

# **PART 2**

## **DETAILED OUTLINE**





# CHAPTER 1

## GOVERNMENT-SPONSORED TECHNICAL COOPERATION

### SECTION 1 TRAINING PROGRAMME FOR OVERSEAS PARTICIPANTS

#### 1. Outline

Training of foreign trainees in Japan has been one of her representative forms of technical cooperation since she joined the Colombo Plan in 1954 as a donor country.

Ever since 138 trainees were first accepted from Asia in 1954, the number of participants has increased year after year with the widening of the geographical coverage from Asia to the Near and Middle East, Africa, and Central and South America. From 1973 on, the number has exceeded 2,000 each year, recording 2,254 in 1976.

The total number of trainees accepted since 1954 reached 26,338 by the end of March 1977.

The training is divided into group and individual training systems. Under the former system, the trainees take group training courses which are organized according to the high common priority needs of the developing countries, taking account of the operation of training institutes, languages, and training period, etc. Under the latter, they are trained individually according to respective curricula which are prepared at the request of each country.

The participants are mostly medium-level technicians, researchers and administrators of governments or public enterprises who were recommended by their governments. Furthermore, the training of local counterparts of Japanese experts in the projects abroad assisted by Japan is being positively conducted as a means to increase the efficiency of the projects.

Training is offered at the Agency's training institutes, Uchihara International Agricultural Training Centre, Kanagawa International Fisheries Training Centre and other specialized institutes with the cooperation of government research and experiment stations, local public entities, universities, colleges, private enterprises, and various industrial bodies.

In addition to the above two, the Agency operates international training centres in Tokyo (two centres), Osaka, Nagoya and Hyogo with pleasant life and good environment. In the operation of these centres, maximum effort is made to maintain an agreeable training environment and enable the participants to enjoy a comfortable life while in Japan.

Each training course comprises lectures, practical training and study tours which are carefully combined to upgrade the participants' technical level in their respective specialized fields.

In March 1977, a fisheries training ship, "Fuji (approx. 20 t)," was constructed at Kanagawa International Fisheries Training Centre with a view to strengthening the shipboard training of participants.

## 2. Performance in 1976

In 1976 a total of 2,718 participants were accepted under the programme, of whom 2,254 were new arrivals and 464 were those who were carried over from the preceding year. For the newly-accepted, 132 group training courses were conducted for 1,550 participants, with individual training being provided for 704 participants.

Of all participants newly accepted in 1976, 1,248 were from Asia, 371 from the Middle and Near East, 171 from Africa, 432 from Central and South America, and 32 from other areas, with Asia accounting for 55% of the total. (See Fig. 1).

Sector-wise, 293 participants received training in agriculture, 104 in fisheries, 165 in construction, 127 in heavy industries, 57 in mining, 70 in light industries, 58 in chemical industry, 82 in public works, 180 in transportation, 305 in tele-communications, broadcasting and postal services, 237 in medical and welfare services, 3 in atomic energy, 75 in management technology, 27 in education, 417 in administration, and 54 in other sectors (See Fig. 2).

Of the said 2,718 participants accepted in 1976, the local counterparts of Japanese experts numbered 285.

Fig. 1 Participants by Region (1976)

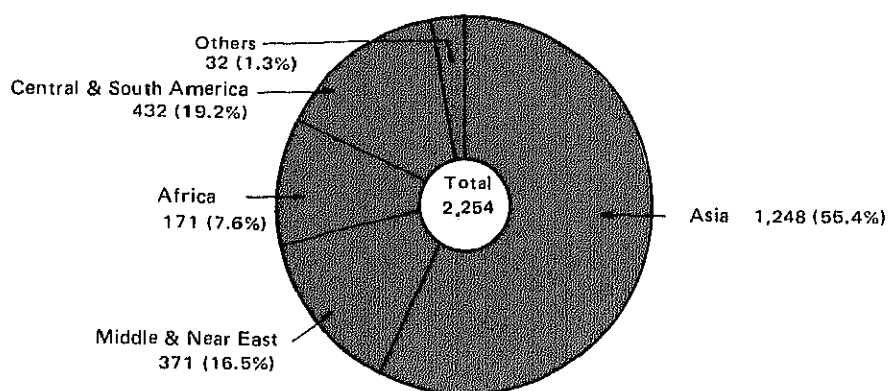


Fig. 2 Participants by Sector (1976)

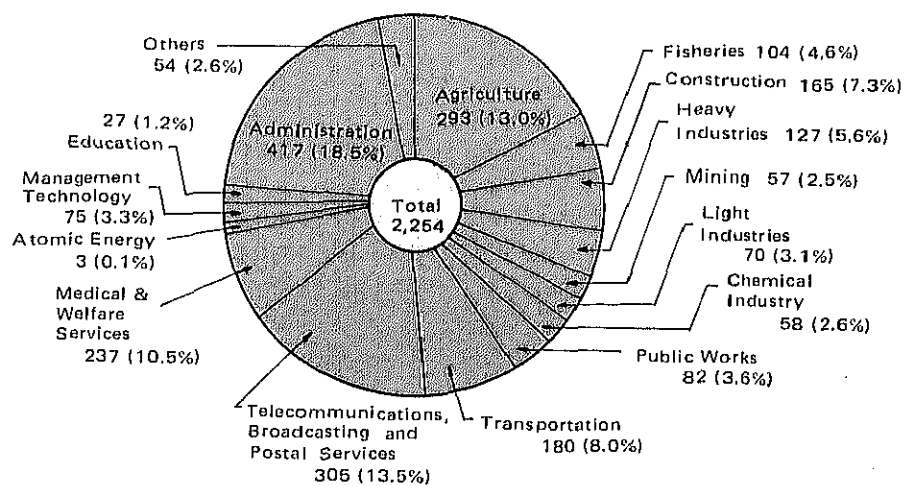


Table 1 Group Training Courses and Seminars Conducted in 1976

No.	Subjects of Courses/Seminars	Duration (Month)
(1)	Vegetable Crops Production	9.5
(2)	Irrigation and Drainage	9.5
(3)	Rice Cultivation and its Extension	9.5
(4)	Rice Production Mechanization	9.5
5	Coastal Fisheries Extension	11
6	Telephone Network Planning and Designing	3.5
7	Ceramic Glaze and Decoration	6
8	Supervisory Training (Seminar)	2
9	Agricultural Extension Service	3
10	Treatment of Offenders	3
11	Metal Finishing Engineering	6
12	Coins, Decoration MFG., Metal Analysis and Precious Metal Refining	3.5

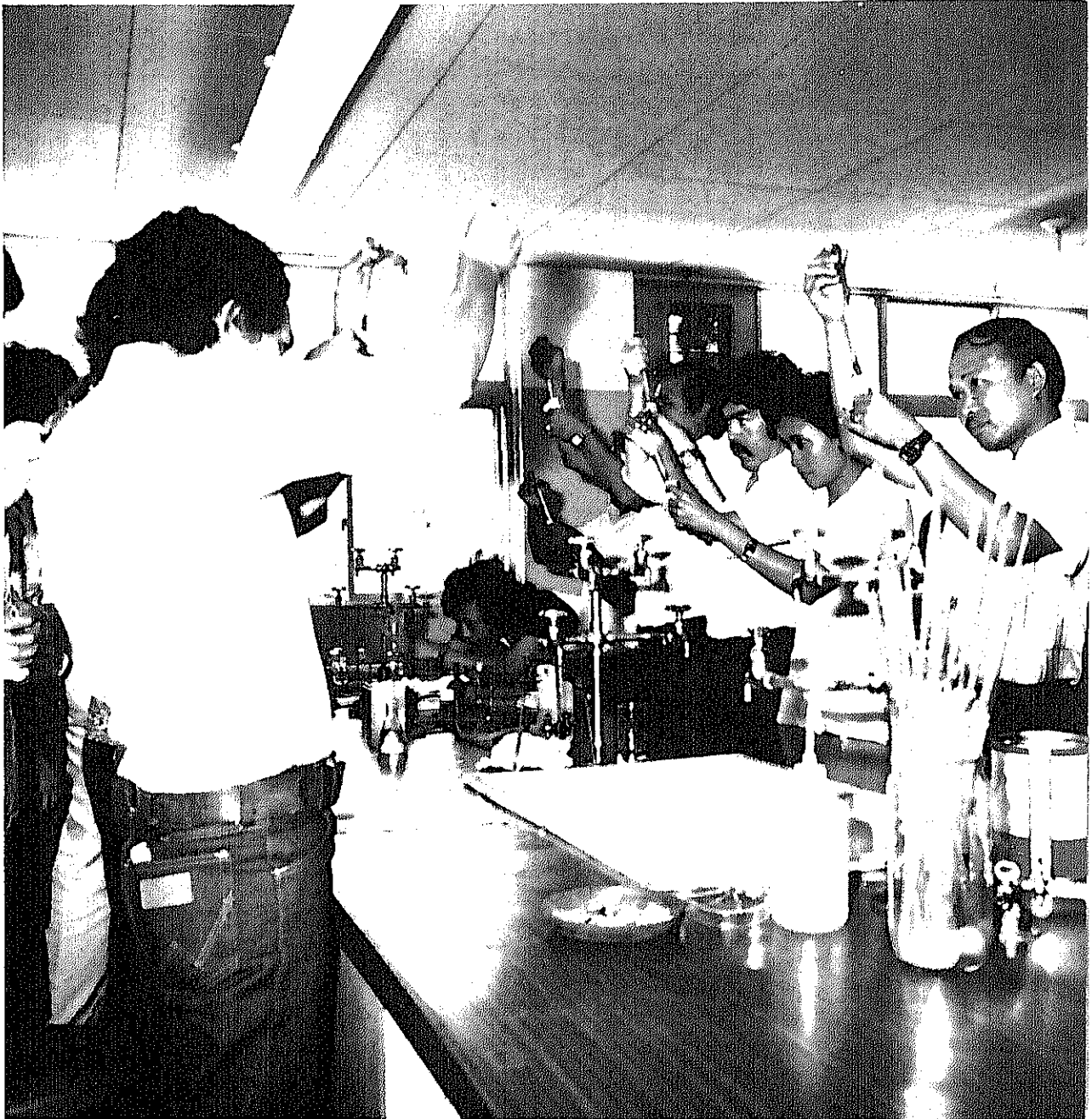
No.	Subjects of Courses/Seminars	Duration (Month)
13	High Skilled Machinist	11
14	Poultry Development	5
15	Thermal-Electric Power Engineering	3
16	Hydro-Electric Power Engineering	3
17	Marine Fisheries Research (I)	6
18	Artificial Insemination for Cattle	6
19	Tourism A (Seminar)	2
20	Smaller Enterprise Development (Seminar)	3
21	Control of Rice Diseases and Insects	6
22	Animal Health Research	6.6
23	Off-shore Prospecting	7
24	Construction Machinery Engineering	3
25	Textile Engineering (Weaving)	7.5
26	Hydrographic Survey	6
27	Foundry Engineering	7.5
28	Water Works Engineering	3
29	Television Broadcasting Management	1.5
30	Ports and Harbours (Seminar)	2
31	Trade Promotion A (Seminar)	2
32	Carrier Telephony Engineering	3.5
33	High Frequency Radio Engineering for Fixed Telegraph and Telephone Service	2.5
34	Information, Education and Communication in Family Planning (Seminar)	1
35	Economic Development (Seminar)	1.5
36	Agricultural Machinery Maintenance and Repair	6
37	Fisheries Co-operatives	6
38	Vocational Training Instructors (Machinery, Electric Electronics, Wood Working and Automotive)	10
39	Tuberculosis Control	4.5
40	Microbial Diseases	10
41	Mining Engineering	5.5
42	Radio Monitoring	1.5

