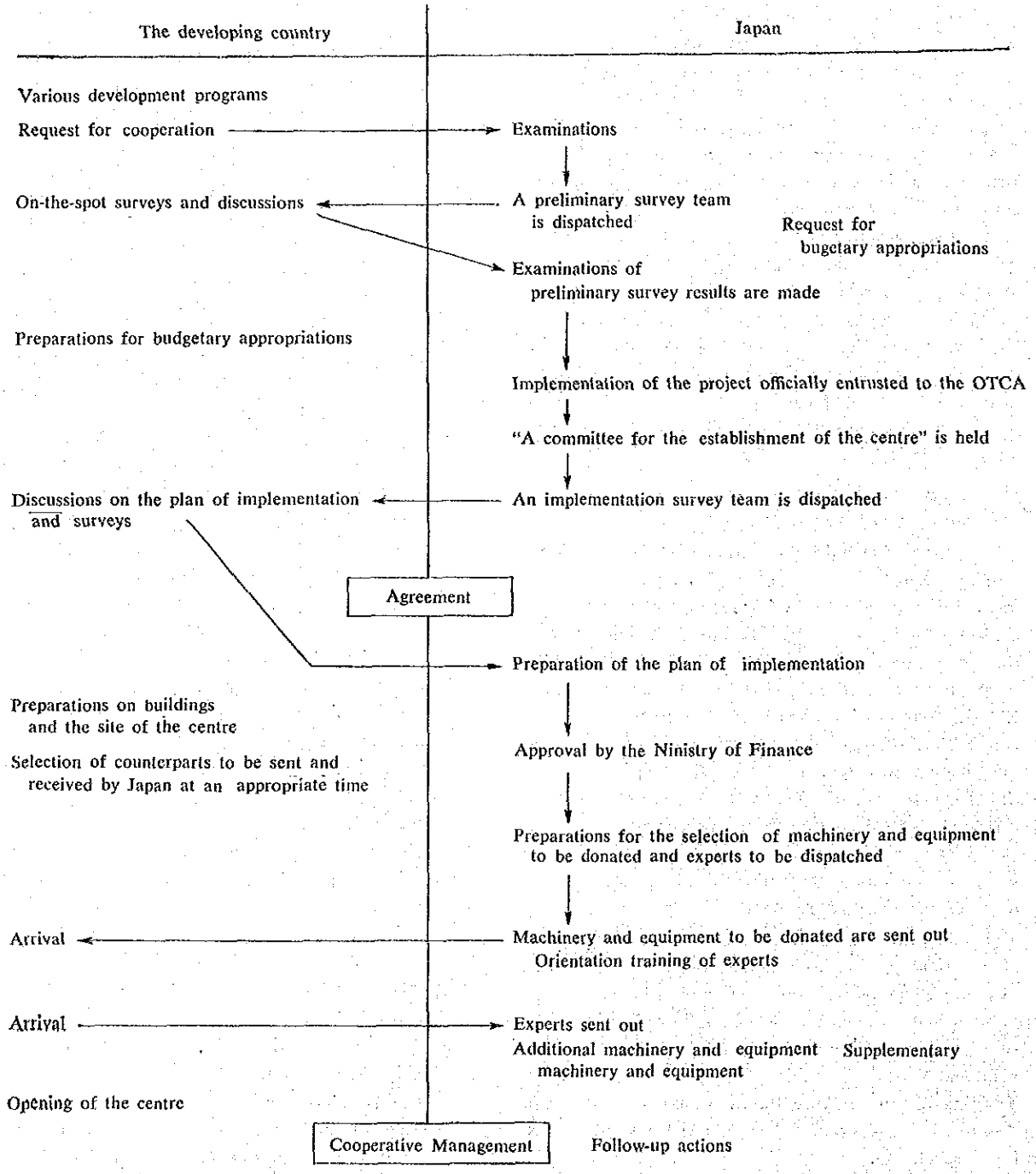
So far described were the ways in which the overseas technical cooperation centres have been playing a major role, according to their form and functions. Since the centres cover a very wide area of technical fields, there are many problems to be solved before the objectives of each established centre are attained to the fullest possible extent, and not only the efforts on the part of cooperation extending country but also the earnest self-help efforts by receiving side are greatly needed in order to improve the effects of cooperation programs.

The administrative procedures to be taken before the establishment of an overseas technical cooperation centre are described below, according to the order of the chart.

1) A recipient country: The government of a recipient country, after examining carefully, projects for the establishment of a centre as a part of its various development programs, submits a formal request for cooperation to the Government of Japan.
2) The Japanese side: On the Japanese side, the Ministry of Foreign Affairs and other Government ministries concerned as well as the Overseas Technical Cooperation Agency examine the request thus submitted from various angles of technical feasibility, scale of cooperation and budget, and send out a preliminary survey team of experts, including usually an official of the Ministry of Foreign Affairs, to the recipient country in order to hold discussions with officials of the recipient government. In this manner, decision is made on how the cooperation is to be extended to the proposed request.
3) The Japanese side: When the principles of cooperation have been decided as a result of the preliminary survey, the Government makes a request for a budget estimate to be allocated towards the establishment of a centre.
4) The Japanese side: After preliminary survey results have been examined and the necessary budgetary appropriations secured, the implementation of the project is officially entrusted to Overseas Technical Cooperation Agency by the Ministry of Foreign Affairs.
5) OTCA: Entrusted by the Ministry of Foreign Affairs, OTCA holds a "Committee for the establishment of a centre" composed of officials of various Government Ministries concerned and men of learning and experience.
6) OTCA: "An implementation survey team" is dispatched to the recipient country to stay for about one month to formulate the detailed plan of implementation.
7) The recipient country: The government of the recipient country receives the implementation survey team and starts to make preparations for those obligations to be undertaken by the Government

as a demonstration of its self-help efforts. Budgetary appropriations are made, the site of the centre and counterparts selected.

8) The Japanese side: Based on the record of discussions between the "implementation survey team" and the government of the recipient country, the final draft of the "agreement" of cooperation is prepared, and negotiations on the contents of the "agreement" starts.
9) Signatures affixed in the agreement: Both parties contract an agreement.
10) OTCA: With the agreement entered into force, OTCA prepares the plan for implementation of the project and the approval of the plan by the Ministries of Foreign Affairs and Finance is to be obtained.
11) The recipient country: The construction of centre buildings is commenced.
12) OTCA: OTCA decides the specifications and kinds of various machinery and equipment to be donated. These machinery and equipment are bought after bids (competitive offers) and sent to the recipient country.
13) OTCA: Experts to be sent out to serve at the



centre are selected. Experts, thus selected, will undertake orientation courses before their departure for the recipient country. Experts are dispatched and reach their destination.

14) The recipient country: Machinery and euqipment sent from Japan are received. Preparations for the arrival of experts are made.

15) Opening of the Centre: Management of the centre is commenced and cooperative management is undertaken.

After the above procedures have been taken, the centre is established. All through the procedures, frequent contacts and exchanges of information are conducted on various aspects of the project of mutual cooperation between Japan and the recipient country.

Section 2. Outline of Centres

1. Centres under Cooperation

(1) Institute of Technology in Korea

This centre has been established as the Institute of Technology attached to Yeungnam College in Taegu City for the purpose of training technicians as a part of Korea's second Five-year Plan for economic development. This centre is to conduct training and guidance in three sectors: mechanical processing (including sheet metal working, welding and forging), chemistry (analysis) and casting, which are vitally needed in Korea. Thirty trainees who are either graduates of a high school or those with higher competency, are admitted in each of the three departments for a two-year course. Those trainees who have completed the two-year courses are to be qualified as graduates from a Primary College (equivalent to a junior college in Japan).

On October 25, 1967, the official documents concerning the establishment of the centre were exchanged between the two countries. Under the agreement thus reached, OTCA has sent machinery and equipment amount to 76 million yen up to now.

(2) Technological and Development Centre for Cottage and Small-Scale Industries in the Philippines

The Government of the Philippines reorganized its administrative structure and created the National Cottage Industries Development Authority (NACIDA) under the Department of Industry and Trade in 1962, for the rapid promotion of cottage and small-scale industries through the utilization and processing of the abundant natural resources which had not fully been exploited in the past due to backward production techniques and the shortage of skilled workers. The purpose of the establishment of NACIDA was to introduce modern techniques and equipment from foreign countries and to establish a technological and development centre for cottage and small-scale industries so that the training of technicians and entrepreneurs in small-scale industries can be conducted through various vocational training schemes. For the furtherance of this purpose, NACIDA requested the Government of Japan to extend technical cooperation in setting up such a training centre.

Japan accepted the request and dispatched a preliminary survey team in March 1965 and an implementation survey team in November 1965, respectively, to hold discussions with the Philippine authorities and to conduct on-the-spot surveys. Following these surveys, it was decided that the centre should take up, in its vocational training programs, five types of occupation, i.e., forging and small machine parts manufacturing, ceramics, textile fibre-craft and weaving, bamboo-craft and rattan-craft, and wood-working, so that Philippine entrepreneurs in small-scale industries can be developed to contribute to the economic development of the nation. In addition to these five training programs, the Centre has added one more program to undertake researches and consulting services on small-scale industries and is to conduct its training in three courses: (a) a training course for technicians, (b) a training course for entrepreneurs, and (c) a re-training course for instructing staff in small-scale industries of NACIDA.

(3) Telecommunication Research Centre in Pakistan

The Government of Pakistan planned to set up a comprehensive telecommunication centre at Haripur in West Pakistan as a part of its second Five-Year-Plan, and requested the Government of Japan to extend technical assistance in establishing a centre for research purpose.

After studying the earnest request of Pakistan, Japan decided to set up a telecommunication research centre and dispatched a survey team in July 1962, which carried out on-the-spot surveys and held discussions with the Pakistani side. The agreement for the establishment of the centre was concluded on November 16, 1963.

Japan donated to this centre various items of equipment for wireless telecommunications, carrier transmission, telephone exchange, telegraph, testing, etc. including the additional equipment supplied in 1967, amounting to an aggregate of 94 million yen, and has sent a total of eight experts including the managing director of the centre since March 1964.

This centre has been established to carry out various researches necessary for the promotion of the development of extensive telecommunication facilities in Pakistan. The centre has been conducting practical researches to develop the communications system best suited to the existing conditions of the country, and to increase the efficiency of communications services in a most economical way through improvement in the quality of the facilities. The centre is also expected to play a leading role in the introduction of advanced technology from foreign countries and has been carrying out researches in this field including those on wireless relay-

ing systems, keeping in close contact with the Maintenance and Facilities Division of the Pakistan Telegraph and Telephone Department.

In addition to the researches and guidances undertaken in such departments as telephone exchange, telegraph, wireless telecommunications, carrier transmission and testing, all the research staff at the centre meet regularly every week to make a progress report on researches and hold discussions on various related subjects.

Some examples of the research subjects are: practical uses of a semi-automatic subscriber line routiner in the telephone exchange department; conversion from the Morse telegraph using a single iron wire to telephone systems in the telegraph department; transmission tests between Rawalpindi and Murree; researches for the introduction of the solar cell (VHF) and the same frequency system (HF) in the wireless telecommunications department; practical uses of a two-way relay in the carrier transmission department. On technical problems referred to by technicians at various workshops in the telecommunication system, the Centre has been advising and studying on the ways to solve or improve them.

(4) Prototype Production and Training Centre in Singapore

For the promotion of industrialization, the Government of Singapore created the Economic Development Board in 1962 and has been making every effort to establish industries, in particular to further the development of technology. In September 1962, the Government of Singapore requested the Government of Japan to extend cooperation in setting up a prototype production and training centre.

To comply with this request, the Government of Japan sent a preliminary survey team to Singapore and conducted on-the-spot surveys in March 1965. On the basis of the findings of the survey team, the Government of Japan appropriated the sum of 80 million yen for expenses of cooperate in the establishment of the centre for the development of small-scale industries in Singapore.

Overseas Technical Cooperation Agency further sent an implementation survey team to Singapore in June 1966, which held discussions with officials of the Government of Singapore on various concrete ways of cooperation, including technical matters.

The agreement concerning this project was signed on October 15, 1966 and the centre was established at River Valley Road in Singapore under the jurisdiction of the Economic Development Board. However, with only 80 million yen worth of the equipment to be donated, Japan could cooperate only in setting up the four departments, namely, (1) machine shop, (2) tool and die working shop, (3) heat treatment shop, and (4) design and drawing shop. Thereafter, the Singapore side requested Japan repeatedly to help establish at least four additional departments; (1) grinding, (2) electroplating, (3) welding, and (4) forging.

At first, the Japanese side planned to cooperate by setting up the above-mentioned four departments only, but it was later decided to donate additional equipment amounting to 45 million yen from the budget for fiscal year 1966 to be installed in the four additional departments, since it was believed that the prototype production centre with only the four departments could not serve the purpose originally planned. In its production process, the Centre is to train engineers, technicians, skilled workers, semi-skilled workers in the design, development, trial production of metal products, tools, machines and accessories and to serve as models in the metal working industry, as well as their manufacture.

(5) Training and Research Centre for Small-Scale Industries in Kenya

The Government of Kenya, which has been adopting measures to promote the industrialization of the country to develop and protect its own domestic industries as a means of its Africanization policies, requested the Government of Japan to extend cooperation in setting up a training and research centre for small-scale industries with the purpose of developing such industries in Kenya.

The Government of Japan decided to cooperate in this project on the basis of the findings of an implementation survey team which had been sent to Kenya in August 1963. The agreement on this project was formally signed between Japan and Kenya on July 30, 1964. Japan donated various items of equipment amounting to 54.9 million yen and sent a total of twelve experts including the managing director of the Centre from September to December in 1964. However, since it was found that preparations on the buildings to be provided by the Kenyan side were not quite ready, training activities, mainly consisting of nine-month lectures, were commenced.