No.	Subjects of Course/Seminars	Duration (Month)
43	Geodesy	6
44	Telephone Outside Plant Engineering	3.5
45	Maintenance and Improvement Engineering of Permanent Ways	3
46	Agricultural Land and Water Resources Development	2
47	Diesel Railway Rolling Stock Engineering	3.5
48	Shipping Business	2
49	Marine Environment	2
50	Television Engineering	3
51	Radio Broadcasting Techniques	1.5
52	Educational Television Programme	2.5
53	Electric Power Distribution	3
54	River Engineering	4
55	Tile Manufacturing Technology	8
56	Offset Printing	4
57	Microwave Communication Engineering (I)	3.5
58	Solid Waste Processing and Disposal	2
59	Port and Harbour Engineering	4.5
60	Bridge Engineering	3
61	Ground Water Resources	4
62	Tropical Epidemiology	9.5
63	Agricultural Statistics	3
64	Fire Service Administration	2
65	Navigation Aids	2
66	Geothermal Energy	2.5
67	Electronics	4
68	Health and Biological Aspects in Family Planning (Seminar)	1
69	Industrial Design	3
70	Business Feasibility Study and Management Practice	7
	Marine Fisheries Research (II)	6.5
71	Rice Processing	3
72	Telex Communication Engineering	3.5
73	Satellite Communication Engineering (II)	3
74	Water Pollution Control and Sewage Works Engineering	3

No.	Subjects of Course/Seminars	Duration (Month)
75	Freshwater Fish-culture and Propagation Research	3.5
76	Afforestation Techniques and Administration	3
77	Indirect Taxation	2
78	Direct Taxation	2
79	Administration of Criminal Justice	3
80	Seismology and Earthquake Engineering	11
81	Tourism B (Seminar)	2
82	Prevention of Narcotic Offences (Seminar)	1
83	Subway Engineering	2
84	Microwave Communication Engineering (II)	3.5
85	Pollution Control Technology (Seminar)	1
86	Statistics (General Course)	6
87	Development Economist (Industrial Project)	2
88	Computer Technology	3
89	Meteorology	4
90	Aerodrome (Seminar)	1
91	Customs Techniques (Seminar)	1.5
92	Plastic Technics	5.5
93	Metrology and Measurement Standards	6
94	Refractory Manufacturing Technology	6
95	Trade Promotion B (Seminar)	2
96	Welding Engineering	6
97	Agricultural Co-operatives	3
98	Taxation (Seminar) (Seminar Course)	2 w
99	Vocational Training (Seminar)	2.5
100	Clinical Oncology	5
101	Industrial Safety and Health (Seminar)	1.5
102	Highway Construction (Seminar)	1.5
103	Community Based Family Planning (Seminar)	1
104	Railway Electrification and High Speed Operation	2
105	Traffic Police Administration	1.5
106	City Planning	2
107	Telecommunication Management	2 w
108	Electric Power Management	2



No.	Subjects of Courses	Duration (Month)
109	Shipbuilding	3
110	Laboratory Works for Tuberculosis Control	4
111	Early Gastric Cancer Detection	2
112	Administration for Seaman's Education	1
113	Telephone Switching Engineering	3.5
114	Physical Oceanographic Survey	4.5
115	Ceramic Engineering	11
116	Broadcasting Management (Seminar)	2 w
117	Electrical Steel Making	3
118	Industrial Standardization and Quality Control	3
119	Smaller Enterprise Development and Management	2.5
120	Satellite Communication Engineering (I)	3
121	International Telegraph and Telephone Traffic	3
122	Wood Industrial Machinery Engineering	3
123	Metal Works and Engineering	9
124	Radiography	4
125	Prevention and Treatment of Crime and Delinquency (Seminar) (Senior Class)	1.5
126	Environmental Executives' Seminar	1
127	Railway Signal Engineering	4
128	Public Administration Officers on Women's Problems (Seminar)	1
129	Family Planning Administration for Senior Officers in Asia (Seminar)	1
130	Postal Executives (Seminar)	2 w
131	Telecommunication Development (Seminar)	2 w
132	Local Government	3
	Vegetable Crops Production	9.5
	Irrigation and Drainage	9.5
	Rice Cultivation and its Extension	9.5
	Rice Production Mechanization	9.5



*Group training course on the control of paddy diseases and insect pests*

### 3. Training in Third Countries

Training in third countries is designed to conduct training at suitable training institutes abroad for participants from neighbouring countries with similar cultural, social and natural conditions. Under this programme, training courses are given in collaboration with the host country, Japan providing the participants with travelling expenses, living expenses, training expenses, and all other miscellaneous expenses incidental to the training.

In 1976, a training course in carrier transmission technology was conducted for two months from mid-March at The National School of Telecommunications, Mexico, for five participants invited from five countries (Guatemala, Honduras, El Salvador, Nicaragua and Costa Rica) under an agreement concluded between the Japanese and Mexican governments.

### 4. Services Associated with Training Programme

#### (1) Orientation

In order to enable the participants to receive satisfactory training and enjoy a comfortable life while in Japan as well as to deepen their understanding of Japan, a one-week orientation course was given on training, daily life and situation in Japan.

#### (2) Japanese Language Courses

Two kinds of Japanese language courses were organized. They were the concentrated training course and the extra-curriculum optional course.

#### (3) Health and Welfare Services

So that all participants may keep good health and enjoy a comfortable life during their stay in Japan and attain their training objectives, they are offered medical and recreational services. The recreational services included goodwill parties, bus tours, theatre going, sports gatherings, etc. which are arranged by the Agency's international training centres.

#### 4) Aftercare Services for Ex-participants

##### a) Technical Follow-up Service

Technical follow-up service is provided by dispatching the instructors of training institutes to the organizations in developing countries with which the ex-participants are affiliated, in order to assess the effect of training in Japan and provide technical guidance which meets the actual needs in developing countries. In 1976, 6 technical follow-up teams were dispatched to Southeast Asian countries and other parts of the world.

- b) **Fostering of Alumni Associations**  
The ex-participants organize and operate alumni associations in their respective countries. The agency provided assistance to help foster their activities.
- c) **Supply of Equipment**  
In order to enable the ex-participants to fully utilize their technical capabilities gained in Japan, the Agency supplies necessary equipment to the organizations with which they are affiliated in their home countries. In 1976, such assistance in equipment supply numbered 9 cases for 9 countries.
- d) **Supply of Periodical Literatures**  
For the purpose of upgrading the technical level of the ex-participants, the Agency furnished them with 4 kinds of English periodicals covering agriculture and forestry, mining and manufacturing industry, and other sectors.
- e) **Publication and Distribution of "KENSU-IN (The Participants)"**  
This magazine, published three times a year, was distributed among the ex-participants to strengthen their bonds with the Agency as well as to promote their mutual communication and friendship.

## SECTION 2 EXPERT DISPATCH PROGRAMME

### 1. Outline

The expert dispatch programme is one of Japan's most typical technical cooperation activities which has been in operation since 28 experts were sent to five Southeast Asian countries in 1960 on the basis of the Colombo Plan.

Since the dispatch of the said 28 experts, the programme has pursued a steady course of expansion, with its coverage widened rapidly from Southeast Asia to the Middle and Near East, Africa, and Central and South America. The number of experts sent abroad under the programme exceeded 100 in 1963, 200 in 1967, 300 in 1971, and recorded 451 in 1976. The total number of experts sent since 1960 reached 4,097 by the end of March 1977.

The experts dispatched under this programme are assigned to different posts in government offices research and experiment institutes, universities and training institutes of recipient countries to render services in the following four categories.

- (1) Provide assistance in planning and policy making for socio-economic development
- (2) Offer guidance in technical education and training
- (3) Provide consulting services for development programmes
- (4) Offer guidance in the operation, maintenance and repair of machinery and equipment

Following the diversification of Japan's technical cooperation activities as seen in the amplified sectorwise cooperation which started from about 1969 and the resultant increase of project-based cooperation, there have arisen notable divergence in the recipient countries' expectation for experts' services, especially in respect of their speciality and functions.

### 2. Performance in 1976

In 1976, a total of 451 experts were dispatched abroad to add to the 364 experts who had been continuously engaged in overseas service from the preceding year. Of these 451 experts, 390 were sent on a government-to-government basis and 61 to international organizations. Compared with 1975 when 374 experts were newly dispatched, 1976 recorded a far larger number of 451.

By region, the number showed little difference for Asia but increased considerably for the Middle and Near East, Africa, and Central and South America com-

pared with 1975 (See Fig. 1).

As for the term of service, the experts sent for more than a year recorded large numbers for the Middle and Near East, Africa, and Central and South America, and those sent for less than a year were large in number for southeast Asia.

Seen by region and country, Indonesia registered the largest number of 47 in Asia, followed by Korea (26), Burma (18), the Philippines (13), and Thailand (12). As for the Middle and Near East and Africa, 18 experts were sent to Iran, 17 to Tanzania, and 13 to Ethiopia. In Central and South America, Brazil (16) and Mexico (12) figured prominently.

Most of the international organizations to which 61 experts were newly dispatched in 1976 are located in Asia, and they include the Southeast Asian Fisheries Development Centre (SEAFDEC), the Asian Institute of Technology (AIT), UN Economic and Social Commission in Asia and the Pacific.

Seen by sector, 14.2% of the newly dispatched experts was accounted for by agriculture, 11.8% by fisheries, 11.5% by telecommunications, broadcasting and postal services, 10.2% by construction, 6.0% by public works (telephone network construction), 6.7% each by transportation and education, and 14.0% by others (See Fig. 2). Recent years have been increasing dispatch of fisheries experts due to the growing demand for Japan's technical cooperation in fisheries development made necessary to cope with the adoption of 200-mile economic zone. 34.4% of all newly dispatched experts were assigned to infrastructural improvement in such sectors as telecommunications, broadcasting and postal services, construction, public works, and transportation. According to the kind of services, more than half of the newly dispatched experts were assigned to the task of providing guidance in technical education and training as well as consulting service for development programmes.

The Agency also dispatched a review mission to developing countries to review and evaluate the progress of Japan's overseas cooperation activities and to discuss with the government of each recipient country the future course of cooperation.

A brief description is given below on Japan's cooperation with the Southeast Asian Fisheries Development Centre (SEAFDEC) which was organized in December 1967 to promote the fisheries development in Southeast Asian countries. At present the centre has its Secretariat and Training Department located in Thailand, Research Department in Singapore, and Aquaculture Department in the Philippines.

SEAFDEC is operated in accordance with the agreement concluded for its establishment as well as with the operational policies adopted at the annual meeting of its council. The functions of the 3 departments and the activities they have so far performed are outlined below.

Fig. 1 Dispatch of Experts by Region (1976)

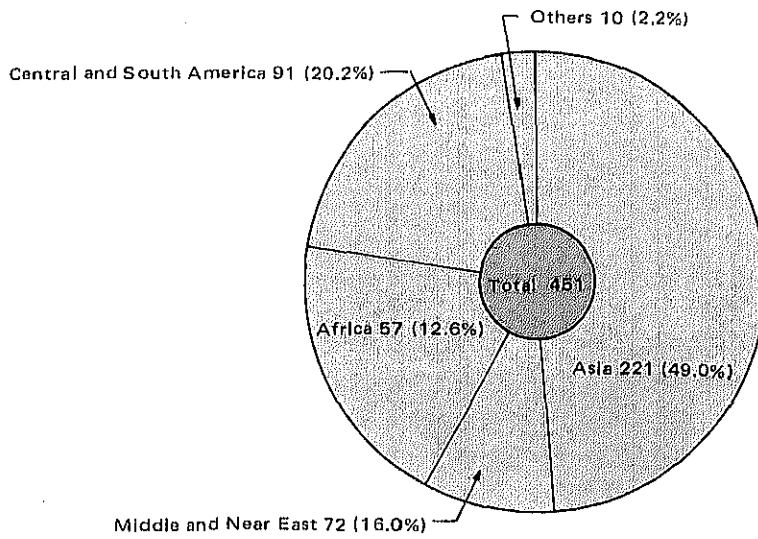
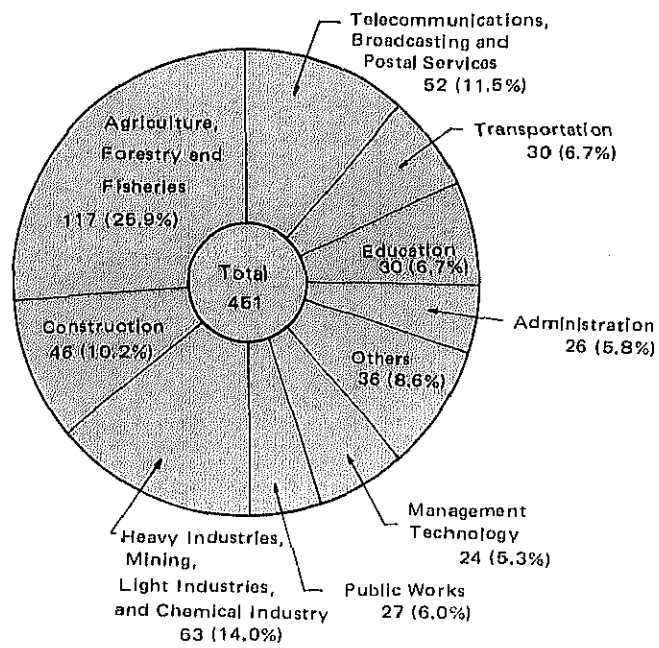
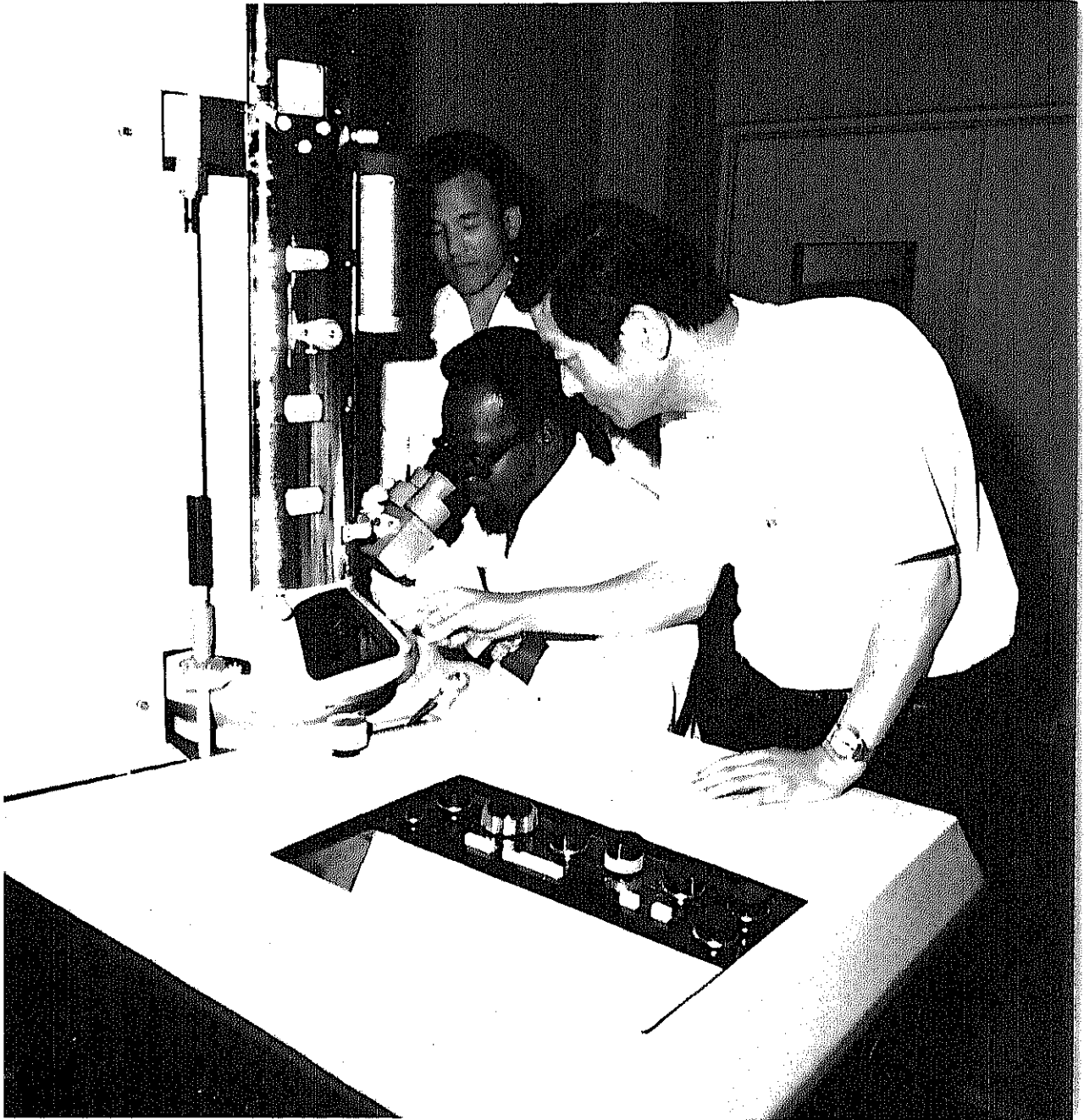


Fig. 2 Dispatch of Experts by Sector (1976)





*Participants using an electron microscope in the microbial diseases training course*



(1) Training Department

This department is engaged mainly in the training of engineers and technicians in fisheries and studies of fishing techniques and fishing gear. Besides lectures given on land, practical training is offered aboard a training vessel "PAKNAN" with emphasis on developing practical skills in handling fishing gear and other equipment.

In 1976, the Agency sent 8 experts to the department.

(2) Research Department

Development of fishing grounds, survey of marine resources and oceanographic observation are the main tasks of this department. Investigation is focused on the development of new fishing grounds through experimental operations, carried out by "CHANGI," a fisheries research vessel.

In 1976, the Agency sent experts to the department for continued study of the coastal waters pollution problem which was taken up in 1975, and dispatched a survey team for development of marine products processing techniques proposed by the Singapore government.

In 1976, the Agency sent 14 experts to the department.

(3) Aquaculture Department

This department is engaged in the researches of fish and shellfish culture centering on shrimp, training of fisheries experts, and dissemination of aquacultural knowledge and information.

In 1976, the Agency sent 12 experts, and procured and delivered 45 million yen worth of equipment to the department.

## SECTION 3 EQUIPMENT SUPPLY PROGRAMME

### 1. Outline

The equipment supply programme, initiated in 1964 as part of Japan's technical cooperation activities, is designed to supply equipment necessary for the activities of the repatriated participants, Japanese experts and their counterparts in those developing countries which suffer from the shortage of such equipment. It is implemented as a means of technology transfer to developing countries in the form of an organic combination of personnel and equipment.

Assistance under this programme is requested strongly by those developing countries which find it difficult to afford sufficient quantities of equipment for financial reasons.

With more than 10 years having elapsed since its institution, this programme has gained due recognition of all parties concerned in both recipient countries and Japan. Up to the end of fiscal year 1976, 2,107 million yen worth of equipment was supplied on 351 occasions.

### 2. Performance in 1976

In 1976, 356 million yen worth of equipment was supplied in a total of 30 cases. Seen by region, Asia registered 14 cases amounting to 218 million yen (61.0%), Middle and Near East 6 cases amounting 31 million yen (8.6%), Africa 3 cases amounting to 39 million yen (11.0%), and Central and South America 7 cases amounting 69 million yen (19.3%)

## SECTION 4 TECHNICAL COOPERATION CENTRE PROGRAMME

### 1. Outline

Cooperation under the Technical Cooperation Centre Programme, which was inaugurated in 1957, now carries a heavy weight in Japan's overseas technical cooperation activities. Cooperation under this programme is generally offered on the basis of agreements between the governments of the recipient countries and Japan concerning the establishment and operation of Centres. In certain cases, it is offered in accordance with a Record of Discussions agreed upon for the implementation of a specific project and signed by the competent authorities of both countries. In either case, the Japanese government supplies equipment and materials required for the establishment and operation of centres, dispatches experts and undertakes training of their counterparts in Japan, whereas the government of the recipient country is required to secure the site and building of the Centre, provide the services of counterpart personnel, and defray the Centre's operational expenses.

In 1976, the programme covered a total of 29 Centres, of which 22 were operated under agreements or Records of Discussions including those extended after termination of the cooperation period, and 7 were at the stage of preliminary survey or planning (See Table 1). The programme covers diverse fields such as telecommunications and broadcasting, fisheries, road construction, small scale industry, livestock farming, vocational training, and so forth.

Cooperation under this programme, which is offered with a view to training and upbringing engineers and skilled workers whose services are required for socio-economic improvement of developing countries, can be broadly classified as follows.

- (1) Cooperation in manpower resources development aimed at upbringing of middle level engineers and skilled workers
- (2) Cooperation in research development such as experimental schemes
- (3) Cooperation in development and improvement of production techniques
- (4) Cooperation in vocational education

### 2. Performance in 1976

In 1976, the programme covered a total of 29 Centres including those under planning or survey. Specifically, the cooperation so far offered was amplified by the following 4 new projects.

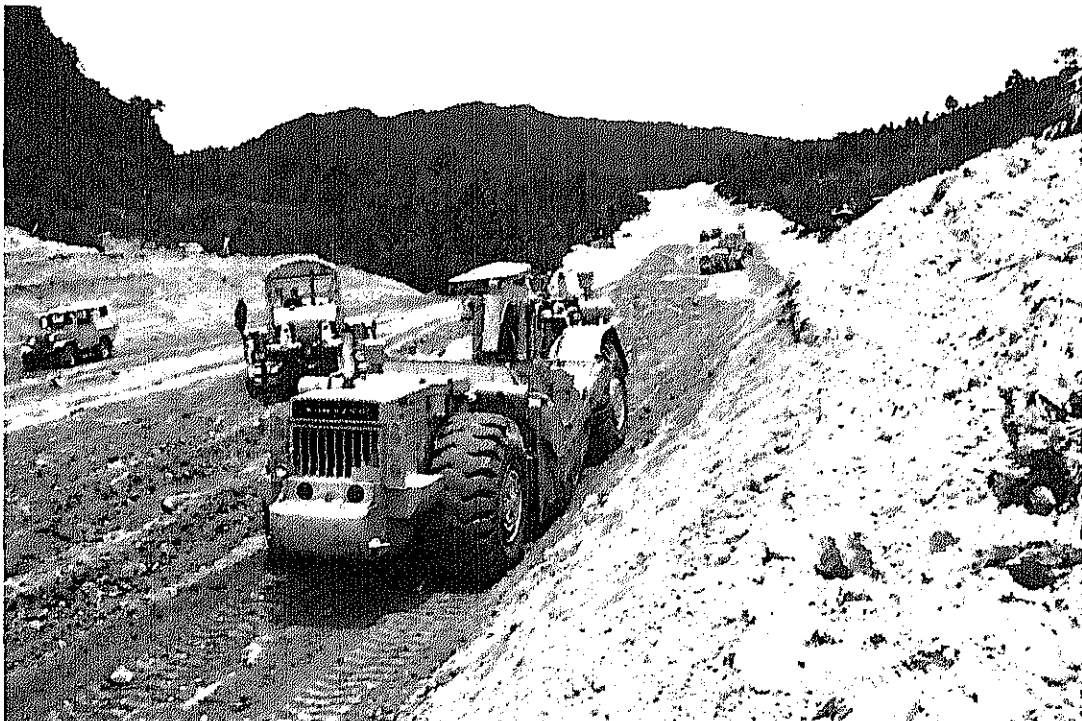
- (1) Ceramic Research and Development Centre, the Philippines

- (2) MARA Vocational Training Institute at Johor Bharu, Malaysia
- (3) Arab Maritime Transport Academy, Egypt
- (4) Transport Training Centre, the Philippines

To cooperate in the operation of these new Centres, the Agency sent experts and received counterparts for training in Japan for Ceramic Research and Development Centre in the Philippines, and received counterparts for training in Japan from MARA Vocational Training Institute at Johor Bharu in Malaysia, Arab Maritime Transport Academy in Egypt, and Transport Training Centre in the Philippines.

A total of 57 counterparts were received from different Centres including the newly established ones for training in Japan under the Training Programme for Overseas Participants.

In addition, preliminary survey teams were sent abroad to study the possibility of cooperating in the operation of the Centres or projects under planning which are listed below.