Having six departments of millwrights, electric components and machines, tailoring and dress-making, furniture-making and joinery, assembling and repairs of small machinery and equipment, and leather-working, the centre has been training prospective entrepreneurs for small-scale industries in the technical and the management courses. In addition to these training courses, the Centre has a research department, and a management consultant department to provide consultation services for entrepreneurs in small-scale industries including those who have finished the training courses at the Centre. As of 1968, the training program for the fourth period was completed for 44 trainees, and the fifth period training program is currently being conducted.

(6) Textile Training Centre in Ghana

The Centre is to train technicians in the production of cotton textiles and towels, dyeing and finishing of cotton fabrics, and simple sewing, as requested by the

Government of Ghana, to develop and extend textile techniques, and to increase the domestic demand for textile products, thus contributing to the economic and technical development of the Republic. The Centre consists of two courses, i.e., a regular course to train graduates from junior technical institutes into junior technicians, and a senior course to train graduates from senior technical institutes into middle-class technicians; and is conducting 12-month training programs in the physical and chemical experiment of fabrics, the production of cotton fabrics and towels, sewing and finishing.

Japan provided the Centre with machinery for dyeing, weaving, finishing, sewing and testing, together with various machine tools, amounting to an aggregate of 52.94 million yen. Eight Japanese experts were also sent as instructors at the centre from January to November in 1965, while some Ghanaian counterparts were invited to Japan for training. The centre was opened on February 27, 1967 and training has been carried out ever since.

(7) Vocational Training Institute in Uganda

President Obote of Uganda, during his visit to Japan in 1965, requested the Govermnent of Japan to extend cooperation in establishing a vocational traing institute in his country. In February 1966, the Japanese side sent a preliminary survey mission to Uganda and conducted surveys relating to this project.

Based on the findings of this survey mission, the Government of Japan decided to cooperate in setting up such a centre for the promotion of small-scale industries to be established with local capital, and appropriated 150 million yen for this project in the budget for fiscal year 1967.

This is the first case of Japan's cooperation in establishing an overseas technical cooperation centre in that the expenses for building materials were included, at the strong request of the Uganda authorities, in the budgetary appropriation of the Japanese side.

(8) Telecommunication Technical Training Centre in Mexico (Escuela de Capacitacion en Comunicaciones Electricas Mexico)

Under the Five-Year National Development Plan formulated in 1966, the Government of Mexico has been pursuing vigorously the modernization of the overall facilities in the telecommunication system. However, the rapid expansion of telecommunication facilities caused a serious shortage of technicians. In order to cope with such a situation, the Government of Mexico worked out a program to expand the Telecommunications School under the Ministry of Communications and Transportation (SCT). In carrying out the above expansion program, the Government of Mexico, in May 1964, requested the Government of Japan to extend technical assistance. To comply with the request, the Government of Japan has been sending experts to the Telecommunications School since November 1964.

In 1965, the Government of Mexico repeatedly requested the Government of Japan to extend cooperation in the establishment of additional training courses at the school by means of sending instructors and by supplying teaching materials and equipment necessary for the new courses. Accordingly, the Government of Japan decided to set up a centre and sent an implementation survey team in June 1966, which held series of discussions with the Mexican authorities and conducted on-the-spot surveys. On the basis of the findings of the survey mission, it was agreed that five training courses; namely, microwave, automatic telegraph exchange, radio communication, carrier transmission and designing of telephone network system, were to be established at the centre with a view to training engineers to contribute to the development of telecommunication techniques in Mexico.

(9) Technical Training Centre for Textile Industries in Brazil

Based upon the findings of a survey team which the Government of Japan sent in June 1961 at the request of the Government of Brazil, it was agreed to set up a technical training centre for textile industries in Recife City in the northeastern part of Brazil. The agreement to this effect was formally signed in March 1962.

Under the agreement, Japan donated 80 million yen worth of equipment and sent six experts including the Director of the Centre in August 1964, while several Brazilian assistants were invited to Japan for training.

Preparations on the Japanese side proceeded smoothly, as scheduled, and were complete by August 1964, with equipment purchased and sent out. Brazilian assistants trained in Japan and suitable Japanese staff well selected and assigned. However, preparations on the Brazilian side, including the buildings to be provided, were often delayed by domestic conditions, such as inflation and political events, so it was in July 1965 that the Centre was opened provisionally.

The northeastern part of Brazil produces raw cotton of excellent quality. Hence the cotton industry is one of her key industries. However, the region is suffering from extremely low productivity, though the labor conditions and the marketing conditions for consumption are favorable to industrial development. To overcome this difficulty, Superintendencia do Desenvolvimento do Nordeste (SUDENE) worked out a reorganization program for the cotton industry, and set itself to revive the industry by making loans for the overall replacement of machinery and equipment and by training technicians as well as modernizing management. As one of the training facilities of SENAI (the vocational training organization in Brazil) under the jurisdiction of SUDENE, this centre is to re-train foremen in the cotton-spinning industry in the techniques of maintenance and operations of a spinning factory as well

as quality control methods, and to develop them into middle-class technicians at the factories. For this purpose, the centre has been carrying out a 6-month training program for 40 trainees in such courses as blowing and carding, combing, drawing and roving, spinning and twistling, preparing for weaving, weaving, testing and quality control.

2. New Centres under Preparations and Centres Currently in the Course of Establishment in Cooperation

(1) Fisheries Training Centre in Indonesia

The Government of Indonesia has been making every effort to solve the food problem as an indispensable part of its economic development program, and requested the Government of Japan to extend cooperation in modernizing the fishing industry. After examining the request, the Government of Japan decided to cooperate in this project, with a budgetary appropriation of 100 million yen as the expenses for machinery and equipment to be donated.

1) The main purpose of this project is to modernize the overall fishing industry in Indonesia, including such sectors as preservation and processing as well as the processing of marine products and improvement of fishing techniques. Taking into consideration the financial conditions on the Indonesian side, the construction of new buildings should not be requested but existing facilities should be utilized.
2) As to the existing facilities to be utilized for this project, the expansion of the following establishments is currently under consideration:

Djakarta Fishing Techniques Research Institute, Djakarta Fisheries Academy, Oceanic Resources Research Institute, Fishing Boats Construction Research Institute and Fisheries high schools in Tegal, Bali, Ambon, Mando and Makassar.

In addition to the donation of machinery and equipment amounting in aggregate to 100 million yen, Japan is considering the dispatch of experts in each field, such as the preservation and processing of marine products, the fishing techniques and the processing of marine products.

(2) Telecommnication Research Centre in Iran

This project originated on the request of Mr. Sotoudeh, the Minister of Posts, Telegraph & Telephones of Iran during his visit to Japan in November 1967, to the Government of Japan to extend cooperation in the development of researches in the field of telecommunications, a part of Iran's fourth Five-Year Program. On the basis of the findings of a preliminary survey mission sent to Iran by the Government of Japan in July 1968, it was decided, in principle, to extend cooperation in setting up a "research centre," similar to the Telecommunication Research Centre in Pakistan already established, in order to contribute to the development of the telecommunication sector in Iran.

The Government of Japan is currently conducting examinations to cooperate in establishing such departments as microwave, wireless telecommunications, carrier transmission, wiring, telegraph, telephone, broadcasting and a testing laboratory. High hopes and great expectations are pinned on the role that this centre will play, when established. The total amount of various items of equipment to be donated to this centre is 120 million yen.

(3) Vocational Training Centre in the Republic of China (Taiwan)

The Government of the Republic of China has been pushing ahead its fifth Four-Year Economic Development Plan. However, with the rapid progress in the industrial development, it is of urgent necessity for the Government to train and secure the skilled manpower in the industrial fields.

Though there exists, in the Republic, the demand for about 46,000 skilled industrial workers annually, the capacity of the existing educational and technical training facilities to train and supply skilled workers is not quite adequate.

To cope with such a situation, the Ministry of Economy of the Government of the Republic of China has decided to launch a four-year program to develop manpower, under the direction of the "National Enterprise Commission." In carrying out manpower development program, the Government of the Republic of China has decided to establish skills training centres in the northern part and the southern region in the Republic and has been making efforts to expand and strengthen the program.

The Government of the Republic of China requested the Government of Japan to extend technical cooperation in establishing and expanding the above centres in the two regions.

The expenses for the establishment and the operation of the centres are to be borne by the eleven national (or state) enterprises, the combined production of which occupy more than forty per cent share of the Republic's total industrial prdouction. The centre in the northern region is to train about 720 workers, after Japan's cooperation materialized, while the centre in the south plans to train 250 to 300 workers annually. The present plan of Japan's cooperation is to help establish five courses: 1) steel and canning workers, 2) welders, 3) machine mechanics, 4) electrical appliances workers and 5) mechanical draftsmen, in three steps—"technical apprentices training," "trained technicians training" and "specified training"—and the curricula for those training programs are being examined.

As to the total budget for this project, 100 million yen has been earmarked for the expenses for various items of equipment to be donated in fiscal year 1969.

It is earnestly hoped that with Japan's cooperation in this project, the training of middle-class skilled

workers, which the Republic urgently requires, will get into smooth running order, thereby contributing a great deal to the development of industries.

3. Cooperation in Small-Scael Projects

The cooperation in small-scale projects is a new form of cooperation, for which 50 million yen has been appropriated for the projects to be undertaken in fiscal year 1969.

This is the form of cooperation, combining "equipment with a team of a few experts," to be extended to a project of small-scale, which could not be taken up as a project under the existing "training centre system," because of the present stage of economic development in the developing country or the scale of a project.

In other words, this new form of cooperation has been designed to fill the gap which could not have been filled in the past, with the existing three methods of cooperation: "assignment of experts," "supply of equipment," and "establishment of a technical centre."

This form also includes such projects that are believed to be better to start on a small-scale at the beginning and to expand gradually step by step, in view of the contents of the projects as well as the abilities of recipient countries to make self-help efforts, even though the projects themselves fall under the large-scale centre system in the original requests.

The concrete scale of this system of cooperation in small-scale projects could not be laid down in detail at present, but this new system could be applied with much flexibility and it is planned to take up, under this system, mainly such projects where recipient countries can provide the existing facilities.

(1) Expansion and Establishment of the Diesel Department and the Agricultural Equipment Repair Department at the Training Centre for Small-Scale Industries in Iran

Iran has currently been making efforts to carry out the ambitious economic and social development under its fourth Five-Year Plan (1968–1972).

The present share of agriculture and livestock-farming to Iran's national income is twenty-four (24) per cent and the values added in the above two sectors rank second only after the petroleum industry in all the production sectors.

The farming population occupies sixty-one (61) per cent of the total population and forty-eight (48) per cent of the total employed population.

Iran places emphasis on the improvement of agricultural productivity under the Program. Under the third Agricultural Plan, it was planned to increase the values added at an annual rate of four per cent and a great deal was achieved by the enforcement of the "Land Reform Law," collective organization of agricultural cooperatives, and improvement of agricultural finance institutions. Under the present Plan, much emphasis is laid on the diversification of farm crops and improvement of irrigation networks, as well as the mechanization of agriculture.

As a concrete program, it is planned to purchase 3,000 tractors in the first year under the Plan, to be re-sold to farms for six annual installment payments. In the second and third years under the Plan, it is planned to convert an assembly plant with the annual production of 3,000 to 5,000 tractors into a manufacturing plant to produce 5,000 tractors annually. In the last year under the Plan, the manufacturing plant is planned to produce 24,000 tractors annually.

For the promotion of such mechanization in agriculture, the Government of Iran, feeling the urgency to train diesel technicians and agricultural equipment repair workers, has requested the Government of Japan to extend technical cooperation in this regard.

The Government of Iran, having in mind the effective utilization of the existing machines, welding, sheet metal working, casting departments at the Training Centre for Small-Scale Industries at Karaji, has planned to expand the diesel department and to establish an agricultural equipment repair department at the above Training Centre, and submitted the formal request again to the Government of Japan in May 1969.

After examining the request, the Government of Japan decided, in principle, to cooperate with Iran positively, not only because it will help the existing departments at the Centre but also because it will contribute to the agricultural development and will help equipment of Japanese manufacture used in the country. She is scheduled to send an implementation survey team of three experts to Iran from July 5 for about ten days.

(2) Expansion of the Telecommunications Training Centre in Thailand

Since the Centre, through Japan's cooperation, has achieved a great deal in the training and has come to be fully qualified as a technical college, both in name and reality, the Government of Thailand has raised the Centre to the status of a full 5-year university under the University Law of the Thai Ministry of Education and has renamed the Centre as the Nondhaburi Telecommunications University.

The existing training courses at the entre have become practical courses (three-year courses) and specialized subjects under the University curricula are to be taught in the last two years of schooling.

To this centre, the Government of Japan has continued to send experts under the Colombo Plan even after the expiration of the agreement in August 1965. On the other hand, the Government of Thailand has submitted, to the Government of Japan, a request to expand and improve the facilities at the centre, so that the Centre may be able to function both as a university of real substance and as a nucleus of the educational institutions to train workers in the telecommunications circles in Thailand.

Name of Overseas Technical Cooperation Centre	Cooperation Period	Type of Training	Expenses for Equipment and Principal Items Donated
Agricultural Technical Centre of Friendship between Japan and Cambodia	(Agreement of economic and technical co-operation) from July 6, 1959 to July 5, 1966 (Exchange of notes) from Oct. 1, 1966 to Sept. 30, 1969	Improvement of the quality and the cultivation techniques of rice Spread and extension of agricultural techniques, training of farmers. and mechanization of cultivation	(Under the agreement of economic and technical cooperation) fiscal year — thousand yen 1964 — 60,270 1965 — 5,650 1966 — 7,579 (Under the agreement of exchange of notes) thousand yen 1966 — 30,100 1967 — 2,159 Vehicles including tractors, bull-dozers; agricultural equipment, large-and small-type; equipment for research and experiment; fertilizers and agricultural medicines, etc.
Livestock Breeding Centre of Friendship between Japan and Cambodia	(Agreement of economic and technical co-operation) from July 6, 1959 to July 5, 1966 (Exchange of notes) from Oct. 1, 1966 to Sept. 30, 1969	Improvement and multiplication of the breeding stock and poultry Researches on measures for health and hygiene of livestock and poultry Researches on improvement of feed-stuffs Training of farmers Dissimination and extension of knowledge about livestock breeding	(Under the agreement of economic and technical cooperation) fiscal year — thousand yen 1964 — 87,100 1965 — 2,307 1966 — 4,184 (Under the agreement of exchange of notes) Fiscal year — Thousand yen 1966 — 19,900 1967 — 27,991 Vehicles & tractors; equipment for breeding control; equipment for research & experiment; seeds for feed-stuffs for livestock
Medical Centre of Friendship between Japan and Cambodia	(Agreement of economic and technical co-operation) from July 6, 1959 to July 5, 1966 (Exchange of notes) from Oct. 1, 1966 to Sept. 30, 1969	Medical examinations & treatments, dissemination & spread of hygienic thought, researches & experiments, etc.	fiscal year — thousand yen 1964 — 22,939 A mobile X-ray clinic, an X-ray apparatus, equipment for medical examination & treatment, equipment for research, medicines, hygienic materials fiscal year — thousand yen 1965 — 1,110 Medicines, equipment for operations fiscal year — thousand yen 1966 — 27,476 Materials for building additional sick-beds & wards, equipment for X-ray apparatus, medicines fiscal year — thousand yen 1967 — 42,842 Materials for building additional sick-beds & wards, equipment for internal treatment, materials for an X-ray apparatus, medicines
Training Centre for Small-Scale Industries in Afganistan	(Agreement) from March 15, 1961 to Sept. 14, 1965 (Under the Colombo Plan) from Oct. 24, 1965 to Oct., 1967	Technical training in three departments-bicycle assembling, glassware manufacture, plastic molding	thousand yen 73,886 Expenses for expansion — 6,500 Equipment for assembling bicycles, materials for glassware, etc.

Technical Cooperations Centres (as of March 31, 1969)

Progress in a Project		Number of Staff	Number of Trainees	
In Japan	In a recipient country		Graduates	Present Fixed Number
Supply of equipment to improve the centre undertaken in fiscal year 1967 Preparations for supplying equipment to the centre in fiscal year 1968 undertaken Future policies for management of the centre after the expiraton of the agreement period and dispatch of a survey team examined	Improvement of facilities and farms, display and demonstration of agricultural equipment Experiments and researches	(4) (Experts sent under the Colombo Plan)		
Supply of equipment to improve the centre undertaken in fiscal year 1967. Preparations for supplying equipment to the centre in fiscal year 1968 undertaken. Future policies for management of the centre after the expiration of the cooperation period and dispatch of a survey team examined	Improvement of the facilities, breeding control and multiplication of livestock and poultry, production of feed-stuff, utilization of dairy products	(6) (Experts sent under the Colombo Plan)		
After the expiration of the assignment period of experts sent under the agreement of cooperation, three experts have been sent under the Colombo Plan Additional equipment purchased and sent	Medical examinations & promotion of anti-tuberculosis measures	(6) (Experts sent under the Colombo Plan)		
On October 23, 1967, the management of the centre was completely transferred to the Afghan side				

Name of Overseas Technical Cooperation Centre	Cooperation Period	Type of Training	Expenses for Equipment and Principal Items Donated
Fisheries Training Centre in Ceylon	(Agreement) from March 20, 1961 to Sept. 19, 1965 (Under the Colombo Plan) from Nov. 11, 1965	Fishery department & marine engine department	thousand yen 29,310 Expenses for expansion 22,400 A fishery training vessels, fish finders, winch-rollers, etc.
Fisheries Products Processing Training Centre in India	(Agreement) from March 31, 1962 to June 30, 1967 (Under the Colombo Plan) from July 1, 1967 to June 30, 1969	Theories on marine products processing, canning & frozen provisions, fish sausages, training in the handling & assembling of various items of equipment, etc.	thousand yen 62,171 Expenses for expansion in fiscal year 13,000 Machinery & equipment for manufacturing canned & frozen provisions, etc.
Telecommunications Training Centre in Thailand	(Agreement) from Aug. 24, 1960 to Aug. 23, 1965 (Under the Colombo Plan) from Aug. 24, 1965 to Aug. 23, 1968	Training of Thai trainees in the establishment, operation & maintenance of telecommunications facilities Training of lower-and middle-class technicians, and raising the standards of existing technicians	thousand yen 104,736 Equipment for telephone exchange equipment for telegraph, etc. Equipment for Radio & TV broadcasting Expenses for equipment to be carried by experts 2,826 thousand yen
Farm Mechanization Training Institute in East Pakistan	(Agreement) from July 30, 1960 to July 29, 1965 (Under the Colombo Plan) from Jan. 29, 1966 to Jan. 28, 1968	At first, theoretical and practical training of agricultural extension workers in each district was undertaken in paddyrice cultivation and horticulture At present, training of technicians for agricultural equipment and training of government officials & farmers' sons undertaken	thousand yen 40,747 Tractors, cultivators, threshers, dusting equipment, equipment for experiment, etc.
Training Centre for Small-Scale Industries in Iran	(Agreement) from Sept. 12, 1960 to Sept. 11, 1965 (Under the Colombo Plan) from Jan. 29, 1966 to Jan. 28, 1968	Machining, finishing, assembling sheet metal working, welding (arc, argon, gas), casting, wooden-pattern making, plastic molding, plastic pipe-making	thousand yen 64,899
Virus Research Institution in Thailand	(Agreement) from Nov. 25, 1961 to May 24, 1966 (Under the Colombo Plan) May, 1966	Research on, and medical examinations of, virus diseases, culture of virus antigen for diagnosis, preservation of virus stock, manufacture and inspection of virus vaccines, training in such fundamental techniques of virus research as preservation and handling of virus, biological tests, cultivation, serum reaction, and manufacture and inspection of virus vaccines	thousand yen 68,872 An election microscope, equipment for serology research, equipment for tissue-cultivation method research, equipment for biological tests, equipment for ventilation, a mobile clinic, audio-visual educational aids
Technical Training Centre for Road Construction in Thailand	from Nov. 16, 1964 to April 15, 1968	Training and guidance given to Thai workers in design, construction and maintenance of roads, and operation of machinery and equipment used for road construction, utilizing a feeder road of about 52 kilometers' length from Samrong to Natawee In October 1968 whole road construction project completed	thousand yen 201,681 Various items of equipment including bulldozers, motor graders, road stabilizers, power shovels, dump trucks, etc. Expenses for additional equipment in fiscal year 1967 9,000 thousand yen

Progress in a Project		Number of Staff	Number of Trainees	
In Japan	In a Recipient Country		Graduates	Present Fixed Number
On September 12, 1967, the management of the centre was completely transferred to the Ceylonese side				
Purchase & supply of equipment to be carried by experts undertaken Preparations for purchases & supply of equipment to be carried by experts undertaken	A total of 107 trainees graduated up to the fourth period Graduates found employment in fishery research institutes & private enterprises The fifth period training being undertaken for 29 trainees	(4) (Experts sent under the Colombo Plan)	107	30
Preparations for purchase & supply of equipment to be carried by experts undertaken	The fourth period training program (3-year courses) completed —Practical Dept.—	(11) (Experts sent under the Colombo Plan)	181 361	99
On October 11, 1967, experts under the Colombo Plan returned home after the expiration of their assignment period Comprehensive reports prepared Training in language & techniques undertaken for two experts to be sent to replace returned experts Two experts left for the post in the middle of July	Training of agricultural extension workers in towns & villages in utilization of cultivators, etc. undertaken On September 7, 1968 the twelfth period training commerced to a total of 40 trainees (5 V.A.A.s' & 55 farmers' sons)	(4) (Experts sent under the Colombo Plan)	289	40
Three experts continued to be sent under the technical cooperation program for the Near and Middle East and Africa Comprehensive reports prepared	Even after the expiration of the cooperation period, three experts are continued to be sent and are conducting retraining with a view to improving techniques	(3) (Experts sent under the technical cooperation Program for the Near and Middle East and Africa)	142	56
Purchase & sending out of additional equipment undertaken Dispatch of experts to replace returning ones	On September 6, 1962, researches commenced Contribution to researches on preventive medicine in Thailand, training of Thai research workers, cooperation in research & guidance to research institutes Since May 1966, experts have been sent under the Colombo Plan	(4) (Experts sent under the Colombo Plan)		
Dispatch of a survey team on future management policies Purchase & sending out of additional equipment undertaken in fiscal year 1967 Preparations for the above in fiscal year 1968 undertaken	Mainly practical training undertaken in actual road construction processes Cooperation to be extended up to November 1968	(9)	138	30

Name of Overseas Technical Cooperation Centre	Cooperation Period	Type of Training	Expenses for Equipment and Principal Items Donated
Technological & Development Centre for Cottage & Small-Scale Industries in the Philippines	from Sept. 29, 1966 to Sept. 28, 1970	Forging, small machine parts manufacturing, ceramics, textile fiber-craft & weaving, bamboo and rattan-craft, wood-craft, consultating & researches	fiscal year 1966 thousand yen 49,907 Equipment for forging, equipment for ceramics, steam-hot presses for bamboo works, equipment for wood and bambroo-craft Expenses for additional equipment fiscal year 1967 thousand yen 7,384
Telecommunication Technical Training Centre in Mexico	from July 25, 1967 to July 24, 1971	Microwave, automatic telegraph exchange, radio communication, carrier transmission, design of telephone network system	fiscal year 1967 thousand yen 80,000 Equipment for automatic telegraph relay exchange, equipment for radio communication for coastal ships, crossbar switching system for training purpose, for within-the-city calls as well as long-distance calls, various measing instruments, short-wave radio communication equipment (for transmitting and receiving)
Prototype Production & Training Centre in Singapore	from Oct. 15, 1966 to Oct. 14, 1970	Machine working shop, tool and die working shop, heat treatment shop, design and drawing shop, welding shop, forging shop and electroplating shop	fiscal year 1967 thousand yen 125,000 Lathes, universal milling machine and other machine tools Electro furnaces, drawing instruments, others
Vocational Training Institute in Uganda	from June 28, 1968 to June 27, 1972	Machine, sheet metal working, welding and flamecutting, machinery fitting, electrical fitting and wiring, motor vehicle machanics	fiscal year 1967 thousand yen 155,000 Lathes and other items of equipment
Kyung-puk Institute of Technology in Korea	from Oct. 25, 1967 to Oct. 24, 1971	Machine fitting, sheet metal working welding and forging, casting, chemical analysis	fiscal year 1967 thousand yen 7,600 Lathes and other items of equipment, chemical equipment
Technical Training Centre for Textile Industries in Brazil	from March 28, 1962 to July 23, 1968	Blowing, carding, combing, drawing and roving, spinning and twistling, preparing for weaving, testing, and quality control	thousand yen 79,987 Spinning and weaving equipment, etc. Expenses for additional equipment thousand yen 2,545 Raw cotton testing equipment, etc.
Textile Training Centre in Ghana	from May 23, 1963 to May 22, 1970	Training in the production of cotton textiles and towels dyeing and finishing of cotton fabrics	thousand yen 51,863 Blower and boiler equipment and six other items of equipment, audio-visual educational aids
Agricultural Extension Centre in India (first)	from March 5, 1968 to March 4, 1972	Training of agricultural extension workers, etc. and practical tests	Tractors, cultivators, powered grain threshing machine, power sprayers, etc. equipment for experiment (planned)

Progress in a Project		Number of Staff	Number of Trainees	
In Japan	In a Recipient Country		Graduates	Present Fixed Number
Experts for the textile course provisionally selected To be sent in the middle of Feb.	Centre buildings under construction Preparations for installing equipment undertaken To be opened in 1969	10		
One expert in charge of installing equipment returned home One expert to replace the returning expert sent out	3-course training program undertaken Installment of equipment completed & thorough check-up undertaken Annual program prepared Not whole but a part training program is undertaken by Japanese experts	8	100	25
Purchase and sending of additional equipment (30 million yen) being undertaken Experts in electroplating to be sent on Feb. 6	Training in prototype production started, manufactive of a small-type bench drilling machine undertaken, production of a lathe is to be commenced in the near future Opening ceremony to be held on Feb. 4	11 (Experts sent under the Colombo Plan)		100
Preparations for purchase of equipment undertaken	Agreement signed on June 28 between Mr. Urabe, Ambassador of Japan and Mr. Okae, Minister for Planning & Economic Development	(10) (planned)		
Supply of additional equipment under examinations	Opened on October 30, 1968	4		102
80 million yen appropriated in budget for fiscal year 1968 for the establishment of dyeing & final processing department Purchase of equipment undertaken	After opening in July 1965, 4-month course conducted in automatic loom department The second period training conducted for four months from March 2, 1966 in six courses for 50 trainees; The third period for four and a half months from August 16, 1966 for 34 trainees; The fourth period from February 13, 1967 for 56 trainees (one trainee left half-way on account of illness); The fifth period completed on Dec. 22, 1967 for 28 trainees; The sixth period from June 1967 to June 20, 1968 for 33 trainees; The seventh period from Aug. 5, 1968 to Jan. 20, 1968 for 45 trainees	3	260	
One textile expert assigned on Dec. 20 All replacing experts assigned; Mr. Nobuta, one of the experts extended his assignment period and took home leave, the travel arrangement for him being made Preparations for purchase and supply of additional equipment underway	Workshops completed Electrical wiring completed; Waterworks and draining works completed The first period training completed in June 1967; All graduates in a junior course; Training commenced on Aug, 5; The second period training being undertaken for 55 trainees from Oct. 15	4	22 (junior course) 55 (junior course second period)	
Experts sent on July 6, 1968 Bids for equipment under preparation	Preparations for extension training program underway, in cooperation with provincial governments	6		

Name of Overseas Technical Cooperation Centre	Cooperation Period	Type of Training	Expenses for Equipment and Principal Items Donated
Agricultural Extension Centre in India (second)	Agreement being negotiated	Training of agricultural extension workers, etc. and practical tests	Tractors, cultivators, powered grain threshing machine, power sprayers, equipment for experiment, etc.
Telecommunication Research Centre in Pakistan	from Nov. 16, 1963 to June 30, 1969 (extended)	Development of telecommunications (wireless telecommunications, carrier transmission, telephone exchange, telegraph) systems best suited to the country Practical researches on the improvement of the efficiency of communications facilities to render better services in an economical way Guidance on the introduction of technology	thousand yen 58,700 Equipment for wireless telecommunications, carrier transmission, telephone exchange, telegraph, electric power source, testing, trial production, audio-visual educational aids, vehicles Expenses for additional equipment fiscal year 1967 thousand yen 35,000
Training and Research Centre for Small-Scale Industries in Kenya	from July 30, 1964 to July 25, 1970	Technical training course, millwrights, electric components and machines, tailoring and dressmaking and joinery, leatherworking, assembling and repair of small machinery and equipment Management training course, management dept. research dept.	thousand yen 54,623 Expenses for equipment for six departments such as mill-wrights in the technical training courses and audio-visual educational aids thousand yen 1,420 Expenses for additional equipment in fiscal year 1967

OTCA has recognized the need not only to improve the standards of the Centre to truly qualify as a university, but also to replace some of the obsolate donated equipment used in the practical courses. Considering the most outstanding achievements this Centre has made among all the overseas technical cooperation centres that Japan has cooperated in establishing, OTCA has decided to expand and improve the Centre and has been planning to cooperate in turning the Centre into the nucleus of the educational institutions in the telecommunications field in Thailand.