*Road construction work undertaken by Technical Cooperation Centre for Road Construction and Training at Surat Thani, Thailand*

- (1) Institute for Skill Development in the Northeast of Thailand, Thailand
- (2) Furniture Industry Development Centre, Thailand
- (3) Bridge Engineering Training Centre, Burma
- (4) Electronic Service Centre of the Royal Scientific Society, Jordan
- (5) Technical Cooperation Project on Mining Safety, Peru
- (6) Tunisian National Fisheries Institute, Tunisia

To provide continued assistance in the operation of La Escuela Nacional de Telecomunicaciones (The National School of Telecommunications) in Mexico after termination of the cooperation agreement, experts were sent under the Expert Dispatch Programme. These experts returned to Japan upon expiration of their term of service in November 1976.

**Table 1 Present Situation of Technical Cooperation Centres**

(March 31, 1977)

Centre	Scope of Cooperation
<b>I. Centres Brought to Termination of Co-operation Period</b>	
(1) La Escuela Nacional de Telecomunicaciones (The National School of Telecommunications), Mexico	Carrier transmission, microwave, telephone network, and telegraph network
<b>II. Centres in Continued Operation</b>	
1. Centres operated under agreements	
(1) Technical Cooperation Centre for Road Construction and Training at Surat Thani, Thailand	Civil engineering, machinery, pavement work, and construction technology
(2) Marine Engineering Training Project, Malaysia	Marine engineering and marine engine

Centre	Scope of Cooperation
(3) Sulawesi Industrial Vocational Training Centre, Indonesia	Metal working, electricity, wood working, construction, and automobile maintenance and repair
(4) Sri Lanka Fisheries Training Centre, Sri Lanka	Fisheries, marine engine, fishing techniques, and fishing gear
(5) Fish Processing Centre, Peru	Development of processed marine products for food, and research on marine products processing techniques
(6) Japanese-Korean Daejeon Vocational Training Institute, Korea	Welding, electricity, metal finishing, electronics, and machinery
(7) Shoubra Vocational Training Centre for Machinery Maintenance, Egypt	Metal working, textiles, and electricity
2. Centres operated under Records of Discussions	
(1) Poultry Disease Control Centre, Syria	Diagnosis, preventive measures, and research and extension activities for control of poultry diseases
(2) Istanbul Fisheries and Water Products Vocational High School, Turkey	Fisheries education, propagation techniques, and fishing methods
(3) Vocational Training Centre of Karadi, Iran	Electricity, electronics, road construction, and machinery maintenance and repair
(4) Riyadh Electronics Technical Institute, Saudi Arabia	Radio and TV engineering, telecommunications, and electronic measurement
(5) National Youth Service Advanced Training Centre, Kenya	Mechanical engineering, electric work, and finishing
(6) Iraq Electrical and Electronic Industrial Training Centre, Iraq	Elevator, refrigerator, air conditioner, TV and radio engineering, and portable computer

Centre	Scope of Cooperation
<p>3. Centres operated after termination of agreements or Records of Discussions</p> <p>(1) King Mongkut's Institute of Technology, Thailand</p> <p>(2) Pakistan Telecommunication Research Centre, Pakistan</p> <p>(3) Iran Telecommunication Research Centre, Iran</p>	<p>Microwave, wire communication equipment, computer, control engineering, broadcasting engineering, carrier transmission, radio engineering, and electronic circuit design</p> <p>Microwave, carrier transmission, telephone exchange, telegraph network, and power supply</p> <p>Wireless, telephone, microwave, carrier transmission, telegraph, radio wave regulation, and lines</p>
<p>III. New Centres</p>	
<p>1. Centres operated under agreements or Records of Discussions</p> <p>(1) Ceramic Research and Development Centre, the Philippines</p> <p>(2) MARA Vocational Training Institute at Johor Bharu, Malaysia</p> <p>(3) Arab Maritime Transport Academy, Egypt</p> <p>(4) Furniture Industry Development Centre, Thailand</p> <p>(5) Transport Training Centre, the Philippines</p>	<p>Ceramics</p> <p>Marine engine, welding (shipbuilding), and electroplating</p> <p>Seamen's Training Centre (Deck, Engine and Electricity), Navigation Department, and Engine Department</p> <p>Furniture making and design</p> <p>Traffic planning, traffic engineering, and traffic control</p>
<p>2. Centres under planning or survey</p> <p>(1) Institute for Skill Development in the Northeast of Thailand, Thailand</p>	

Centre	Scope of Cooperation
<p>(2) Bridge Engineering Training Centre, Burma</p> <p>(3) Electronic Service Centre of the Royal Scientific Society, Jordan</p> <p>(4) Tunisian National Fisheries Institute, Tunisia</p> <p>(5) Kilimanjaro Industrial Development Centre, Tanzania</p> <p>(6) Centro de Entrenamiento Vocacional, Paraguay</p> <p>(7) Technical Cooperation Project on Mine Safety, Peru</p>	



*Shipboard training by Sri Lanka Fisheries Training Centre, Sri Lanka*



## SECTION 5 DEVELOPMENT SURVEY PROGRAMME

### 1. Outline

The term "development survey" means all such activities as "formation of survey teams composed of experts, their dispatch to developing countries to conduct field survey for public development projects, and pre- and post-survey works in Japan including the preparation of survey reports of detailed designs for the promotion of such development projects."

Promotion of comprehensive regional development projects and public development projects bears closely upon the socio-economic progress of developing countries, and it has often been the case that the Japanese government is requested by these countries to cooperate in the planning of such comprehensive or individual development projects. To meet such requests, the Agency conducts development surveys as part of Japan's government-sponsored technical cooperation.

The phase and purpose of the surveys vary largely according to the nature or objectives of each individual project for which cooperation is requested by the recipient country. Specifically, the development surveys can be broadly classified as follows.

- a) Surveys called "reconnaissance survey", "preliminary survey" and "basic survey" which are carried out to formulate the master plan of the project and chart its course, or to pass judgement as to whether it is desirable to proceed to the next stage of survey, i.e., feasibility study.
- b) "Feasibility study" which is conducted to map out the facilities construction plan and the implementation plan for the project, and to provide comments and recommendations on the project feasibility from economic, financial and technical viewpoints.
- c) "Surveys for detailed design" which are aimed at providing various data, detailed designs, specifications, etc. required for construction work under the project. A more detailed explanation is given below on these surveys according to project phasing.

#### (1) Surveys for Preparation of Master Plan

In recent years, development projects have become increasingly larger in scale and many of them are intended for comprehensive regional development, and it is often the case that a project embraces a number of related projects in the same development sector. Accordingly, surveys for such projects should start with the preparation of a

comprehensive and basic project plan usually called "Master Plan." Surveys of this type are for the purpose of providing the basic data for socio-economic development strategy.

#### (2) Surveys for Preparation of Maps and Charts

These surveys are aimed at preparation of the topographical maps for national land development which serve as the basic data essential for planning development projects. In many developing countries, planning of development projects in various fields is hindered by a lack of fundamental maps. Surveys for preparation of maps and charts therefore play a very important role in the planning of various development programmes or projects in such countries.

#### (3) Pre-feasibility Study

The pre-feasibility study comprises the project finding survey and the preliminary survey.

The project finding survey, intended for positive selection and screening of promising projects, is conducted to study the background of the development cooperation request, the importance of the candidate projects in the whole socio-economic development plan, the relationship between the candidate projects and the related projects which are already in progress or under planning, and possible linkage with financial cooperation.

The preliminary survey, on the other hand, is performed to assure that the fullscale feasibility study for the cooperation project can be carried out efficiently, and covers such activities as the fundamental data collection including field surveys in the project area and discussions with competent authorities of the recipient country regarding the scope of the feasibility study.

#### (4) Feasibility Study

The feasibility study constitutes the nucleus of all development surveys. It is carried out to study the technical and economic feasibility of each project, to make recommendations on its implementation, and to prepare the feasibility report for the government of the recipient country. The feasibility report thus prepared serves as the fundamental data to seek financial aid from Japan or international financing organizations for project implementation.

In this study, the comprehensive technical knowledge related to the project and Japan's high level of technology are fully utilized. The feasibility study requires a longer period than any other development surveys and consequently makes it possible to transfer project-related technical knowledges to the recipient country during the survey period. This is therefore a valued means of technical cooperation.

(5) Surveys Directly Related to Financial Cooperation

These surveys are conducted in direct relation to or for the extension of yen credit and other financial cooperation. It is expected that surveys of this type will increase in the coming years and break the financial bottleneck in government-sponsored technical cooperation.

(6) Surveys Directly Related to Grant Aid Programme

These Surveys have been conducted increasingly in recent years with the growing demand for Japan's grant aid programme. Financial aid of this type needs to be preceded by a careful study of the outline, scale and fund requirement of the project for which the aid is requested. These surveys are intended to acquire a firm grasp of the purpose of such projects and collect relevant data in order to prepare fundamental designs. Hence, they may be considered basic surveys for cooperation by grant aid.

(7) Surveys for Preparation of Detailed Designs

These surveys are for the purpose of obtaining various data (including final drawings and specifications) needed to implement construction work on a planned project. Since utmost precision is demanded for the preparation of a detailed project design and other related works, these surveys are usually costly and time-consuming. There has been growing demand for Japan's cooperation in such surveys.

(8) Basic Surveys for Resources Development Cooperation

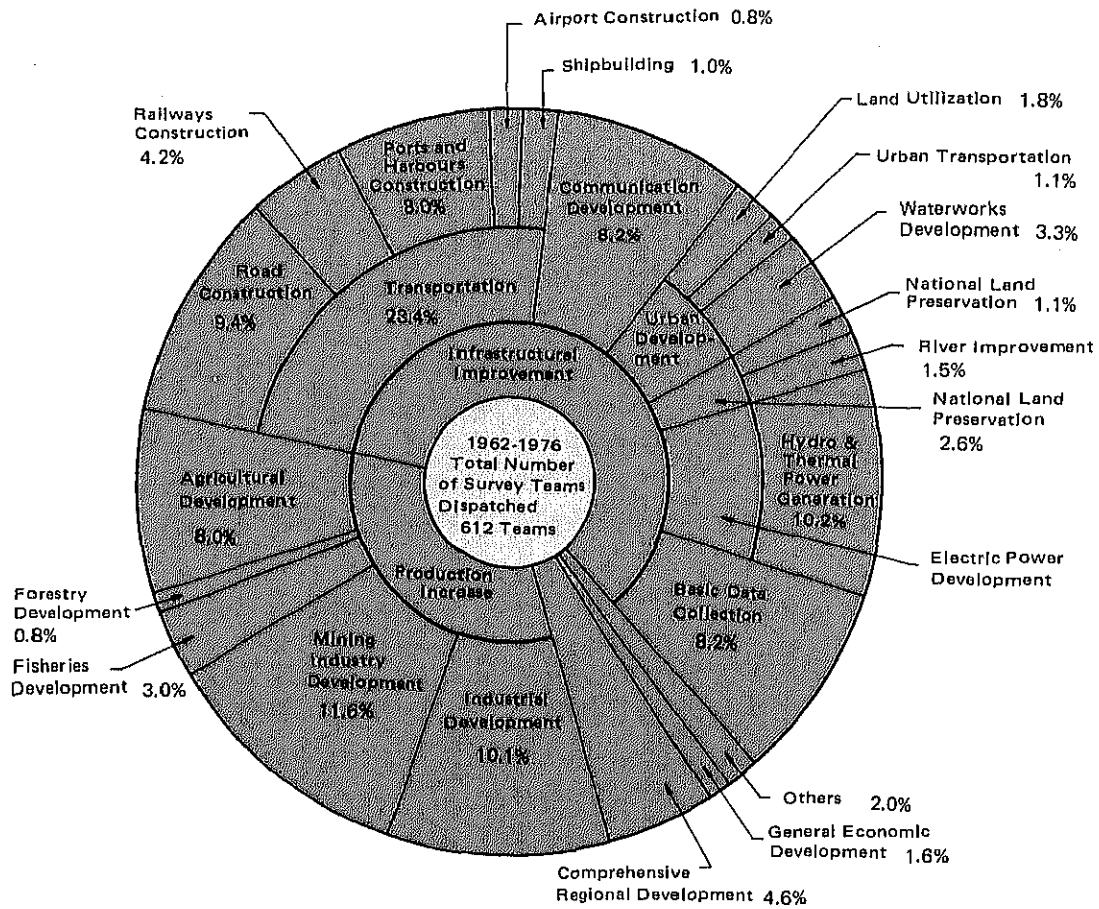
These surveys have been conducted since 1970 to explore mineral deposits by geological surveys, bioprospecting, boring surveys, and the like. Surveys for resources development are hindered or at stand-still in many developing countries due to shortages of necessary equipment, engineers and funds. Surveys for resources development cooperation are intended to provide such countries with fundamental data for natural resources development.

(9) Surveys for Aftercare Services

While development surveys are conducted in various phases as previously mentioned, it is occasionally necessary to expound a survey report after its completion or to reexamine the project after the lapse of several years. These surveys are carried out for that purpose.

Fig. 1 shows the total number and sector-wise percentages of development surveys conducted from 1962 to 1976.

Fig. 1 Survey by Sector



## 2. Performance in 1976

In 1976, development surveys were conducted for a total of 132 projects, which were covered by 113 Japanese survey teams dispatched abroad, with a budgetary appropriation of 8,215 million yen.

The survey activities carried out in 1976 are outlined below.

Country	Name of Survey	Outline of Survey
Burma	Survey for Telephone Plant Planning Project	The project aims at installation of telephone exchanges, telephone lines and telephones for improvement of the country's telephone network. On the basis of the preliminary survey conducted in 1976, a survey for detailed design was conducted in 1976 for installation of telephone plants in Mayagon district of Rangoon and in Maymyo in the suburbs of Mandalay, with report prepared and submitted with explanation.
	Survey for Oil Refinery Construction Project	In 1975, a field survey was conducted for construction of a new oil refinery. In 1976, a report on the project was prepared on the basis of the said survey and presented to Burmese government.
	Survey for Monywa Area Resources Development Cooperation Project	The possibility of developing Monywa mine has been studied under a four-year plan starting in 1972, which disclosed the presence of an ore reserve of 36,000,000 MT with an average grade of 0.8517 and a metal content of 306,360 MT. In 1976, analysis of survey data was conducted in Japan as the final year cooperation in the project.
Indonesia	Survey for Wonogiri Irrigation and River Improvement Project	In 1975, a field survey was conducted for the project which aims at the construction of Wonogiri multi-purpose dam and river improvement. In 1976, a draft final report was prepared on the basis of the said survey and subjected to discussions with Indonesian authorities, and the final report was prepared.

Country	Name of Survey	Outline of Survey
Indonesia	Survey for Central and East Java Road Betterment Project	In 1975, a field survey was conducted for the project, covering 4 sections (approx. 330 km) of national and provincial road network in the southern part of Central and East Java. In 1976, an interim report was prepared for discussion with Indonesian authorities, and the draft final report was also prepared and presented to Indonesian government with explanation.
	Survey for Basic and Practical Study for Master Plan in Land Erosion and Volcanic Debris Control in Mt. Merapi Area	In 1975, a preliminary survey was conducted to prepare a basic plan for comprehensive control of land erosion and volcanic debris in Mt. Merapi area, Central Java. On the basis of this survey, it was decided to conduct surveys from 1976 to 1979 to prepare a Master Plan for disaster preventive programme covering control facilities and warning and evacuation systems. In 1976, air-photo taking and preparation of topographic maps were undertaken.
	Survey for Overall Ular River Improvement Project	The project aims at overall improvement (flood control, water utilization and erosion control) of the Ular river rising in the environs of Lake Toba, North Sumatra. In 1976, a preliminary survey was conducted for preparation of a comprehensive river improvement plan. In 1976, a field survey for preparation of a Master Plan was conducted, and an interim report was prepared.
	Survey for Mapping for Master Plan of Central South Sulawesi Water Resources Development Project	In 1975, a preliminary survey was conducted for the project which aims at development of water resources in the basins (approx. 11,000 km <sup>2</sup> ) of the Walanae, the Bila and the Cenranae flowing in the neighbourhood of Lake Tempe, South Sulawesi. In 1976, hydrologic experts were dispatched to collect data necessary for preparation

Country	Name of Survey	Outline of Survey
Indonesia (Cont'd)		of the development plan, which was followed by topographic survey and air-photo taking required for formulation of a Master Plan.
	Survey for Jakarta Ring Road Project	The project aims at solving traffic congestion in Jakarta by constructing a ring road linking city roads in Jakarta with 3 local roads. In 1976, a preliminary survey and a feasibility study were conducted for the project, with studies also made on the possibility of charging a toll on the ring road.
	Survey for Banjarmasin Ports Development Project	In 1975, a preliminary survey was conducted for the project which aims at the development of Banjarmasin port to promote the development of Central and South Kalimantan provinces. In 1976, a feasibility study was conducted for the project.
	Survey for Northern and Western Sumatra Tourism Development Project	The project aims at tourism development and nature conservation in Western Sumatra area extending around Padang and in Northern Sumatra area around Lake Toba. To collect basic data for a feasibility study to be conducted for formulation of a Master Plan covering tourism development and infrastructural improvement, a preliminary survey was conducted in 1976.
	Survey for Extension Project of Bitung Port Project	The project aims at expanding Bitung port situated at the northernmost end of Sulawesi in order to cope with the conspicuous increase of cargo handling requirement. In 1976, a preliminary survey was conducted for the project to provide the basis for feasibility study.
	Survey for Forest Inventory on Management and Logging Project in Central Java	The project aims at efficient utilization of the national pine forest located at Pekalongan, Central Java, by making an inventory to grasp its stand

Country	Name of Survey	Outline of Survey
Indonesia (Cont'd)		density and examine its yield system. In 1976, a preliminary survey was conducted for collection of data and determination of scope of survey, which was followed by airphoto taking, mapping and forest analysis in order to gain a firm grasp of existing forest resources and examine the yield system.
	Survey for Regional Planning, East Java Province	In order to study the development potentials of East Java, Central Java and Jogjakarta region and formulate a comprehensive regional development plan of these areas, the survey was conducted in East Java in 1975 and in Central Java and Jogjakarta region in 1976.
	Survey for Ujung Padang Industrial Estate Construction Project	The project aims at constructing an industrial estate in Ujung Padang and neighbouring area in South Sulawesi province, Sulawesi. For the purpose of selecting the estate site and studying the infrastructural suitability of its environs, a preliminary survey was conducted in 1975. In 1976, a feasibility study was conducted and its report was presented to Indonesian government.
	Survey for Sadang Hydropower Generation Development Project	The project aims at comprehensive hydropower development in the Sadang river basin situated 150 km to the north of Ujung Pandang, Sulawesi, as well as in the basins of its two tributaries, the Mamasa and the Matallo. The feasibility study for this project conducted in 1974 and 1975 was continued in 1976.
	Geological Survey for Mineral Development Project in Kalimantan Region	Aerial magnetic prospecting and airphoto taking were conducted in 1976 to study the occurrence possibility of mineral resources in an area of about 36,000 km <sup>2</sup> in Central Kalimantan.



Country	Name of Survey	Outline of Survey
Korea	Survey by Technical Advisory Team for Subway Project (Route No. 2)	The project aims at construction of Subway Route No. 2 (loop line - 49.8 km) as part of Rapid Transit Network Project, Seoul Capital Region. In 1976, a field survey covering part of the said route, Mojingdon - Sokyodong section with a distance of 17.8 km, was conducted in collaboration with Korean experts to clarify technical problems involved in the planning and execution of the project, and a report containing proposed measures for their solution was presented to Korean government.
	Survey for Tidal Reclamation on the West-Southern Coast	The project is related to tidal reclamation scheme of west-southern coast. In 1976, a pre-feasibility study was conducted to examine the scope and details of Japan's cooperation in the project.
Malaysia	Survey for Penang Sewerage and Drainage Project in Butterworth/Bukit Mertajam, Metropolitan Area	The project aims at development of sewerage and drainage systems in Butterworth and Bukit Mertajam, Penang province. In 1976, a preliminary survey and a field survey for master plan formulation were conducted, and an interim report was prepared on the strength of discussions held with Malaysian authorities on the progress report.
	Survey for Master Plan on Petroleum Industry	As a preliminary survey for preparation of a Master Plan on petroleum industry development, discussions on fundamental problems were held with Malaysian authorities in 1976. This was followed by the dispatch of a team for data collection and confirmation of the crude oil and natural gas reserve as well as by a field reconnaissance.
Pakistan	Survey for Central Telecommunication Research Laboratories Construction Project	The Telecommunication Research Laboratory at Haripur, constructed in 1964 with Japan's technical cooperation, has played an important

Country	Name of Survey	Outline of Survey
Pakistan		<p>role as the only comprehensive telecommunication research centre in Pakistan.</p> <p>For the project which aims at construction of new Central Research Laboratories at Islamabad, a field survey was conducted and a draft report of detailed design was prepared. After discussions with Pakistani authorities on the draft report, a final report was completed and presented to Pakistani government.</p>
Bangladesh	Survey for Television Construction Project	The project aims at construction of an auditorium of B.T.V. Television Station at Rampura. In 1976, a survey was conducted for the project to establish design standards of the auditorium.
	Survey for Narayanganj Narshindi Irrigation Project	A preliminary survey consisting of pre-survey discussions and a field reconnaissance was conducted to map out an irrigation structures construction plan and a flood control plan for the rain-fed field area (approx. 50,000 ha) in Narshindi area.
	Survey for Jamuna River Bridge Construction Project	The project aims at constructing a bridge across the Jamuna river to link Dacca with the north-western area of Bangladesh. The feasibility study for this project, which started in 1973, was completed in 1975 and the final report was prepared. In 1976, the final report was presented to Bangladesh government with explanation.
The Philippines	Survey for Pan-Philippine Highway-Ferry Service Project	The project aims at inaugurating ferry service across San Bernardino Strait and Surigao Strait. A field survey for the project was conducted in 1975, and a report based thereon was prepared in 1976 and presented with explanation.

Country	Name of Survey	Outline of Survey
The Philip- pines (Cont'd)	Survey for Subway Construc- tion Project (Route No. 1) in Manila	The project aims at constructing subway line (Route No. 1 covering a distance of 21.7 km between Quezon and Manila airport via business center of Manila). In 1975, a feasibility study was conducted for the project. In 1976, a report on the feasibility study was completed and forwarded to the Philippine authorities.
	Survey for the Pashig Potrero River Flood Control and Land Erosion Control Project	A preliminary survey was conducted for the project which aims at flood and erosion control in the Pashig Potrero river basin, Pampanga province, one of the most important agricultural areas in Luzon island.
	Survey for the Flood Forecast- ing System Project	The project aims at establishing a flood forecast- ing and warning system for main rivers in Luzon island. Activities in 1976 included a field survey in the basins of the Agno, the Bicol and the Cagayan, collection of basic hydrological, meteo- rological and river data, and selection of suitable sites of observation stations. These activities were followed by a radio wave propagation survey and a supplementary hydrological and river survey, and a draft report was prepared on the basis of the findings of these surveys.
	Survey for C-3 and R-4 High- way Construction Project	The project aims at constructing an arterial road network and a mass transit network on the basis of the survey conducted for 2 years from 1971 for Greater Manila Urban Transport Facilities Project. In 1976, a preliminary survey was conducted for construction of uncompleted sections of route C-3 of loop road and route R-4 of radial road.
	Survey for Extension Plan of the National Hydraulic Re- search Centre Project	The project aims at expansion of National Hydraulic Research Center in order to promote Water Resources Development Scheme. In 1976, a