4. Centres Established under the Multilateral Agreement

Southeast Asian Fisheries Development Centre.

The establishment of the Southeast Asian Fisheries Development Centre was proposed for the first time at the first meeting of the Ministerial Conference for the Economic Development in Southeast Asia held in Tokyo in April 1966. Later, a working group was formed and studied various problems related to the establishment of the Centre. In March 1968, the inaugural meeting of the Council was held in Bangkok and the project for the establishment of the Centre was formally commenced.

The Centre is to be established and run under the multilateral agreement by the six participating countries —Thailand, Singapore, the Philippines, the Republic of Viet-Nam, Malaysia and Japan — and undertakes the training of fishery technicians and the research on fishery resources.

The Training Department has been established at Paknam in Thailand and is chiefly designed to conduct the training of fishery technicians and to study fishing implements and methods. Training is to be conducted to provide trainees with practical skills, especially in the handling and operation of fishing implements, marine engines and nautical instruments, not to mention theoretical studies.

The Research Department has been established in Singapore and is chiefly designed to exploit a fishing ground and to carry out researches on fishery resources and oceanic surveys. Special emphasis is to be placed on the exploitation of new fishing grounds through trial operations.

Japan has made a contribution in cash amounting to 264,873,000 yen in the two years, 1967 and 1968. This fund is to be used for the purchase of the following vessels and equipment necessary for the establishment of both the Training and the Research Depart-

Progress in a Project		Number of Staff	Number of Trainees	
In Japan	In a Recipient Country		Graduates	Present Fixed Number
Plan of operation prepared Budget for operation prepared Specifications for equipment under preparation Preparations for the selection of experts and for their orientation	Training is to commence from the dry-season crop in December	(8)		
Purchases of additional equipment (in fiscal year 1968) being undertaken	Much achievements being made in both researches and training of Pakistan staff Expansion to double the size of the centre including the staff being planned Agreement period to expire on June 30, 1969	6		40
Ten experts replaced between Dec. 1967 and Oct. 1968, hand-over of duties completed at the centre Purchases and sending out of additional equipment completed Arrangements for the extension of the agreement completed Travel arrangements for two members of the experts' dependents being made Supply of additional equipment amounting to twenty million yen under examinations	April, 1966, the first period of 9-month training program including lectures in management completed for 49 trainees in six departments The second period undertaken from Aug. 15, 1966 for nine months for 47 trainees The third period undertaken from Aug. 7, 1967 for nine months for 54 trainees Agreement extended for further two years	11 (1) Figures in ( ) are the number of experts sent under the Near and Middle East Program	150	44

ments.

1) One each of a training vessel and a research vessel (about 350 gross tons with 1,000 horse power each).
2) Various items of equipment and materials for research and training fishing implements and methods.
3) Scholarships for trainees (4,630,000 yen for fiscal year 1968).
4) Dispatch of a total of twenty-one experts (twelve for the Training Department and Nine for the Research Department).

Entrusted by the Fisheries Development Centre, OTCA is to make purchases of the above vessels, equipment and materials in Japan and concluded the "contract on the purchases of a training vessel and a research vessel as well as equipment and materials on behalf of the Southeast Asian Fisheries Development Centre" in Bangkok on July 5, 1968.

Under the above contract, OTCA has made purchases of vessels, equipment and materials since July 1968. Both the training and the research vessels were launched in May 1969 and were completed in August. The training vessel left for Bangkok while the research vessel left for Singapore.

A part of the equipment and materials were loaded on a ship in January 1969.

As to the dispatch of Japanese experts, a total of seven experts (two experts dispatched in June 1968 and five more sent out late in March 1969) are now with the Training Department in Thailand, while two experts have been sent to the Research Department in Singapore at the end of March 1969.

Section 3. Problems on the Work of the Overseas Technical Cooperation Centres and Its Future Prospect

The work of the Overseas Technical Cooperation Centres has now passed about ten years since its first project; namely, the project of the establishment and operation of the Agricultural Technical Training Centre at Dacca in East Pakistan. During these ten years, our review of the actual results of the cooperation on the centres has helped us solve several of the confronting problems. In this section, we shall give a general description of the problems to be solved through the cooperation by both Japan and the recipient countries, those to be solved by the former alone, those to be solved by the latter through their self-help efforts, and finally the future prospects of the work on Overseas Technical Cooperation Centres.

1. Problems

(1) PPROBLEMS COMMON TO JAPAN AND THE RECIPIENT COUNTRIES

(A) Preliminary Investigation

There are many cases when the causes of the problems confronted during the process of the establishment and operation of a centre are considered to have existed already during the stage of the preliminary investigation for the cooperation.

For example, the government authorities of the recipient country had a low evaluation of the centre, the fund for the operation had been deficient, the schedules and contents of the training and the subject matters of research had not been appropriate and the counterpart had not been available in sufficient number and quality. Taking into account the existing situations in the recipient countries such as financial difficulties, complicated organization of the government structure and shortage of specialized people in the relevant fields, we still consider that the preliminary investigation and review with regard to the questions as listed below were not sufficiently covered by both Japan and the recipient countries.

1) Whether, in the stage of the preliminary investigation and planning, a sufficient study had been made between Japan and the recipient countries as to the priority which the centre project occupied in the overall development program of the recipient government, its relation to other projects, the backgrounds and the motives for formulating the project, the purposes for setting up the centre, and so on.

2) Whether, in the stage when the project was examined by Japan, a multiple analysis had been made on its economic aspects, technical questions, conditions and circumstances of the location, etc., on the basis of a preliminary investigation which were carried out on the spot for a reasonable period of time, not merely on the basis of desk information in Tokyo, before the necessary amount of budget was calculated or concrete measures of cooperation were formulated.

3) Whether the necessary expenses in the forthcoming operation stage of the centres, the implementation schedules of the annual programs and the schedule on the transfer of the centre to the recipient countries had been fully examined by the recipient governments. And whether the respective areas of responsibility for Japan and recipient countries had been considered in detail by the both parties.

4) In the stage of the preliminary investigation, what sort of an organ for formal consultations between the both parties had been studied to take care of the forthcoming operation of the centre? The essential is to establish a centre which is the most suitable for the prevailing situation in the recipient country.

It goes without saying that when a centre is to be set up, sufficient consideration should be given to various conditions of the recipient country, such as economic, social and natural. Particularly, review is necessary on the trends of the industrial development, the financial conditions, the future prospect of the international balance of payment, the technological levels, the educational levels and the government structure. In the case of some of the existing centres faced with many problems, we find that there had been a lack of attention to the actual circumstances in the recipient countries, and that our preliminary works had been carried out in the same way as for projects in Japan, which is now deeply questioned by the people concerned. Again we say that consideration must be given to the establishment of a centre suited to the prevailing conditions in the recipient countries. As a flexible way of cooperation, it would be necessary that, when the recipient country has a shortage of technical experts or planners to push forward the idea of a centre, we should send experts to cooperate in the materialization of the idea. In the fiscal year 1968, for example, with regard to the Vocational Training Centre in Uganda, an establishment which had been delayed by the lack of technicians there, we sent experts to expedite the formulation of the project; and later, sent experts on steel frame for the construction of the centre building. Also, in the case of the Telecommunication Centre in Iran, a set-up we are cooperating under the budget of the fiscal year 1969, we invited to Tokyo the top officer in charge for full technical consultations, after our preliminary investigation mission had returned here; and later with the idea of coping with the shortage of architects in Iran, we sent there experts in that field for about 2 months to cooperate in drawing up a plan for the centre building.

Through these positive measures, the establishment of newer centres have been going on without hitch.

Such cooperation with the recipient countries already in the preparatory stage for the establishment of centres enables our country to grasp clearly the backgrounds of the project such as the position it occupies in the overall development program of the country. Moreover, it enables our competent authorities to request for a precise budgetary appropriation on the basis of a detailed preliminary investigation, and thus, to discontinue the present rough allocation of funds, in tens of millions of yens or hundreds of millions of yens for one centre, at a stage when the preliminary investigation has not been made.

(B) Period of the Agreements

The period of the agreements on centres, that were established and are now in operation under our cooperation, is in principle for 3 years. In many cases, the period is extended by to 2 years; and thus, it totals to 5 years at the longest. In some of the centres, the initial period of the agreement was spent in the preparatory work such as the construction of the centre buildings, and it was at the close of this initial period of three years when the centres were opened.

To have a fixed period for the agreement may be necessary to enable us to have a target date for our cooperation to be completed, and also to help the recipient countries bear in mind that the time for their self-help efforts should be begun with their autonomous operation of the centres. With regard to the centres, particularly, those which require a considerable period of time for buildings construction, or which put heavy financial burdens on the recipient governments, we should consider fixing the period of agreements at 5 years, and extending them by 2 or 3 years when the necessity arises. This would make it easier to send the equipment just when the centre buildings are constructed, and to make sufficient preparations for the dispatch or replacement of experts. The multilateral agreement for cooperation on the Southeast Asian Fisheries Development Centre is in force for 10 years. With regard to some of the centres under our cooperation alike, we consider that about a 10 year period of cooperation is necessary. It may be suggested that Japan and the recipient countries should fully consider making the agreement on a long term basis, according to the situations in the recipient countries and also to the kind of industry to be tackled with by the centres.

(C) Scale of the Budget by Japan and the Budgetary Appropriation in the Recipient Countries

The recent trend is that we are asked to cooperate for a larger scale of projects, since expectation for assistance from Japan is getting higher, and also the scale of projects under assistance of UNDP or other developed countries are becoming larger.

The fact that the projects on centres are larger in scale means that they are highly evaluated among the various development projects of the developing countries, and that ample consideration is being paid by the government to the budgetary appropriation for them. However, there are cases when the self-help efforts such as the acquisition of the land and the construction of the centre building do not go on as expected, owing to inadequate administrative ability of the governments or the lack of technical experts to work for the projects.

To cooperate in avoiding a delay on projects caused by the factors as mentioned above, Japan is considering an amendment to the relevant laws which will permit her to donate government-owned real estate. If facilities such as a centre building can be donated, and in addition, the consumption goods and raw material necessary for training and research can be donated, the effect of our cooperation will be more accelerated. From now on, it is considered, not only an increase in the number of centres, but also the establishment of large-scale centres of good quality should be promoted. In the case of the recipient countries, advanced in development and well prepared to receive assistance, we must raise the level of the centres and provide them with sufficient equipment. On the contrary, with regard to the recipinet countries retarded in development and lacking in financial capacity or in foreign currencies, there are many cases, owing to the present principle that the land and the building should be paid for by the recipient countries, that are long delayed in the opening of the centres because of a delay in the construction of the facilities.

Accordingly, it may be necessary in the future to refrain from applying, according to the ability of the recipient countries, uniform principles for all of them; and to provide them assistance including the donation of the buildings, as other developed nations do under their own aid programs. There is one precedent of this kind, which is when we donated construction material to the Vocational Training Centre in Uganda.

(D) Transfer of the Centres to the Recipient Countries

Among the centres on which the agreement has expired, those already operated by the recipient countries alone are the Fishery Training Centre in Ceylon and the Marine Products Processing Training Centre in India. Others are still receiving our cooperation through the dispatch of experts under the Colombo Plan.

The centres are supposed to be transferred to the recipient countries after the expected objects have been achieved. However, many of the centres find it impossible to put an end to the cooperation from Japan, in view of needs for supplementary equipment and their staffs' lack in technical or operational ability. Even after the expected objectives have been fully attained, there may arise needs for additional and expanded cooperation. Such being the cases, and also with a view to avoiding the transfer of the centres without completing the work, it would be necessary to consider an annual program of transferring gradually, specific sectors of the centres after completing the training of the counterpart working in those sectors.

The solution of the problems as mentioned above requires mutual efforts between the both parties.