Country	Name of Survey	Outline of Survey
The Philip- pines (Cont'd)	Survey for the Grain Terminal Construction Project in Manila and Cebu	preliminary survey was conducted to collect data necessary for determining the scope of Japan's cooperation and for selecting construction machinery and hydraulic test equipment requested to be supplied for the project implementation.
	Survey for Development of Agriculture in Bohol Island	The project aims at construction of terminal silos at main ports for the purpose of rationalizing the distribution of grains, stabilizing their supply and prices, increasing their storage for release in an emergency and disasters, and improving their quality. In 1976, a preliminary survey was conducted for the project, with a feasibility study also carried out for part of the project, i.e., silo construction in Manila and Cebu.
	Survey for Cagayan Integrated Agricultural Development Pro- ject	A preliminary survey was conducted for the Northeastern Basin Development Project, Bohol Island, and for the Wahing - Pamacsalan Dam Irrigation Project.
	Survey for Cagayan Integrated Agricultural Development Pro- ject	The project aims at promoting integrated agricultural development in 3 areas in Cagayan province through infrastructural improvement including construction of roads and irrigation and drainage structures and electrification of farm households in the 13,200 ha paddy field area. With the view to mapping out a construction plan of a pilot center to be operated for agricultural extension service under the project, relevant data were collected and discussions held with pertinent Philippines authorities in 1976.
Survey for Fisheries Resources Development Project	The project is aimed at developing marine resources, bonito in particular, in the Pacific Ocean along the eastern coast of the Philippine islands. In 1976, a	

Country	Name of Survey	Outline of Survey
The Philip- pines (Cont'd)		survey team was sent for consultation with the Philippine authorities on the basis of the preliminary survey conducted in 1975, and an oceanographic survey was also conducted by a fisheries survey boat supplied by Japan.
	Survey for Integrated Steel Mill Project in Mindanao Island	In 1975, a preliminary survey was conducted for the project. In 1976, a field survey was conducted for confirmation of survey items and in relation to production facilities, production capacity, raw material requirement and availability, infrastructure, related industries, analysis of financial statements, and economic effect.
	Survey for Cagayan Valley Electrification Project	The project is aimed at electrification of rural villages in Cagayan Valley in Northern Luzon. As part of this project, a survey for power transmission and substation facilities was conducted in 1974, and a field survey was conducted in 1976 to map out a power distribution plan based on the trend of demand.
	Survey for Mineral Resources Development Project in Northern Luzon Area	Deposit possibility of mineral resources in an area of about 10,000 km <sup>2</sup> in northern Luzon was studied by geological survey and geophysical prospecting, and copper mineralized zones were detected.
Sri Lanka	Survey for Outside Colombo Area Telecommunication Development Scheme - Stage II Project	A feasibility study was made for the project which is aimed at establishing a direct distance dialing network connecting six major cities and Colombo as well as at expanding the Central Telephone Office.
	Survey for Ingimitiya Reservoir Project	The project is aimed at constructing a reservoir for supplying irrigation water to the planned

Country	Name of Survey	Outline of Survey
Sri Lanka (Cont'd)		reclamation area in the northern part of Sri Lanka. In 1976, a preliminary survey was conducted and a feasibility study was also made on the basis of the results of the preliminary survey.
	Survey for Establishment of a Synthetic Textile Mill	A feasibility study was conducted to study technical and economic feasibility of constructing a textile mill to be operated for weaving, dyeing and finishing of polyester/viscose.
Thailand	Survey for Separate System Project of Metropolitan Water Supply Works	The project is aimed at expanding the waterworks network in 9 areas in the environs of Bangkok. In 1972 and 1973, a survey was conducted for 5 of the 9 areas. In 1976, a field survey was conducted for project implementation in the remaining 4 areas.
	Survey for Strengthening and/or Replacement of Steel Bridges on the Link of R.S.R.	The project is aimed at reinforcement or reconstruction of 24 existing bridges built on 4 routes having a total length of about 4,000 km and running northward and southeastward from Bangkok. In 1975, a field survey was conducted. In 1976, analysis, design and calculations were conducted, and a draft final report was prepared for discussion and reviewal with Thai authorities, which resulted in the completion and forwarding of the final report.
	Survey for Pattaya Tourism Development Project	The project aims at infrastructural improvement required for tourism development in Pattaya area. In 1976, a field survey was conducted for master plan formulation after a preliminary survey, and a progress report was presented with explanation.

Country	Name of Survey	Outline of Survey
Thailand (Cont'd)	Survey for Construction Programme of Northeastern Regional Institute for Skill Development	Basic design was completed for construction of Institute for Skill Development in Khon Kaen city, centre of northeastern Thailand.
	Survey for Detailed Design of Bangkok Telephone Network Project, 1977	The project calls for two-year survey for preparation of detailed design of local line network and junction line network of five new telephone exchanges to be constructed in Bangkok area. In 1976, part of the required field survey was conducted.
	Survey for Irrigated Agricultural Development Project in the West Bank Tract of the Greater Chao Phya	The project is aimed at comprehensive agricultural development in the west bank tract (approx. 12,300 ha) in the lower reaches of the Chao Phya, inclusive of related development such as agricultural infrastructural improvement, agricultural extension, and establishment of farmers' organizations. In 1976, a feasibility study was conducted in relation to hydrology, water utilization, soil, farm management, economic site condition, etc. to examine the project feasibility from technical and economic viewpoints.
	Survey for Quae Yai Regulating Dam Project	In 1975, two surveys were conducted for the project, i.e., a feasibility study for construction of a regulating reservoir at Ban Chao Nen power plant now under construction on the Quae Yai, and a pre-feasibility study for pumping-up power generation by the same reservoir. In 1976, a report of the surveys was completed and presented to Thai authorities.
Indonesia, Malaysia and Singapore	Survey for Electronic and Other Navigation Aid System Project in Malacca - Singapore Strait	The project aims at establishment of a modern integrated navigation aid system for assurance of navigation safety of vessels passing Malacca - Singapore Strait and Lombok - Macassar Strait.

Country	Name of Survey	Outline of Survey
Indonesia, Malaysia and Singapore (Cont'd)	Survey for Common Tide and Tidal Current Chart Project in Malacca-Singapore Strait	<p>The prefeasibility study conducted in 1975 was followed by a feasibility study conducted in 1976.</p> <p>The project is aimed at preparing a common chart of tide and tidal current for efficient utilization of Malacca - Singapore Strait. In 1976, basic data for the survey were collected and a preliminary discussion meeting was held with the participation of the representatives of the three coastal countries and Japanese experts.</p>
The Philip- pines and Thailand	Survey for Projects Finding and Screening for Development in Southeast Asian Countries	<p>The survey was conducted for the following purposes in order to ensure efficient operation of the Agency's Development Survey Programme.</p> <ol style="list-style-type: none"> <li>a. Study of the nature and objectives of the projects for which Japan's cooperation is requested by the Philippine and Thai Governments.</li> <li>b. Evaluation of the significance of such projects in the whole economic development scheme of each country.</li> <li>c. Selection and screening of the projects for which can offer her assistance.</li> </ol>
Indonesia, Malaysia, Nepal and Thailand	Survey for Projects Finding and Screening for Mining and Industrial Development in Southeast Asian Countries.	<p>The survey was conducted for the following purposes in order to ensure efficient execution of development surveys for mining and industrial development in Indonesia, Malaysia, Nepal and Thailand.</p> <ol style="list-style-type: none"> <li>a. Examination of the nature and objectives of the projects for which Japan's technical cooperation is requested.</li> <li>b. Evaluation of the significance of such projects in the whole economic development scheme in each country.</li> </ol>



Country	Name of Survey	Outline of Survey
Indonesia, Malaysia, Nepal and Thailand (Cont'd)		c. Selection and screening of the projects for which Japan's technical assistance can be offered.
Afghanistan	Survey for Television Broadcasting Construction Project	On the basis of the pre-feasibility study conducted in 1975 for the project, a field survey was conducted in 1976 for construction of Kabul TV Station, with a detailed construction plan presented with explanation for examination with Afghan authorities
Egypt	Survey for Greater Cairo Water Supply Project	In 1975, studies were made for preparation of a Master Plan of the project and an emergency measures plan, with a pre-feasibility study conducted to formulate a city water supply plan and a crude water supply plan. In 1976, a final report was presented with explanation.
	Survey for Rehabilitation of Helwan Iron and Steel Company	For improvement of production capacity of Helwan Iron and Steel Co., a field survey was conducted to clarify the causes of capacity decline of the existing pig iron plants, steel plants, rolling mills, and related facilities, as well as to map out a most efficient and workable improvement plan.
Turkey	Survey for Geological and Mineral Resources Development Project in Eastern Region	Geological survey, geophysical prospecting and boring were conducted to study the mineral resources distribution in the promising tract in an area of about 8,000 km <sup>2</sup> extending along the Black Sea in the northwestern part of Turkey, and mineralized zones of copper, lead and zinc were detected.

Country	Name of Survey	Outline of Survey
Morocco	Survey for Geological and Mineral Resources Development Project in Anti-Atlas Area	Detailed geological survey, geochemical prospecting and geophysical exploration (I.P.) were conducted to study the mineral resources distribution in an area of about 10,000 km <sup>2</sup> in Anti-Atlas area.
Iraq	Prefeasibility Study on Construction for Export Oil Refinery	A field survey was conducted for the purpose of promoting the construction of an export oil refinery, with a report prepared and presented to <i>Iraqi government</i> .
Tunisia	Survey of Electric Power Development	For the purpose of mapping out a most adequate expansion plan of power generation facilities, a survey was conducted to examine the validity of <i>pumping-up and gas turbo-generation and study the existing state and future plan of the electric system, and future prospect of energy supply.</i>
Jordan	Survey for Wadi Arab Dam Irrigation Project	The project aims at construction of an earth dam on the Wadi Arab, a tributary of the Jordan river, and at development of irrigated agriculture with water from the said dam. In 1976, a technical and economic feasibility study was conducted continuously from 1975 to study the possibility of agricultural development by the supply of irrigation water from the said dam.
Libya	Survey for Technical Cooperation in Telecommunications Project	A pre-feasibility study was conducted to study the possibility and means of Japan's technical cooperation <i>in the construction of a telecommunications vocational training centre and development of a satellite telecommunication network.</i>

Country	Name of Survey	Outline of Survey
Saudi Arabia	Survey for Rub Al Khali Desert Mapping Project	Preliminary arrangements were made with Saudi Arabian authorities for the project which is aimed at preparation of a national fundamental map of Rub Al Khali Desert (approx. 500,000 km <sup>2</sup> ).
Sudan	Survey for Road Project	A pre-feasibility study was conducted for construction of 3 road sections (515 km) in Central Sudan, which was followed by a feasibility study for construction of El Obeid - Umm Ruaba section (approx. 150 km).
	Survey on Gasaba Agricultural Development Project	For the purpose of paddy culture development in the project area along the White Nile, a reconnaissance survey was conducted in Gezira area where experimental paddy cultivation is carried out, and a discussion meeting was held with competent Sudanese authorities.
North Yemen (Yemen Arab Republic)	Survey for Agricultural Development Project	The project is aimed at promoting agricultural development in Hasa area in the north of Sana. In 1976, discussions were held with the competent Yemen authorities to find out their fundamental approach to the project and a field reconnaissance was conducted. Further, a prefeasibility survey was conducted to delineate the scope of Japan's cooperation in the project.
Ghana	Survey for Construction Plan of Noguchi Memorial Institute	In addition to the medical cooperation services provided for 8 years since 1968 to Medical School, Ghana University, it is planned that Noguchi Memorial Institute will be constructed at Ghana University under Japan's grant aid programme to improve the efficiency of technical cooperation for Ghana. In 1976, a survey was conducted to formulate basic design of the Institute.