(2) PROBLEMS ON THE PART OF JAPAN

(A) Restriction from the budget system

In the case of establishing a new centre, we have, under the present budget system, to complete, in principle, within 2 years the dispatch of an investigation group, the formulation of a concrete cooperation program, the transportation of equipment to the spot and so on. However, there is considerable difficulty in doing all the preparatory work within 2 years, in view of the period of investigation by the group, the period for reviewing the draft cooperation program, the period of time necessary until the agreement is signed, the period for drafting the specifications of the equipment, the period for its delivery, and so on. In order that a series of this preparatory work on our part may proceed without a hitch, the preparation on the part of the recipient countries such as the acquisition of the

land and preparatory work for the construction of the building must go along smoothly. When we reflect upon several delayed projects in the past, we find that in most cases, the delays were attributable to the recipient countries, which had not been well prepared to receive the cooperation.

There have been cases that, in order to avoid the procurement of equipment in March, the last month of our fiscal year, the order was postponed April, or the following fiscal year. But this is not a good practice, judging from the viewpoint of timely transportation of the equipment to the centre, which would make the function of the centre more effective. If, in addition to the present budget system of transfer of funds to the following fiscal year, a flexible execution of the budget were done to permit an order to be made for equipment in March and its delivery to be made in April or later, the work of the centres could be more effectively stepped up, and also the time lag arising from the difference in the fiscal year between Japan and the recipient countries could be avoided.

(B) Establishment of a system for securing capable staffs

Whatever equipment of good quality may be donated, we could not make satisfactory cooperation unless we get Japanese staffs high in personality and also in expertise, who can train the students and can lead them in research, development and production.

In the case of centres, apart from the dispatch of an individual specialist, plural experts in different specialized fields are expected to lead organized activities as a group. Such being the case, they must not only maintain good human relation with each other, but must get respect and trust from their counterpart, trainees and researchers.

To secure capable Japanese experts we must improve the employment conditions such as salary, living conditions on the spot, the guarantee of their status; and furthermore, we must give them sufficient training before they are sent abroad.

In the present Japanese society where people work for the same employer all through their life, the question of how to pull out capable experts from their present job and to place them on suitable posts; and how to set up and consolidate the appropriate personnel system for this purpose are part of the many problems to be urgently solved.

In this connection, it would be necessary that Overseas Technical Cooperation Agency should consider the way of positive utilization of the experts after they have returned to Japan, as technical instructors for individual foreign trainees in Japan or as instructors for their group courses.

(3) PROBLEMS ON THE PART OF THE RECIPIENT COUNTRIES

(A) Establishment of an organ for the operation of the centres and the securing of budgetary appropriation for them

If the competent government authorities or the agency executing the projects are not well organized, or there is a lack of coordination between the relevant authorities or agencies, the operation of the centre does not go on smoothly. These demerits may affect the formulation of the annual operation program and training program of the centres. There are some centres where training or research is affected by a delay in the allocation of the annual funds, or by a hitch in the execution of the budget.

In order to follow up such problems requiring autonomous efforts on the part of the recipient countries, it would be necessary to set up a joint consultative committee on centre operation between Japan and the respective recipient countries, and through the committee, to carry out full cooperation for the centre operation during all its operational processes from the initial point when the annual program is formulated up to the time when the cooperation is terminated.

Furthermore, according to the financial difficulties in the recipient countries, we may have to consider a way of sharing the operational cost to some extent.

(B) Placement of right counterpart on right posts

The most important factor in our cooperation for the operation of the centres and our later transfer of them to the recipient countries is whether the counterpart from the latter countries (assistant instructors, researchers etc.) is sufficiently capable to take charge of the technical operation of the centres.

It is most desirable that during the cooperation period, the conuterpart becomes capable enough to do without cooperation from us. This is a problem concerning the capacity of the individuals, and at the same time it relates to the personnel administration policy of the authorities responsible for the project.

As examples of the centres having no problems, we may count the Prototype Production Centre in Singapore and the Industrial Training Centre in the Republic of Korea. These countries have enthusiasm for receiving technical assistance, are well prepared to do it, and thanks to their technological level, can get qualified technicians rather easily, and have put proper experts in the centres as counterpart. Such being the cases, there is now no problem in transferring these centres to the respective countries so far as the staffs' ability is concerned.

On the contrary, many centres including the Textile Industry Centres in Ghana and Brazil and the Small-Scale Industry Centre in Kenya are facing difficulties concerning the counterpart. The main reasons are the easy feeling of dependence that these countries have in Japan, the lack of the administrative capacity to cultivate men of ability, and the lack of qualified technicians inside the countries. Since little effort has been made to solve these basic problems, there are cases

where the counterpart who were trained in Japan quit his job over dissatisfaction in pay or in the environment of the centre (For example, those in the local centres drain out to the cities).

This may be due to the general shortage of technicians in the developing countries. But at least during the period of cooperation, we must give sufficient training to the counterpart. Not only through training them on the spot, but also through a positive application of the system of inviting them to Japan for training again, we should be well prepared to transfer the centre to the recipient countries.

With regard to receiving the counterpart in Japan for training, it may be necessary, according to the situation in the recipient countries, to change the present method of receiving the counterpart in Japan before the centre is opened, into that of recruiting and training them in the recipient countries after the centre is opened, with a view to being more prudent on the criteria of selection, the time of recruiting and the contents of training. This would help the counterpart stick to the job. On the other hand we believe that we should try to have the authorities of the recipient countries fully recognize the importance of the counterpart, and we should urge them to secure qualified people as the counterpart in order to avoid confusion in the future training program.

We have mentioned above the various problems under each heading. But we know of many cases that even after a full preliminary investigation and review of its results have been made, the subsequent changes in the situations within the recipient countries have caused difficulties in training; for example, due to the shortage of funds for material and operation which is borne by the recipient countries. Therefore, in order to make the centres more effective, it is necessary to continue a sufficient after service on the operation of the centres. During the period of operation, we must not only keep good communication with the centres, but must be well prepared to make investigation on the actual situations on the spot. Furthermore, when the centres come across with problems on the equipment or replacement of experts, or when the centre takes up a new program, it is essential to send our staffs there to attack the problems.

Moreover, although it is a principle that the operational cost of the centres should be met by the recipient countries, it would be necessary for us to consider our sharing of part of the cost, according to the economic situations in the recipient countries, since the shortage of fund for operation often affects the training, the management of the centre, and finally its effectivity.

The formulae of cooperation for the centres are stipulated in the respective agreements for each centre. According to them, the cooperation should depend upon the equal efforts of our country and the recipients, and therefore, positive development of cooperation on the part of Japan as well as sincere self-help efforts on the part of the recipient countries are continually urged.

2. Prospects for the Future

In the transition toward the quantitative expansion of and the qualitative improvement in, the various technical cooperation plans, the Overseas Technical Cooperation Centre project is deepening its relationship with the other technical cooperation projects and is expected to play a major role as the nucleus of various large-type projects in the near future. For example, in the cooperation on large-scale comprehensive agricultural development projects, more emphasis should be placed on the plan to provide a centre to undertake various researches and experiments on the improvement of varieties and the stamping out of damages by blight and harmful insects, or to encourage the wide use of new agricultural techniques. In the cooperation on industrial development projects, greater weight should be attached to technical instructions in medium and small-scale industries as well as light industries, practical guidance in management control, development of new products and improvement in productivity. Moreover, the cooperation on projects in the mining field should more positively be promoted. In the cooperation on the improvement of infrastructure, emphasis has so far been placed on the development of new researches and their practical application in the telecommunications field, but cooperation should also be extended to the transport field, such as in developing various researches on the modernization and construction of ports and harbors, railways and roads.

It is essential not to adhere stubbornly to the uniform way of carrying out the technical cooperation centre project, but to develop more originality so that the plan can be improved, in tune with the trends of extending more effective technical cooperation.

Described below in this section is how the plan in the future should be, with the problems of the plan already given in the previous section.

(1) Positive extension of cooperation in the existing technical training facilities in recipient countries

Priority has so far been given in extending cooperation to projects where the recipient country is to establish new facilities to train technical manpower, undertake researches or production or to encourage the adoption of better techniques. This has compelled the recipient country to shoulder a heavy burden as a demonstration of her self-help efforts, and it has often entailed financial difficulties and manpower shortage in the recipient country. Many cases could be cited showing much time has been consumed and difficult obstacles have been brought about on account of these obligations of a recipient country.

It is true that the cooperation in new projects could not only demonstrate Japan's cooperation vividly, but

also bring about a commemorative achievement. However, it would compel a recipient country to make a considerable sacrifice.

In developing countries, there exist a considerable number of educational and research facilities, though underdeveloped and in need of improvement. These facilities are not fully made use of, because of the lack of funds for operation, teaching and research staff, equipment and materials, etc. The need to improve these facilities has been pointed out in various study reports made by the Colombo Plan Secretariat or the ECAFE Secretariat.

As a new method of cooperation in the future, further efforts should be directed to improve these existing facilities by way of supplying equipment and materials and by sending a group of experts as instructors.

The first of its kind in this direction is the Southeast Ocean Fisheries Development Project in Indonesia, begun under the budget for fiscal year 1968, under which various items of equipment are to be supplied and experts are to be sent out to various existing fishery research institutions in Indonesia. Thus, Indonesia's financial burden to provide land and to construct new buildings are alleviated; and it is greatly hoped that the project will be promoted smoothly in the future.

(2) Extension of cooperation to regional joint training and research institutions

Some examples of such regional joint training or research institutions are the Southeast Asian Fisheries Development Centre established at the initiative of Japan; the International Rice Research Institute, famous for its development of the IRR 18 high-yielding variety, established in Manila with the assistance of the Ford Foundation; and the Asian Institute of Technology. Positive cooperation with such regional joint training and research institutions should be conducted, since these institutions were established to undertake researches on possible solutions on problems which some neighboring developing countries are also confronted with and which are of deep common interest.

Improvement of various facilities connected to several projects promoting a regional solidarity consciousness, such as the Asian Highway Project, the Lower Mekong River Basin Development Project, the Asian Railway Project, or port and harbor development projects in many countries in the region, is to be taken up as a project of major concern.

Considerations should also be paid to the extension of Japan's cooperation in rendering national representative facilities (owned by each country) for the use of neighboring countries.

An example in this direction could be seen in that the participation of Ceylonese technical trainees was realized, by the fellowship provided under India's Colombo Plan, to undertake researches at the Mangalore Marine Products Processing Training Centre in India, established under Japan's cooperation efforts. There also are indications that request for joint training from East African Community members are forthcoming to the Training and Research Centre for Small-Scale Industries in Kenya.

More efforts should be made in the future so that Japan's cooperation in this field may more positively be taken up at all international conferences on development.

(3) Further application of the centre plan to cooperation in research-making fields, and establishment of, or improvement in, the domestic set-up in Japan (for this purpose)

The training of technical skills have so far been taken up as a major pattern of cooperation under the centre approach and inadequate assistance has been provided in the research-making fields. It goes without saying that cooperation in the field of technological development in developing countries should be provided from the two angles—that is, both scientific and technological—, and fuller achievements in technological fields could not be expected unless adequate attention is paid to the scientific side as well.

Accordingly, it is necessary to increase the share of cooperation in research-making fields in the future centre plans.

The Telecommunication Research Centre has already been established at Haripur in West Pakistan for the purpose of modernizing the country's extensive telecommunications facilities. Establishment of centres of similar nature should be taken up in other fields as well.

Cooperation merely by supplying equipment and materials, and sending experts overseas would not be adequate in order to make such centres successful. It is also necessary to develop the domestic set-up in Japan so that suitable solutions may be provided to various scientific and technical problems to be confronted from time to time in developing countries, taking into full consideration the prevailing local conditions in these countries.

For example, the British Ministry of Overseas Development has referred the locust eradication measures to various research institutions in London, and the United States Agency for International Development has established the set-up to secure the cooperation of universities and research institutions in the United States. It is necessary for Japan to tackle positively this problem of establishing and developing a channel to enlist the assistance of research institutions so that various problems confronted by overseas technical cooperation centre may be studied and solved.

(4) Step-by-step extension of the large-scale "centre cooperation plan"—adoption of cooperation for small-scale projects—

In providing step-by-step assistance under the "centre

cooperation plan," the usual way of providing the greater portion of the total amount for assistance just after the project has commenced should be improved and transformed so that the scale of Japan's assistance may be expanded gradually in accordance with the self-help efforts made by a recipient country.

When expansion of the scale is to be undertaken on a project started with the dispatch of experts or the supply of equipment, the small-scale centre method should be applied to the project at an appropriate time as the project matures, followed later by the medium and large-scale cooperation centre plan the method usually adopted heretofore. As a good and concrete example of this kind of step-by-step cooperation approach, the Telecommunication Technical Training Centre in Mexico may be cited. Expansion and improvement of an Industrial High School in El Salvador and a Fishery High School in Turkey are other examples where this step-by-step approach was applied.

(5) Positive extension of technical consulting activities to Overseas Technical Cooperation Centres

To centres currently under management cooperation, the dispatch of a team of technical experts at regular intervals of time should be considered.

This is particularly true of centres in fields where technical innovations are undergoing at a rapid pace. A group of high-level experts should be sent out to these centres for a certain period of time in order to give consulting services, to provide exact instructions and to contribute to the efficient management of the centres.

In some cases, a team of technicians should also be sent out to repair or maintain various items of equipment donated to the centres so that the centres may be managed at the very high standards.

Further (as the requirements may arise), local management staff as well as Japanese experts at the centres should be invited to one place to hold a conference and discuss various problems in both the technical and the management field as a positive means to achieve the efficient running of the project.

CHAPTER 5

DEVELOPMENT SURVEY (Pre-Investment Survey)

Section 1. Outline of Development Survey (Pre-Investment Survey)

The development survey which is part of Japan's technical cooperation on government-to-government basis was started in fiscal 1957. And it was after fiscal 1962 when Overseas Technical Cooperation Agency was founded that full-scale surveys came to be provided with budget appropriation for this work increased.

The plan is designed to extend technical cooperation on the so-called project basis to developing countries with the aim of contributing further to their development projects of public nature by sending our survey missions consisting of expert engineers required of such projects at the request of the governments concerned and arranging for the results of the field survey to be submitted to the recipient government as recommendations of the Japanese Government.

The purposes of the development survey cover a varieties of fields including roads, bridges, river developments, city planning, railways, ports and harbors, airports, underground railways, city transportation, telecommunications, manufacturing industries, mining industry, electric power, smaller enterprises, water supply and drainage and regional development, but many of the surveys are related to the so-called "infrastructure sectors" of the economy. The stages and contents of surveys vary according to the kind and content of each development project for which the survey was requested by the recipient country. The scope of surveys ranges from the so-called "preliminary," "reconnaissance" survey to basic survey or pre-feasibility survey which is aimed at working out a basic plan and setting up the direction of the project concerned. Determining whether or not the project is worth being carried out is the "feasibility survey" which establishes a detailed construction program as well as a management program for a development project and submits to the recipient government the conclusions or recommendations on technical and economic feasibility and the justification for the project. Furthermore, effective fiscal 1968, we are providing "detailed design survey" which prepares data required to begin work on an authorized project and is more of a draft execution program for the work concerned rather than a mere survey.

Since these surveys generally take the form of technical cooperation on a government-to-government basis, all necessary expenditures are in principle to be borne by the Government of Japan, with funds made available from the budget of the Ministry of Foreign Affairs (expenditures on survey for pre-investment and feasibility, expenditures on survey for development projects in the

Lower Mekong Basin, expenditures on survey for the Asian Highway Construction Project and expenditures on detailed design survey for economic development projects) and also from the budget of the Ministry of International Trade and Industry (expenditures on surveys for overseas development projects). The said surveys for pre-investment and feasibility, surveys for overseas development projects and detailed design surveys for economic development projects are conducted on the basis of bilateral consultation between Japan and the recipient country concerned, while the survey for development projects in the Lower Mekong Basin and the survey for the Asian Highway Construction projects are conducted on multilateral basis or in cooperation with many other countries.

The Development Project for the Lower Mekong Basin was launched in 1957 through the cooperation of 26 governments, 16 U.N. agencies and various foundations and private concerns under the sponsorship of the Mekong Committee of ECAFE (i.e. The Committee for Coordination of Investigations of the Lower Mekong Basin), and Japan has participated in this Project since 1958, before the founding of Overseas Technical Cooperation Agency. OTCA surveys so far has covered such surveys as Survey for major tributaries, Survey for the Nam Ngum Project, Survey for Sambor Development Project and Survey for the development of the area around the Great Lake.

On the other hand, the Asian Highway Construction Project aims for the construction of an international highway network extending over a total length of 55,000 kilometers from the Turkey-Iran border in the west through Saigon and Singapore to Indonesia in the east, having a total affected area of 5,500,000 square kilometers. At present, the Project is being pushed forward under the Asian Highway Coordinating Committee of ECAFE. Ever since Japan expressed full support to this Project at the 18th Plenary Session of ECAFE which was held in 1962, she has been extending her cooperation by dispatching experts and technical survey teams.

From the foundation of OTCA up to the end of March 1969, Japan sent out 150 survey teams consisting of 1,166 members. Out of the 150 surveys so far carried out by Japan, Southeast Asia accounts for 100, heading the list, followed by the Central and South America with 30 and the Near-Middle East and Africa with 20. As regards the fields of survey, electric power, agriculture, manufacturing industries, bridges, ports and harbors and telecommunications were major areas.

Section 2. Examples of Development Surveys in Fiscal 1968

In fiscal 1968, a sum of 102,300,000 yen was appropriated in the budget as expenditures for surveys on pre-investment and feasibility, a sum of 86,660,000 yen as expenditures for surveys on development projects for the Lower Mekong Basin, a sum of 30,040,000 yen as expenditures for surveys on the Asian Highawy Construction Project, a sum of 100,000,000 yen as expenditures for detailed design surveys for economic development projects and a sum of 88,350,000 yen as expenditures for surveys on overseas development projects, totalling a sum of 407,350,000 yen, with a total of 27 survey teams sent out.

It should be particularly noted that four detailed design surveys were performed with the fund appropriated for that purpose effective from fiscal 1968 as expenditures for detailed design surveys of economic development projects, since it has a great significance in carrying out development projects. These surveys include the design survey on the project for No. 1 Bridge across the River Chaopia in Thailand, the design survey on the project for expansion of Vientiane Airport in Laos, the design survey on the project for construction of Chruoy-Smach Port in Cambodia and the design survey on the project for construction of Kuching Port in Malaysia. In other words, it is normal practice that a series of surveys including a preliminary survey, a feasibility survey and a detailed design survey are carried out before a development project is carried into execution, whereas Japan's technical cooperation on Government basis for development projects has so far covered in principle the stages from preliminary survey up to the feasibility survey only. So, the fact that it has become possible for Japan to provide a series of surveys for development projects as a part of technical cooperation on a project basis, much can be expected of the results of development surveys in future. One more thing that is worth mentioning is that the surveys have become more concrete in method and more substantial in content.

In other words, apart from the development projects in the Lower Mekong Basin and the Asian Highway Construction Project for which surveys have been systematically conducted through stages since several years ago, such stages of survey as 1st survey to 2nd survey, preliminary survey to feasibility survey or feasibility survey to detailed design survey are either being carried out at present or scheduled to be carried out for 13 out of the 15 projects implemented with the fund appropriated to pre-investment basic surveys for fiscal 1968 including Bangkok-Thonburi Bridge Construction Project, the Fishing Port Construction Project on the eastern coast of West Malaysia and the Microwave Network Construction Project in Ethiopia. Thus, the fact that surveys for development projects have come to be conducted through systematic stages and by "fine-textured" methods seems to indicate the future direction of a development survey.

The survey for Development and Expansion Project

for Iron & Steel Industry in 6 countries in the Southeast Asia was designed to study the feasibility of regional cooperation by means of constructing a steel works of thorough process in the region of the 6 countries (including the Republic of China, Philippines, Indonesia, Singapore, Malaysia and Thailand). But, the fact that a regional cooperation has the nature of a common factory on the premise of establishing a common market as an approach to furthering industrialization in the Southeastern countries should be noted as a new trial.

The following is the outline of the surveys carried out in fiscal 1968.

<PRE-INVESTMENT BASIC SURVEYS>

1. Survey for the New Port Construction Project in the Republic of China
2. Survey for the Development of the Area Project around the Great Lake
3. Survey for the Sambor Development Project
4. Survey for Constructing a Fishing Port Project on the Eastern Coast in the West Malaysia
5. Survey for Television Broadcasting Network Project in Uganda

<SURVEY FOR OVERSEAS DEVELOPMENT PROJECTS>

1. Basic Study on Electric Power Development Project (Long-range) in Indonesia
2. Survey for Iron & Steel Industry Development and Expansion Project for the Six Southeast Asian Countries
3. Survey for Economic Cooperation to the Medium and Small-Scale Industries Abroad (Latin American Team)

<DETAILED DESIGN SURVEY FOR ECONOMIC DEVELOPMENT>

1. Detailed Design of the Vientiane Airport Expansion Project in Laos
2. Detailed Design of the Kuching Port Construction Project in Malaysia

<PRE-INVESTMENT BASIC SURVEYS>

1. Surveys for New Ports Construction Project in the Republic of China

(1) Purpose of Survey and its Background

Due to the remarkable progress of the economy of the Republic of China, the quantity of goods loaded and unloaded at the principal ports of Taiwan are ever on the increase. The situation is being aggravated with freight congestion problems occurring in succession as a result of the shortage of port and harbor facilities. Especially, Chi-lung Port, the only international port for the northern and the central part of Taiwan, is now at the saturation point having little room for development. In order to break through such situation, it is necessary to develop a new international port either in the northern part or the central part of Taiwan.

Three places, Tan-shui (near Tai-pei), Goroh (near Tai-chung) and Su-ao (near Hsuan-lan) are proposed for the site. In carrying out the survey, a comparative examination of the proposed three places was performed from the standpoint of the overall development project for the entire Taiwan and as a result, one place was selected.

(2) Description of Survey

The survey was conducted in two occasions, with the first survey (August 19, 1968~October 2, 1968) and the second survey (December 16, 1968~February 8, 1969). In the first survey, field investigations were conducted in respect to the natural conditions including the tide, waves, littoral currents, drift sand and coast protection, the conditions of location for working out a port and harbor project and the conditions of location for the regional development such as mutual coordination among port and harbor, railways and road activities as well as industrial development; and at the same time, collection of data, grasping of the contents and evaluation of such data were performed. The second survey comprised of analysis of data using computer, explanation and discussion on the result of said analysis, collection of supplementary data, correction of the result of the analysis, examination of the result of drilling required for the layout and surveys of the natural conditions of the proposed sites.

In the recent survey, technical evaluation of the proposed sites for a new port, examination of the economic aspect, estimation and examination of the quantity of goods loaded and unloaded, examination of regional development (including industrialization) of the neighboring district and economical method of construction were examined using a computer to select the site for a new port. Based on the result of said survey, the Government of the Republic of China will finally select one place out of the proposed three sites and a feasibility survey on other factors will be carried out in fiscal 1969.

2. Survey for the Development of the Area Around Great Lake in Cambodia, Lower Mekong Basin

(1) Purpose of Survey and Its Background

In 1961, a Japanese Government's survey team submitted to the Mekong Committee a preliminary survey report for an Comprehensive Development of the Major Tributaries in the Lower Mekong Basin, in which a proposal was made regarding irrigation of the vast area north of the Great Lake. That is to say, it was proposed to construct a dam at Stung Treng on the Mekong River, take water from the reservoir to pour into the Stung Sen tributary and use it as the irrigation source.

However, as a result of a preliminary survey for the Great Lake Northern Area Agricultural Develop-

ment Project conducted in 1966 with the cooperation of Japan's Sambor Team, it was recommended to start as early as possible a detailed survey of the Stung Chinit Project and also to explore the southwestern area of the Great Lake to establish a basic policy on the most effective and practical agricultural development program.

In 1968, Japan started a feasibility survey for the Stung Chinit Project as well as a preliminary survey for the Great Lake Southwestern Area Agricultural Development Project and was planning to submit to the Mekong Committee reports on the results of such surveys in December 1969.

(2) Description of Survey

Continuously from the dry season survey of 1967 (early in February to late in May 1968), in fiscal 1968 a wet season survey (early in October to early in November 1968) and a dry season survey (late in December to early in May 1969) were conducted, with field surveys carried out covering various fields including water conditions, geological survey, agricultural economy, electric power and soil. As the first stage of the Stung Chinit Project by constructing Kompong Thoma Intake Dam and Phnom Tokoh Reservoir, about 20,000 hectares of area with the height lower than 13 meters above sea level will be irrigated with the left coast of the Stung Chinit as the centre and at the same time, a dam-type power plant having an output of about 3,500 KW will be constructed, running-water fish farms will be constructed to promote fisheries with water taken from the reservoir and the irrigation waterways and repair and improvement works for navigation will be carried out. As the next stage about 5,000 hectares of the fertile paddy field on the left side of Stung Chinit which is a little higher will be irrigated either by developing underground or by taking water directly from the reservoir. With this area of 5,000 hectares added to 20,000 hectares to be irrigated in the first stage the total area irrigated will become 25,000 hectares. At the time when the survey started, the area to be irrigated had been estimated at 40,000 hectares, but this figure had to be corrected as a result of the survey conducted thereafter.

The Southwestern Coastal Area Agricultural Development Project is designed to establish a basic policy for an agricultural development project in respect of the area of about 1 million hectares covering the three provinces of Battambong, Pursat and Konpong Chknang by either polder dike development system in which polder dike is constructed to prevent the area from being flooded by the Great Lake and water for the irrigation is supplied from the Great Lake or by tributaries development system in which dams or diversion dam are constructed for the major tributaries, aiming at stabilization of irrigation in wet season and the introduction of water from the reservoirs created by the dams in dry season.

Continuously from 1967 and 1968, field surveys were conducted in the wet season in 1969. This completed all the field surveys extending over three fiscal years. And a report is scheduled to be completed by December 1969.

3. Survey for Sambor Development Project

(1) Purpose of Survey and Its Background

Construction of 12 multi-purpose dams is under consideration as the skeleton facilities in the Mekong River Development Project and of these it was decided by the Mekong Committee in 1957 to designate construction of dams at three sites including Pa Mong, Sambor and Tonle Sap as the projects with the first priority. The basic surveys needed for working out programs for these three sites were conducted with the cooperation of Canada, the U.S.A. and Australia and further cooperation of friendly nations for carrying out feasibility survey was asked for.

In 1961, Japan expressed her willingness to undertake a feasibility survey for the Sambor Development Project and sent out a preliminary survey team for the Comprehensive Development of Sambor Project. It was made clear by the report based on said preliminary survey that if a dam with the height of 36 meters and the crest length of about 30 km is constructed on the Lower Sambor Rapids in Kratie Province and a power plant, navigation facilities and irrigation facilities are also constructed, electric power with the maximum output of 620,500 PW and annual generation capacity of 4,600,000,000 KW/h can be obtained and, moreover, will be a great contribution to the navigation facilities for the Mekong River and agricultural development.

Based on this report, the Japanese Government decided to carry out a full-scale survey for the purpose of preparing a feasibility report and entrusted OTCA with the work and OTCA has been working on this since then.

(2) Description of Survey

In fiscal 1962, OTCA conducted topographical and geological surveys which will constitute the basic data for designing dams and power plants as well as preliminary surveys on power market, navigation and agriculture.

In fiscal 1963, OTCA carried out boring and seismic exploring with emphasis placed on the geological survey at the proposed dam construction sites. Furthermore, hydrographical tests were conducted using models in Japan.