Country	Name of Survey	Outline of Survey
Ghana (Cont'd)	Survey for Construction Plan of the Post Graduate Medical Research Institute	Following the above survey for basic design, a field survey was conducted for preparation of detailed design, and a report containing the design was submitted with explanation.
	Survey for Sugar Project in Accra Plain	In 1975, a field survey was conducted for the sugar production project which covers construction of a sugar refinery. In 1976, a report on the said survey was completed and sent to Ghanaian government.
Guinea	Survey for Mapping Project	In 1976, survey consisting of preliminary arrangements, field reconnaissance and data collection was conducted for the project.
	Survey for Agricultural Development Project in Kankan Area	A field reconnaissance and data collection were conducted with discussions also held with Guinean authorities to study the possibility of agricultural development centering on paddy production in the project area (approx. 10,000 - 12,000 ha) situated in Kankan Area in the central inland part of Guinea.
Nigeria	Survey for Agricultural Development Project	A pre-feasibility survey was conducted for agricultural development centering on paddy cultivation, and 2 areas, Imo and Bendel provinces, were selected for project implementation. This was followed by a feasibility study conducted in the said two provinces with taking account of the pilot farm construction scheme.
Kenya	Survey for Mapping Project in Eastern Area	The project aims at mapping work covering Tsuo, Lamu and Malindi areas (approx. 27,000 km <sup>2</sup> ) in the eastern part of Kenya, to be completed in a period of 5 years. In 1976, field work including control point surveying and air photo taking was

Country	Name of Survey	Outline of Survey
Kenya (Cont'd)		carried out as the 2nd year cooperation.
	Survey for Radio-FM Network Expansion Project	A Master Plan for this radio-TV network expansion project has already been formulated by a Swedish consultants company. In 1976, a field survey was conducted to confirm the feasibility of the project before putting it in execution.
	Survey for Development of Nyari Industrial Estate	The project is aimed at promoting the development of Nyari Industrial Estate for the purpose of efficient utilization of natural resources, increase of employment opportunities, and accelerated substitution for small-lot imports. In 1976, a feasibility study was made to clarify the economic importance and development effect of the project.
Niger	Survey for Transport System Consolidation Project in Western Africa	A survey was conducted to formulate a detailed plan for improvement and expansion of the transport route between Niamey and Cotonou port. Another survey for construction of a maintenance post with Japan's grant aid was also carried out.
	Survey for Projects Finding and Screening for Development in Western Africa	The survey was conducted for the following purposes in order to ensure efficient operation of the Agency's Development Survey Programme in Niger and western African area. <ul style="list-style-type: none"> <li>a. Study of the nature and objectives of the projects for which Japan's cooperation is requested.</li> <li>b. Evaluation of the significance of such projects in the whole economic development scheme.</li> <li>c. Selection and screening of the projects for which Japan can offer assistance.</li> </ul>

Country	Name of Survey	Outline of Survey
Ethiopia	Survey for Electric Power Development Plan of Lake Tana	The project is aimed at constructing Lak Tana regulating weir for capacity increase of the existing Tis Abbay power plant in order to accelerate the electrification of areas along the coast of Lake Tana, and is also intended for transmission of electric power thus obtained to the northern region of Ethiopia. Following the pre-feasibility study conducted in 1975, a feasibility study was made in 1976 with a report completed and presented to Ethiopian government.
Tanzania	Survey for Kibit-Lindi Coastal Link Road Project	The project aims at constructing Nyamwage - Lindi all-weather section (approx. 300 km, south of the Rufiji river) of the Southern Coastal Road to link Dar es Salaam and Lindi. On the basis of the field survey conducted interim report was presented with explanation and a draft final report was also prepared.
	Survey for Topographic Mapping Project in Musoma Area	The project is aimed at producing maps required as basic data for planning various development projects in Musoma area of Mara province on the east bank of Lake Victoria. In 1976, maps completed by the 3-year continuous work were presented to Tanzanian government.
	Survey for Transportation Facilities in Northern Region	The project is aimed at construction, improvement and expansion of roads, railways and port facilities between Lake Natron and Tanga port for transportation of soda ash from Lake Natron. For the purpose of overall project evaluation, survey for this project is intended to be made simultaneously with that for 'Soda Ash Development Project.' in 1975 a field survey was conducted and a draft report was prepared. In 1976, the draft report was presented with explanation for

Country	Name of Survey	Outline of Survey
Tanzania (Cont'd)		examination by Tanzanian authorities, which led to the completion and forwarding of the final report.
	Survey for Natural Soda Development in Lake Natron and Related Transportation Facilities	In 1975, a pre-feasibility study was made to establish guidelines for an optimum investment plan for natural soda development. In 1976, a final report was prepared on the basis of this pre-feasibility survey and forwarded to Tanzanian government.
	Survey for Kilimanjaro Integrated Regional Development Project	A field survey including data collection was conducted in cooperation with the Agency's 11 experts in Tanzania (Agriculture and Small-Scale Industries Development Project) to map out an implementation plan of the project.
Zaire	Survey for Trans-African Highway Project between Kisangani and Bangassou	The project aims at construction of a new road with a total length of about 6,500 km between Mombassa (Kenya) and Lagos (Nigeria). Japan undertook to conduct a feasibility study for construction of the approximately 740 km section of the said road between Kisangani and Bangassou in Zaire. In 1976, the draft final report prepared in 1975 was presented for discussion with Zaire authorities, and the final survey report was completed and forwarded to Zaire.
Gabon and São Tomé Pricipe	Survey for Fisheries Development Project in Western African Countries	A survey team was dispatched to Gabon and São Tomé Pricipe to study and confirm the contents of the request for cooperation in the project, and data needed for Japan's cooperation in the project were collected.

Country	Name of Survey	Outline of Survey
Niger, Algeria and United Arab Emirates	Survey for Projects Finding and Screening for Mining and Industrial Development	<p>For the purpose of efficient operation of Japan's technical cooperation in mining and industrial development in Niger, Algeria and United Arab Emirates, a survey was conducted with specific emphasis placed on the following.</p> <ol style="list-style-type: none"> <li>a. Examination of the nature and objectives of the projects for which Japan's cooperation is requested.</li> <li>b. Evaluation of the significance of such projects in the whole economic development scheme of each country.</li> <li>c. Selection and screening of the projects for which Japan's cooperation can be offered.</li> </ol>
Argentina	Survey for Mineral Resources Development Project	The project aims at development of mineral resources such as copper, lead and zinc in the western part of Argentina. In 1975, a field survey was conducted in a number of areas for evaluation of mineral resources, selection of survey areas, and formulation of a survey plan. In 1976, a report based on the said field survey was prepared and forwarded.
Bolivia	Survey for Topographic Mapping Project of Chapare Area	The project aims at producing topographic maps required as basic data for planning various development projects for Chapare area, Cochabamba province. Following the surveying activities conducted in 1975, a field survey including levelling, Doppler system surveying and triangulation was conducted in 1976 as third year cooperation.
	Survey for Viru-Viru International Airport Development Project	The project aims at construction of a new airport in the suburbs of Santa Cruz city which will cover the functional defects of the existing El Tronpi



Country	Name of Survey	Outline of Survey
Bolivia (Cont'd)		airport in the said city. In 1976, a pre-feasibility study was conducted for the project.
	Survey for Mineral Resources Development Project in San Vicente Area	A geological survey was conducted for clarification of grade and expanse of zinc deposit in an area of about 300 km <sup>2</sup> in San Vicente area.
Brazil	Survey for Suape Costal Industrial Estate Development Project	The project aims at construction of a large industrial estate near Suappe about 50 km from Recife, Pernambuco province. In 1975, a field survey was conducted for the project. In 1976, a survey report was prepared and forwarded to Brazilian government.
	Survey for Preia Mole Port Construction Project	A feasibility study was conducted for construction of Preia port facilities required for shipment of semi-steel from Usiminas Steel Works and landing of coal and heavy oil.
Chile	Survey for Mineral Resources Development Project in Northern Region	A geological survey and geochemical prospecting were conducted to study the deposit possibility of mineral resources in an area of about 5,000 km <sup>2</sup> stretching over two provinces, Tarapaca and Antofagasta.
	Survey for Baker Hydro Electric Power Development Project	The project is aimed at hydropower development by dam construction on Rio Baker and Rio Pascua, Aisen province. Since the dam site is on a fault, a field survey was conducted in 1975 with specific attention to geological condition, cold-proof design and construction materials. In 1976, a report was prepared on the basis of the said survey and forwarded to Chilean government.

Country	Name of Survey	Outline of Survey
Columbia	Survey for Reforestation Development Project	The project aims at reforestation of needle-leaved forest in Cacia area for preservation and cultivation of forest resources and for national land preservation. In 1976, a field reconnaissance and data collection were conducted with discussions held with Colombian authorities to study the project feasibility.
	Survey for Coal Development Programme	The project aims at development of coal resources in 3 areas in the northern region of Colombia. In 1975, a preliminary survey was conducted to study the project feasibility and formulate a future survey plan. In 1976, a survey report was prepared and forwarded to Colombian government.
	Survey for Coal Development Project in Cali Coalfield	The project aims at coalfield development in Valle province and Cauca area. In 1976, a field survey was conducted for clarification of technical problems involved in the mining methods, improvement of the mining method and confirmation of coal seam distribution in the existing coalfield area, and for selection of promising coalfields and formulation of an exploration method (incl. boring) in unexploited areas.
Costa Rica	Survey for Hinterland Development Project in Hinterland of Caldera and Puntarenas Ports	In 1975, a preliminary survey was conducted for comprehensive development of hinterland of Caldera and Puntarenas ports. In 1976, a full-scale survey was conducted for this project.
El Salvador	Survey for Development of Metal Mechanical Industries	A feasibility study was conducted to examine, from technical and economic viewpoints, the possibility of developing 4 sectors of metal mechanical industries (agricultural machinery,

Country	Name of Survey	Outline of Survey
El Salvador (Cont'd)		electricity-gas-water meters, small type compressors, machine tools) selected on the basis of the Master Plan of the project and the basic survey conducted with UNIDO's aid.
Guatemala	Survey for Geothermal Power Station Development Project	The surveys conducted in 1972 and 1973 confirmed the presence of geothermal field in Zunil area. In 1976, a third year survey consisting of geological survey, electric prospecting, and seismic prospecting was conducted in the said area.
	Survey for Geological and Mineral Resources Development Project in Western Region	A geological survey and geochemical prospecting were conducted to study the deposit possibility of mineral resources in an area of about 2,000 km <sup>2</sup> in the western region of Guatemala.
Honduras	Survey for Agricultural Development Project in Cholteca River Basin	The project aims at construction of a dam on the Cholteca river and irrigation structures including headworks and channels at a point about 20 km downstream of the dam for development of irrigated agriculture in an area of about 20,000 ha in the Cholteca river basin. In 1976, a field survey including data collection was conducted and discussions were held with Honduras authorities to develop the method of Japan's cooperation in the project.
	Survey for Mineral Resources Development Project in Western Region	A field survey covering an area of about 1,200 km <sup>2</sup> in the Rio Chamelecon basin was conducted to study the deposit possibility of mineral resources in the western region of Honduras, and negotiations were held with Honduras government regarding the scope of work.

Country	Name of Survey	Outline of Survey
Honduras and Nicaragua	Survey for Projects Finding and Screening for Mining and Industrial Development in Central and South American Countries	<p>For the purpose of efficient execution of surveys for mining and industrial development projects to be conducted as part of Japan's technical cooperation with Honduras and Nicaragua, a projects finding survey was conducted with specific attention to the following.</p> <ol style="list-style-type: none"> <li>a. Examination of the nature and objectives of the projects for which Japan's cooperation's requested.</li> <li>b. Evaluation of the significance of such projects in the whole economic development scheme of each country.</li> <li>c. Selection and screening of the projects for which Japan can offer assistance.</li> </ol>
Mexico	Survey for Geological and Mineral Resources Development Project in Northern Region	An aerial magnetic prospecting and onland sampling were conducted to study the deposit possibility of mineral resources in an area of about 16,000 km <sup>2</sup> in Coahuila province. On the basis of these surveys, geological survey and geochemical prospecting were also conducted.
Paraguay	Survey for La Colmena Road Project	The survey conducted in 1974 for Carapeguá - La Colmena Road Project was followed by the execution of the project by Paraguayan government covering 23 km section of the road. In 1976, a follow-up survey was conducted for the remaining 18 km section for estimation of the amount of work and construction cost and for economic evaluation.