In 1964, OTCA almost completed the field surveys in various fields including power marekt, power distribution and navigation in addition to the supplementary surveys for design of dams with a fishery policy included and started field survey on agriculture.

In 1965, OTCA continued field surveys on agriculture and other works including drafting of programs

and preliminary designing were carried out in Japan.

In 1966, OTCA continued and completed the field surveys on agriculture and started compulation of an overall report.

In 1967, OTCA continued the work of preparing a comprehensive report.

In 1968, OTCA continued preparing a comprehensive report and in July 1968 completed and submitted it to the Mekong Committee. But, at the request of the Mekong Committee, it was decided to reexamine the Sambor Project with the effects of Pa Mong Project taken into account. And OTCA continued the compulation work for such report. This work will be carried on to the fiscal 1969.

4. Survey for Fishing Port Construction Project on the Eastern Coast of West Malaysia

(1) Purpose of Survey and Its Background

The fishery in Malaysia occupies a high place in the economy of the nation, in view of the fact that the products supplies 70~80% of the nation's intake of animal protein, that the number of employees is about the same as that in mining industry and that the export of marine products is contributing to the improvement in the balance of international payments.

Therefore, the fishery development project is incorporated in the nation's 5-year Development Plan (The 1st Malaysia Plan 1966–1970) and as a part of such project, the Fishing Port Construction Program is worked out. But according to this Program, the construction of 3 ports on the west coast only is decided, while no construction of ports is planned on the east coast.

However, since the fishing activities on the east coast is hindered by strong winds and heavy waves during the northeast monsoon season, the fishery on this coast is at a much lower level than the fishery on the west coast, so that the construction of fishing ports to establish the foundation for fishing opportunities throughout all seasons is now an important theme.

This survey is designed to carry out basic investigation for construction of fishing ports and incidental facilities on land at four places, Kuala Besut, Kuantan, Mersing, Kuala Trengganu, selected by the Government of Malaysia, to determine on the feasibility of construction and to decide priority order.

(2) Description of Survey

The survey team carried out field survey at said four places for a period of more than one month and at the same time conducted field survey in respect to the fishing port facilities and fish markets in Penang and Singapore as well as the fish markets and the situation of distribution in Kuala Lumpur, and collected relevant data.

The following is an outline of the survey results.

1) The general level of fishery on the east coast of West Malaysia is not as high as that on the west coast. However, if a proper fishery development project is effectively implemented and well-equipped fishing ports are constructed, the haul per fisherman on the east coast can be expected to increase to the same level as that on the west coast.
2) At present, in every district, rivers are used as fishing ports, but the berths and the channels have become shallow due to the soil and sand brought down by the rivers and the drift sand from the sea shore, so that maintenance and control of fishing ports are extremely difficult both economically and technically. Under these circumstances, it is advisable to select new places for fishing ports, instead of constructing fishing ports by improving rivers. Furthermore, a feasibility survey should be conducted before the monsoon season starts.

5. Survey for TV Network Construction Project in Uganda

(1) Purpose of Survey and Its Background

The TV broadcasting business is a government enterprise under the jurisdiction of the Ministry of Information, Broadcasting and Tourism. The Kam Pala TV Station was opened in 1963 in the capital of the country, followed by opening of other TV stations one after another. At present, TV stations are carrying out broadcasting, but they are not at all in a satisfactory condition, with narrow service areas, low diffusion rates and poor maintenance and lack of proper management of the present broadcasting facilities. On the other hand, excepting the capital and several principal cities, the cultural standard of the people is low. So, the aim is to expand and to construct a nationwide TV network in order to enlighten and develop the nation as a whole through TV broadcasting.

Based on the nationwide TV network expansion project which is treated as one of the important items of the 2nd Economic Development Five-Year Plan of the nation (1966–1971), the Government of the Republic of Uganda requested Japan's cooperation for detailed technical surveys on propagation tests and so forth.

In response to said request, Japan sent out to the country 3 experts in February 1968 for the duration of 2 months to conduct a general survey and moreover sent another survey team for 3 months from December 1968 to work out a long-range program for the project by carrying out actual propagation tests for establishing a nationwide TV network and program relay circuit network and also by performing pluralistic examination of the existing broadcasting system.

(2) Description of Survey

The survey consisted of an examination of the performance of the 6 existing TV stations, selection for installation of new TV stations, actual radio wave propagation test between each section in the projected relay circuit network, examination of the existing broadcasting situation (including broadcasting system, contents of

programs, finance and personnels) and collection of relevant data.

As a result of said survey, it was concluded that the TV Network Expansion Project in the Republic of Uganda will be very effective in elevating the education level of the people, provided that the facilities of the existing TV stations are improved, since the service area covering more than 90% of the population of the nation will be secured and images of good quality can be received. Based on this conclusion, the JTCA recommended to the Government of Uganda a concrete execution plan comprising stages of execution of the plan, expenditures required (about ¥800,000,000) and planning of broadcasting programs, etc.

<SURVEYS FOR OVERSEAS DEVELOPMENT PROJECTS>

1. Basic Study on Electric Power Development Project (Long-range) in Indonesia

(1) Purpose of Survey and Its Background

This project is based on the recommendation submitted in November 1967 by the World Bank Survey Team concerning economic rehabilitation of Indonesia. The World Bank proposed a long-range electric power survey as the basis for carrying out power plants expansion project, raising money required and reorganizing institutions related to the electric industry.

The survey was carried out at the request of the Government of Indonesia, i.e. Japan sent out field survey teams in 1968 and 1969 for a total duration of about 7 months in order to examine the basic project on the future rehabilitation and arrangement as well as development policy for the electric industry in Indonesia and also to examine a long-range power supply and demand program.

The survey in 1968 was designed to extract problems and prepare a short-range program while the survey in 1969 was designed to prepare a long-range program.

(2) Description of Survey

The field survey in 1968 was conducted for a duration of about 100 days from the middle of December 1968 as follows:

1) Preparation of a minimum fund program for rehabilitation and expansion of electric power in Java; 2) Re-examination of the expansion program for power distribution and telecommunication network in Central Java; 3) Re-examination of the plan for the power supply facilities especially power distribution facilities in East Java; 4) Re-examination of cost estimation, technical specification and designing for the power distribution expansion project in West Java.

As a result of the surveys with emphasis placed on said 4 items, it was made clear that a minimum annual increase of 10.5% in demand in five years is necessary and the funds needed to carry out the construction in fiscal 1969 to meet this increase was estimated at 4,520,000,000 rupiahs, so that the original estimate must be increased by about 1,270,000,000 rupiahs (a little less than 30% of the total cost in the original estimation) to cover the cost centering around power distribution equipment.

The following is an outline of the conclusion of the survey in each field.

(A) Demand Estimation

At present, the electric lamp diffusion rate in Java in less than 4%, so that there is a very large potential demand. This can be regarded as the so-called "Demand for Supply Capacity." Therefore, as regards demand, a mere forecasting for the future as practiced in Japan will be meaningless. Instead, a demand estimation for the minimum requirement is important. The result of demand estimation, taking into consideration various factors for the minimum requirement including population increase, income increase, voltage improvement and an increase in diffusion rate of electric lamps, an increase of 8.0% in 1969, 8.4% in 1970 and on the average 10.5% per annum for the five years from 1968 to 1973 were estimated so far as Java was concerned.

(B) Power Supply

As a result of the survey conducted with emphasis placed on operation of spare equipment in the skeleton system and an expansion of stable capacity of power supply, it was emphasized that the construction of gas turbine incorporated in the project for fiscal 1969 be dropped and the urgency of constructing 3T at Tandjing Priok and the necessity of early commencement of the Serang Thermal Power Plant construction in Central Java were also emphasized.

(C) Power Transmission and Transformation and Communication

As the result of examination of the following problems: solution for the overload problem on the equipment on the basis of effective utilization of the existing facilities, improvement of reliability for the immediate future through closer cooperation of the skeleton system from the long-range viewpoint and expansion of communication facilities required of the system management; it was found necessary to construct facilities for transmission, transformation and communication with the approximate cost of 267,000,000 rupiahs.

(D) Power Distribution

Power distribution facilities are most backward of all facilities and a large amount of fund is needed for the improvement, so that the fund must be effectively used by reducing the unit cost, e.g. by using overhead electric lines instead of underground lines. For the purpose, it is necessary to allocate additional 1,830,000,000 rupiahs to this program centering around improvement works including elimination of overloaded facilities in the centres of cities and improving the voltage.

2. Survey for Iron & Steel Industry Development and Expansion Project for the Six Southeastern Countries

(1) Purpose of Survey and Its Background

The 3rd Conference of the Asian Industrial Development Council (AIDC) of ECAFE held in February 1968 in Bangkok passed a resolution on the necessity of executing feasibility studies on the four projects based on the recommendations submitted as a result of the surveys (Chief of the Survey Team: Hurry Wilner; 3 experts from Japan joined the team) which was conducted for the period of 10 months from July 1967, aiming for harmonious development and expansion of iron and steel industry through the regional cooperation of the 6 countries in the region (Formosa, Philippines, Indonesia, Singapore, Malaysia and Thailand).

In response to said resolution, the Japanese Government conducted surveys on practical and concrete feasibility for the following 4 projects:

1) Taiwan — To set up steel works to manufacture hot coils and plates for rolling mills, to be supplied to Taiwan and Philippines.
2) Singapore — To set up a billet mill, with the products to be supplied to the six countries within the region.
3) Thailand — To set up a cold sheet rolling mill, with the products to be supplied to the four countries including Thailand, Malaysia, Singapore and Indonesia.
4) Indonesia — To set up a steel bar mill to meet the demand for steel bars within Indonesia (effective use of Tjilegon Iron & Steel Works).

(2) Description of Survey

The Survey Team was divided into two groups. The first group consisting of 8 members conducted field surveys in respect to the three countries of Republic of China, Philippines and Indonesia for a period of 23 days from June 1968, while the second group consisting of 8 members carried out field surveys in respect to Singapore, Malaysia and Thailand for a period of 24 days from July 22, 1968.

The results of the surveys are as follows.

(A) Hot coils and plate mills for Taiwan

Taiwan will start manufacturing hot coils from imported slab in 1974, but exportation of this product cannot be expected for the immediate future. In order to meet the ever-increasing domestic demand and moreover to have some surplus for exportation, the capacity of the steel works in 1976 (3rd stage of construction) should be increased from 1,000,000 MT to 1,500,000 MT and the capacity in 1980 (4th stage) from 2,000,000 MT to 3,000,000 MT.

(B) Steel bar mill in Indonesia (effective use of the integrated Tjilegon Iron & Steel Works)

The actual results of demand for steel bars in Indonesia in 1966 is estimated at 120,000 MT and steady future growth of the demand can be anticipated with the progress of the rehabilitation projects in future.

The economics for the projected construction of a steel bar mill having the annual capacity of about 100,000,000 MT is not so favorable in view of the disadvantageous conditions of location and the expensive construction cost. In reality, however, most of the equipment which had been scheduled to be imported have now been received and the money which have been poured into this project including incidental facilities in the local currency amounts to a large sum, equivalent to US$5,000,000, although the construction is suspended with only 25% executed. So, this should be utilized and reconstructed. And the fund needed for such reconstruction is estimated at US$2,400,000.

(C) Cold mill in Thailand

The demand for cold rolled sheets in Thailand is very strong. It was a wise policy from the standpoint of national economy that Thailand has so far met this demand with imported products of reasonable price. And if she makes haste in constructing a cold rolling mill, it is apt to result in forcing upon the domestic users the products which are more costly than the imported products. Therefore, it is desirable to decide the construction site for a new sheet rolling mill after conducting surveys carefully taking plenty of time so that the mill can constitute one "wing" of an integrated iron & steel works which is scheduled for construction in future. In this case, the completion of the reversing mill is scheduled for April 1975 and that of tandem mill, December 1976. If the construction progresses as scheduled, the new mill will enter full operation with annual production of about 430,000 MT of sheets, of which a little more than 10% can be exported to the common market.

(D) Billet mill in Singapore

Calculation of domestic demand and demand for importation of billets in the six countries within the region is extremely difficult. However, on the premise that all the six countries support the idea of the projected common market and on the assumption that each country will import the billets from Singapore in the quantity equivalent to 10~30% of each country's demand, the import volumes by the 6 countries (the estimated potential import volumes) can be calculated as follows.

1970	448,000 MT
1975	757,000 MT
1980	930,000 MT
1985	1,013,000 MT

Of the various types of iron and steel works which could meet said demand, the four typical types are compared as follows.

a) An integrated iron works by blast furnace pig-iron process (in case of 250,000 MT/year scale on crude steel basis).
b) An iron works by electric furnace pig-iron process

(in case of 250,000 MT/year scale on crude steel basis).

c) An iron works by electric furnace steel manufacturing process with scrap iron as the main raw material (in case of 250,000 MT/year scale on crude steel basis).

d) An integrated iron works by blast furnace pig-iron process (in case of 1,000,000 MT/year scale on crude steel basis).

The conclusion of case study on said four methods is as follows.

a) In case of the electric furnace process using scrap iron as the raw material, the production cost is the lowest and the product, with the price nearly at international level, could be manufactured, but a problem may be posed in obtaining a stable supply of scrap iron which is the principal raw material at reasonable prices.

b) Despite the favorable conditions of location and labor situation in Singapore, production by the blast furnace pig-iron process will prove to be more costly than expected, and it will be impossible to supply billets to the member countries of the common market at international prices as expected by them. And even if an iron works of 1,000,000 MT/year on crude steel basis is constructed, the cost for manufacturing billets will exceed the international price.

3. Survey for Economic Cooperation to the Medium and Small-Scale Industries Abroad (Latin America Team)

(1) Purpose of Survey and Its Background

This survey was carried out at the request of the Governments of Colombia and Chile, to examine the feasibility of developing medium and small-scale industries to facilitate industrial development in the two countries. In other words, comprehensive surveys and examination were carried out in respect to various factors for setting up medium and small-scale industries including detection of medium and small-scale industries for which there is a strong demand for establishment in the respective countries, laws and regulations for setting up enterprises in the country concerned, the actual conditions of the enterprises in the country concerned, the methods of raising capital in the country concerned, the methods of obtaining equipment and machinery, the conditions of location including water and power, the industrial foundation including transportation facilities, the labor and employment conditions, sales and distribution system, the actual conditions of the relevant industries, the technical levels and detection of problems in the relation between domestic demand and importation.

(2) Description of Survey

The Survey Team conducted field surveys for one month from the beginning of November in the suburbs of three cities including Bogota, Cali and Baranquilla in Colombia and the suburbs of two cities of Santiago and Conception in Chile.

As a result of said surveys, the following conclusions were obtained regarding the methods of Japan's cooperation:

(A) Columbia

The future course of the medium and small-scale industries in this country, having a comparatively long history centering around light industries and having reached a certain level, can be considered as follows.

a) The existing enterprises should have international competitive power.

b) The goods which are being imported at present should be manufactured domestically or new enterprises producing new items of goods for export should be developed and fostered.

And much is expected of Japan's cooperation in said fields. As methods for cooperation, establishment of credit line, dispatch or recommendation of experts, technical cooperation and joint investment can be considered. However, different from the cases of the countries in Southeast Asia, which are nearer to Japan and have similar histories, materialization of effective cooperation on a scale that Colombia expects to receive from Japan seems to be very difficult. Under the circumstance, as the method of cooperation for the immediate future, the establishment of a credit line should be given the first priority.

(B) Chile

The scope of cooperation that Japan can extend at present to bring up medium and small-scale industries in Chile seems to be limited, in view of the industrial structure in Chile, the general investment circumstances and the attitude of LAFTA, to the enterprises extending their business into Central and South America at present or their affiliated enterprises.

However, in the face of the trend for restriction of trade as seen in LAFTA, in order to secure export market, while correcting the extremely unfavorable balance of trade with Japan and competing with countries in Europe and America, the fostering and strengthening of the existing enterprises with cooperation from Japan is of course necessary and further cooperation in new fields of enterprises is indispensable. For this purpose, materialization of closer cooperation through the following stages is considered proper.

a) Expansion of trade with the credit line signed in December 1968 as an axis

b) Mutual understanding and technical exchange through expansion of trade

c) Technical cooperation between enterprises of the two countries

<DETAILED DESIGN SURVEYS FOR ECONOMIC DEVELOPMENT>

1. Detailed Design Survey of the Vientiane Airport Expansion Project in Laos

(1) Purpose of Survey and Its Background

The land transportation facilities such as railways and roads in Laos are lagging behind, while the transport with foreign countries largely depends on air transportation. However, the runway of the Wattai Airport in Vientiane is only 2,000 meters long, which is not suitable for take offs and landings by large planes.

At the request of Prime Minister Phuma who visited Japan in April 1966 to attend the Cabinet Ministers's Conference for Development of Southeast Asia, Japan sent her Survey Team for Vientiane Airport Expansion Project in February~March to carry out field surveys.

Then, in response to the request from the Government of Laos which is planning early materialization of this project, Japan has agreed to carry out the designing for the execution of the project.

(2) Description of Survey

Field investigations were conducted during the period from November 1968 to February 1969. Thereafter in Japan, the work of detailed design and the preparation of tender are being performed continuously from 1969. The design project is scheduled for completion in September 1969. This project is designed to extend the existing runway of Wattai Airport in Vientiane from 2,000 meters to 3,000 meters, to newly construct a high-speed separable guide way, to extend the parallel guide way, to improve the aprons, to arrange the necessary air navigation facilities and, thereby, convert the airport into an international airport which can accommodate large jet passenger planes.

2. Detailed Design for Kuching Port Construction Project in Malayisa

(1) Purpose of Survey and Its Background

The existing facilities of Kuching Port in Sarawak, located at two places (one in front of the street and the other at Tanah Puche), can accommodate ships of from 1,000 tons to 3,000 tons respectively since the river is shallow. Moreover, due to shortage of proper facilities, ships are obliged to stay at anchor.

In the light of the situation, the Government of Malaysia asked Japan to conduct surveys to examine the technical and economic feasibility of improving ports and harbors.

In response to said request, Japan carried out field surveys for a period of three months from March 1968 and submitted a feasibility report to the Government of Malaysia.

The recent detailed design is what is performed continuously from said feasibility survey.

(2) Description of Survey

The field surveys were conducted from the middle of March to the beginning of June 1969. Thereafter, the work of detailed design and preparation to tenders are being carried out in Japan.

Further, the detailed design is scheduled for completion at the end of March 1970 after going through interim meetings with the Government of Malaysia in July and November 1969.

This project is designed to construct a pier for miscellaneous goods, capable of mooring a ship of 15,000 tons and a ship of 3,000 tons at the same time or two ships of 10,000 tons at a time at Pe Nding about 5 km downstream from the existing port and harbor facilities (in front of the street and at Tanah Puche).

Section 3. Problems of Japan's Technical Cooperation and Its Future Prospect

In the development survey phase of Japan's technical cooperation with developing countries, Japan has been steadily obtained successful results with surveys and planning for the Project for Development of the Lower Mekong Basin, the Project for Construction of Asian Highways and other development projects. And, the number of requests from developing countries are on the increase, creating the difficulty of selecting them within the limited budget every year.

To obtain more effective results in future development surveys, it is necessary for us to arrange the problems recognized through the valuable experiences in the past 7 years and execute such project with a fully prepared plan, both in quality and quantity, and with positive understanding and close cooperation of the agencies and institutions concerned.

From said standpoint, we wish to elucidate the problems on the execution of the development survey and describe its future aspect.

1. Problems

The principal purpose of the development survey is to conduct surveys in regards to a development project and prepare a development plan on behalf of the recipient country so that the government of that country can make a decision on such project and call on to other countries for cooperation for materialization of the project. Reviewing the development surveys conducted in the past, we must admit that we had not always submitted to the governments of recipient countries at opportune times reports which were written in a persuasive manner, fully responding to the requests of such countries. In view of the characteristics of the development survey business, this is a basic problem which should be solved first. In addition, there have been requested various matters in connection with the execution of surveys as described below, which can also be pointed out as problems which must be solved

in future.

Said requests from recipient countries include quick response from Japan after sending in requests for surveys, an increase in the number of surveys accepted, full analyses of not only technical aspect but also economic and social aspect, donation of the surveying equipment after field surveys for development have been completed, partial revision of the report after submission and using of our influence of extending to the recipient countries technical and financial cooperation needed for materialization of the project concerned.

On the other hand, there are strong requests from the survey teams, which include providing them with sufficient information in advance, clarification of their obligations and authority, elastic allocation of the budget and payment of sufficient remunerations to them.

Also, the institutions in charge of financial cooperation want to have the basis for selection of the survey items clarified and to be kept informed of the progress of the project concerned after the execution of the surveys.

2. Improvements of Execution Setup

In order to solve the aforementioned problems, it is necessary to have positive understanding and close cooperation of not only the agencies in charge of development surveys but also a wide scope of agencies and institutions concerned; and furthermore, improvements in various fields including improvement of the system, expansion of the organization and cultivation of talents are necessary.

To begin with, we wish to discuss the issue of improving the methods for carrying out development surveys along with the arrangement of the setup by the agencies concerned which is necessary for the purpose and clarification of obligation and authority.

(1) Improvements of Execution Methods

As is clear through a review of the process for planning a public work development project in Japan, in order to effectively work out a plan for a pertinent development project, sufficient information, experts in various fields and time for study are necessary and what is important is to combine them properly and, thereby, work out a plan smoothly.

In executing the development surveys for each project in the past, importance had been attached to field surveys, with works before and after such surveys apt to be made light of. But in the future, steps for preliminary study and preparation of report must certainly be incorporated in the survey program. The following is a desirable sequence in the execution of a development survey.

(A) Preliminary Survey

When a request for a development survey is received from a recipient country, it is needless to say that the idea or desire of such country for the development project as well as the situation of that country should be confirmed by examining the information obtained through diplomatic channel or private channel as well as the data which are readily available, prior to Japan's acceptance of such request. Furthermore, if necessary, it is desirable to send out a limited number of experts to the country concerned to find out from the government the background on why the request was made, the relative position of the requested project to the nation's economic development project as a whole, the degree of urgency of the request and the general situation of that country so that an outline of what is expected of Japan's survey team can be obtained.

Moreover, nothing could be better, if Japan's experts are sent for planning development projects to the recipient country a long time before request is made to participate in the work of planning development programs in that country and thereby, to perform the ground work for any request to Japan. After a decision is made on execution of such survey, the most suitable direction for the development project is decided by the experts of various fields based on the idea of the recipient country and the situation there. And this data is arranged in an interim report and a field survey program is worked out concerning the problems which cannot be clarified in Japan. Visiting the recipient country is not always the best and the only means of grasping the situation in that country. There are many cases in which it is more effective to collect the data accumulated and stored in various fields in Japan and also to obtain and study necessary information from the recipient country.

(B) Field Survey

In carrying out field surveys which are planned as a result of preliminary survey, it is necessary to select experts suitable for such duty. Besides, since the object of survey is a foreign country, the necessary information on general situation, social customs and procedures for investigation and so forth are not clear. Moreover, in many cases, statistical data on social, economic and natural conditions, topographical maps, geographical maps and data on distribution of natural resources are not prepared in the recipient countries, so that a perfect field survey program cannot always be worked out in advance. Therefore, instead of sending a large survey team from the beginning, the team should be divided into an advance party and a later party or into the first party and the second party or elastic measures should be taken to shorten or extend the field survey period or by correcting the survey items and methods whenever necessary.

(C) Preparation of Report

In preparing a report, it is necessary to examine from every angle the basic data obtained through preliminary surveys or field surveys, work out a program

for the project best suited to the situation of the recipient country and write it out in a persuasive manner, using words easily understandable and yet correct.

During the course of preparation of a report, depending on the occasion, it is necessary to have interim discussions with the government of the recipient country on the draft program; and also when a report has been completed, to explain it to such government by answering their questions directly so as to have the report fully understood by them, instead of merely sending it out. For said interim discussions and explanation of report after it is sent out, there can be a case in which a person of the recipient country in charge of the matter is invited to Japan.

The report should be sent not only to the government of the recipient country but also to the agencies and institutions concerned in Japan so as to obtain their continued cooperation.

(D) Follow-up

Even after submission of a report to the recipient country, as occasion demands, it is necessary to have technical discussions for partial revision of the draft development program or for materialization of the project concerned and also to constantly collect information regarding the progress of the project.

(2) Arrangement of Setup for Execution of Program

In order to carry out substantial development surveys according to the sequence of execution as described above, it is desirable to improve the ability for executing the program through improvement of the internal system of the agencies concerned and by posting proper persons for the duty.

In the case of OTCA, it is necessary to have a system in which data on the general situation of the recipient countries of technical cooperation, their long-term economic development programs and the status of the aids by advanced countries are collected, arranged and are made readily available. Also, our personnels must be equipped with the technical ability to the extent that they can estimate the number of experts, duration and expenses required of the survey concerned at the stage when a request is received from a recipient country, and at the execution stage they can adjust a group of experts whom OTCA entrusts with the surveys and can understand the content of the report prepared on development surveys. As regards, the report in a foreign language for submission to the government of the recipient country concerned, we cannot heep but place an order outside, but it is necessary for our personnel to have the linguistic ability to examine the translation.

Also necessary is the arrangement of business setup capable of disposing the business promptly and elastically in accordance with the characters of the development survey business concerned. As regards the Ministry of Foreign Affairs and the Ministry of International Trade & Industry who are the trustees of this technical cooperation business, it is desirable that they grasp correctly the contents of a request from the recipient country, to clarify the diplomatic and commercial effects expected by execution of the development survey in response to such requests and to arrange the setup so that they can decide as the next stage, whether technical cooperation or financial cooperation desirable to be undertaken by Japan.

As for the agencies and institutions to which each expert for execution of development surveys belongs (including government agencies and consulting companies, etc.), we hope that the system will be revised in such a way that the expert is allowed to concentrate on the work, not only during the period for field surveys, but also during the period for preliminary surveys and the preparation of a report and that he can be sent abroad for the purpose of field surveys whenever the occasion arises.

In order to improve the content of the development survey reports, we have been asking for participation of private consulting companies in addition to employees of government and public agencies, but it is necessary to have a system enabling us to pay reasonable remunerations to such consulting companies so that the work may be commercially payable for them.

Furthermore, growth of consulting companies engaged in clear analyses of technical feasibility, economic propriety and financial soundness in respect to development projects is hoped for. For the purpose, of working out programs for development projects of the same category in Japan, it is indispensable that the government and public agencies in charge of the projects concerned (e.g. Ministry of Agriculture, Ministry of Transportation, Ministry of Construction, Japan Highway Public Corporation, Nippon Telegraph & Telephone Public Corporation, etc.) establish the custom of using the services of consulting companies and that detailed analytical data on economic and social effects of each project be appended to the development programs.

(3) Clarification of Obligation and Authority of the Relevant Agencies

In order to arrange the setup for execution of development surveys in the agencies concerned, first of all, it will be necessary to clarify the obligations and authority of such agencies. To be concrete, the following can be pointed out.

It is hoped that a system be established by which OTCA can take initiative in deciding a survey program including survey items and organization of survey teams in consultation with the Ministry of Foreign Affairs and other Ministries concerned, after the Ministry of Foreign Affairs has decided on the execution of individual development survey. As regards the coordination between the Ministry of Foreign Affairs and OTCA, preparation of the required practical plan by the Min-