Country	Name of Survey	Outline Survey
Paraguay and Uruguay	Survey for Projects Finding and Screening for Development in Central and South American Countries	<p>For the purpose of efficient operation of Development Survey Programme conducted as part of Japan's technical cooperation with Paraguay and Uruguay, a projects finding survey was conducted with specific attention to the following.</p> <ol style="list-style-type: none"> <li>a. Examination of the nature and objectives of the projects for which Japan's cooperation is requested.</li> <li>b. Evaluation of the significance of such projects in the whole economic development scheme of each country.</li> <li>c. Selection and screening of the projects for which Japan can offer assistance.</li> </ol>
Peru	<p>Survey for Construction of Complex of Central Fishing Base</p> <p>Survey for Geological and Mineral Resources Development Project</p>	<p>The project aims at construction of Central Fishing Base in Ventania area. In 1976, a report containing preliminary design of structures of optimum scale, estimated construction cost and period, and financing plan was prepared and submitted for examination with Peruvian authorities.</p> <p>Geological survey and geochemical prospecting were conducted to study the deposit possibility of mineral resources in an area of about 20,000 km<sup>2</sup> to the northeast of Lima.</p>
Fiji	Survey for Forestry Development Project	A field reconnaissance was conducted to solve various problems facing the afforestation of broad-leaved trees and study the possibility of commercial chip production from broad-leaved trees and pulp production from trunks of coconut trees, and necessary arrangements were made with Fiji authorities.

Country	Name of Survey	Outline of Survey
Gilbert and Ellice Islands	Survey for Development of Fisheries	A survey was conducted to formulate a concrete plan for fisheries development, bonito fishing, in particular, in the coastal areas of Gilbert and Ellice Islands at the request of its government.
Papua New Guinea	Survey for Fishing Base Construction Project	A preliminary survey was conducted on the justifiability of the project, selection of suitable construction site, and establishment of a marine resources research institute, with arrangements also made for a full-scale survey in relation to the procurement of necessary survey equipment, recruiting of counterpart experts and local workers, and survey schedule.
Papua New Guinea (Cont'd)	Survey for Fisheries Development Project	A field survey was conducted on the feasibility of the above project and selection of a suitable construction site and establishment of a marine resources research institute. Further, need for research facilities was examined and a detailed plan was formulated for research activities.
	Survey for Purari River Electric Power Development	This is a feasibility study initiated in January 1975 for completion in 33 months as a joint undertaking of Papua New Guinea, Australia, and Japan. It covers hydro power generation at Wabo point on the Purari river flowing in the northwestern part of the country, improvement of port facilities, construction of road, environmental conservation, and industrial location. In 1976, part of the survey was carried out.

## SECTION 6 MEDICAL COOPERATION PROGRAMME

### 1. Outline

The medical cooperation programme was initiated as part of expert dispatch programme under Colombo Plan and other technical cooperation plans.

In the early stage of its operation, the medical cooperation programme was carried out mainly by dispatching medical experts or medical teams consisting of medical doctors, technicians and nurses to developing countries where they offered medical services to promote the health of local residents. After 1966 when Japan's medical cooperation system was reorganized, the previous means of cooperation, in which rather sporadic assistance was offered mostly in the clinical aspect, was improved to a more extensive project-based cooperation to help raise the medical standards of developing countries and improve the health of their people within the framework of the socioeconomic development schemes of respective countries.

Hence, medical cooperation is now offered in the form of an organic combination of three services, i.e., dispatch of medical experts, training of counterpart physicians and technicians, and supply of medical equipment and medicines.

In 1976, 29 medical cooperation projects were implemented in 20 countries, covering mostly the following major fields; education in basic medical science, and research and prevention of endermic and infectious diseases which often attack tropical areas (tuberculosis, malaria, virus diseases, etc.). Assistance is also offered for the improvement of clinical treatment and examination as well as for the consolidation of various facilities for dentistry, ophthalmology and improvement of medical laboratories and hospitals.

In recent years, cooperation in the field of public health and hygiene has gained greater importance as many of those countries where the development has progressed to a somewhat substantial degree are now confronted, just as Japan, with the problems of environmental sanitation, pollution and adult diseases. In addition, cooperation with Asian countries in the study of population and family planning has been brought into the forefront as a matter of global concern.

Under some projects planned to provide assistance in medical education and research or in medical treatment in hospitals, overall cooperation involving the construction and operation of a large medical centre or a general hospital is offered on a grant aid basis. Cooperation of this type has been increasingly called for by developing countries.

Thus, the medical cooperation programme is apparently heading towards

expansion and diversification.

As part of the non-project based cooperation, well-known Japanese medical doctors including university professors are sent abroad to demonstrate surgical operations and give lectures to those concerned with medical services in developing countries. These demonstrations and lectures can be valued a highly effectual means of medical cooperation because they are very instrumental in introducing Japan's advanced level of therapeutic techniques (cardiosurgery, endoscopic technology for early detection of cancers, etc.) and in upgrading the level of Japanese medical experts stationed in developing countries and ex-participants.

Medical cooperation is much the same in essence as other types of technical cooperation in that it aims at upbringing human resources required for the socio-economic progress of developing countries while at the same time encouraging self-reliance of such countries. Considering the significance of medical services, it goes without saying that the medical cooperation programme should be positively pushed forward from the viewpoints of humanism and international fraternity and not from mere economic dimensions.

## 2. Performance in 1976

Surveys conducted in 1976 for medical cooperation are listed in Table 1, and main medical cooperation projects in Table 2.

Table 1 Dispatch of Survey Teams in 1976

Country	Type of Survey	Survey Objective/Particulars
Indonesia and the Philippines	Preliminary survey	The possibility of elevating the technical level of local health doctors by project-based cooperation was studied.
Algeria and Tunisia	Preliminary survey	A basic survey was conducted on sanitation and medical services as a whole in order to chart the future course of Japan medical cooperation.
Brazil	Preliminary survey	A survey was conducted on general condition of sanitation and medical services in Belen, Recife and other areas for project finding purposes.



Country	Type of Survey	Survey Objective/Particulars
Chile	Implementation survey	Arrangements were made with Chilean government for cooperation in early gastric cancer detection to be operated chiefly by Department of Medicine, University of Chile, and a Record of Discussions pertaining to the method of cooperation was signed.
Ecuador	Implementation survey	Arrangements were made with competent authorities for cooperation with Instituts Nacional de Higiene in researches into microbiological diseases and virology, and Record of Discussions pertaining to the method of cooperation was signed.
Bolivia	Implementation survey	Arrangements were made with Bolivian authorities for cooperation in the establishment of Gastroenterological Research Institute, and a Record of Discussions pertaining to the method of cooperation was signed.
Argentina	Implementation survey	Arrangements were made with competent authorities for cooperation in the consolidation of health preservation system, and a Record of Discussions pertaining to the method of cooperation was signed.
Indonesia	Cooperation planning survey (Family planning)	A field study was made on the effect of past cooperation in the areas of family planning, and arrangements were made for the method and details of future cooperation through discussions with comptent authorities.
	Cooperation planning survey	Effect of cooperation in the Centre for Biomedical Research was evaluated, with arrangements made with competent authorities for the future course of cooperation in the project.
Nepal	Cooperation planning survey	Arrangements were made for the method and details of future cooperation in Western Region Public Sanitation Project through discussions with competent authorities.

Country	Type of Survey	Survey Objective/Particulars
Afghanistan and Tanzania	Itinerant guidance	An itinerant guidance survey was conducted for Tuberculosis Control Project, with guidance offered to Japanese experts dispatched to the two countries.
Ghana	Evaluation survey	Effect of cooperation in second project offered to the University of Ghana Medical School since 1972 for researches conducted under the theme, 'Infectious Diseases and Nutrition,' was evaluated, and arrangements were made for cooperation in third project 'patho-physiology and immunity' through discussions with competent authorities.
Costa Rica	Evaluation survey	Effect of cooperation offered to Faculty of Medicine, University of Costa Rica, since 1973 in 'Basic Medical Education and Biomedical Researches Using Electron Microscope' was evaluated upon termination of the cooperation period, and arrangements were made for the method of future cooperation through discussion with competent authorities.
Brazil	Evaluation survey	Effect of cooperation in the field of circulating and digestive systems offered since 1974 to Instituto de Geriatria do Potificia Universidade Catolica do Rio Grande do Sul was evaluated as 1976 was the last year of cooperation period. The survey was also intended to collect data for framing future policy of Japan's medical cooperation with Brazil.
Thailand	Evaluation survey	Effect of cooperation offered to National Cancer Institute since 1967 was evaluated as 1976 was the last year of cooperation period. The survey was also intended to collect data for framing future policy of Japan's medical cooperation with Thailand.
Indonesia and the Philippines	Instrument repair survey	Technical guidance was offered in the maintenance of various medical equipment and instruments supplied for projects either in progress or completed in the recipient countries.

Country	Type of Survey	Survey Objective/Particulars
Thailand and Sri Lanka	Instrument repair survey	
India and Afghanistan	Instrument repair survey	
Iran and Kenya	Instrument repair survey	
Ghana and Nigeria	Instrument repair survey	

**Table 2 Main Medical Cooperation Projects**

Country	Title of Project	Outline of Cooperation
Bangladesh	The Population and Family Planning Project	Cooperation in the extension of family planning in model areas, including health improvement services for mothers and children.
Burma	College of Dental Medicine	Cooperation in the consolidation of facilities of College of Dental Medicine and Nurses' Training School attached thereto, and in new construction of a laboratory of oral pathology and microbiology.
Indonesia	Biomedical Research Centre	Cooperation in the standardization of test method of biomedical preparations, and in consolidation of virus researches.
	The Population and Family Planning Project	Cooperation in the dissemination and extension of family planning
Korea	Clinical Nutrition Research Center	Cooperation in nutrition research, and in consolidation of facilities for clinical examination of nutritional diseases and technical improvement of such examination.

Country	Title of Project	Outline of Cooperation
Nepal	The Development of Basic Health Services in the Western Region	Cooperation in the improvement of basic health services in the western region, especially public hygiene, clinical examination techniques and tuberculosis control.
The Philippines	Schistosomiasis Research	Cooperation in the research of immunological diagnosis and distribution and ecology of Oncomelania, and in the development of molluscicide.
	Cholera Eradication Project	Cooperation in the supply of laboratory facilities and establishment of fluid transfusion therapy and antibiotic treatment of cholera, for the purpose of bacteriological diagnosis of the disease.
	The Population and Family Planning Project	Cooperation in the diffusion and extension of family planning.
Thailand	National Cancer Institute	Cooperation in the establishment of the Institute for early detection, diagnosis and therapy of cancer, and follow-up cooperation in the repletion of the Institute's diagnostic and therapeutic sectors and maintenance of instruments.
	The Population and Family Planning Project	Cooperation in diffusion and extension of family planning.
Afghanistan	Malaria and Tuberculosis Control	Cooperation in the eradication of malaria and tuberculosis.
Ghana	University of Ghana, Medical School	Cooperation in the research of malnutrition and infectious diseases from the viewpoints of pathophysiology and immunology.
Kenya	Kenyatta National Hospital Intensive Care Unit	Cooperation in the establishment of Intensive Care Unit within Kenyatta National Hospital for improvement of clinical therapy.

Country	Title of Project	Outline of Cooperation
Nigeria	The Faculty of Health Science, University of Ife	Cooperation in the improvement of basic medical education in three fields: physiology, parasitology and microbiology.
	The Faculty of Medicine, University of Nigeria	Cooperation in the improvement of basic medical education.
Argentina	Technical Cooperation Project in the Field of Health Care System	Cooperation in the consolidation of Health Care system including local health services and control of vocational diseases.
Brazil	Instituto de Geriatria da Potifícia, Universidade Católica de Rio Grande do Sul	Cooperation in the fields of circulating system, cerebral artery and digestive system on establishment of Instituto da Potifícia.
Bolivia	Technical Cooperation Project in the Field of Gastroenterology	Cooperation in the research and control of gastroenteric diseases at 3 national hospitals at La Paz, Cochabamba and Sucre.
Costa Rica	The Faculty of Medicine, University of Costa Rica	Cooperation in the improvement of basic medicine.
Guatemala	The Control of Onchocerciasis	Cooperation in the control of vector of onchocerciasis, an endemic disease in Guatemala, and in the basic survey for chemical treatment of the disease and establishment of control method of its vector.
Paraguay	The Control of Leprosy	Cooperation in the research and treatment of leprosy.

## SECTION 7 AGRICULTURAL DEVELOPMENT COOPERATION PROGRAMME



*Local farmers engaged in paddy transplanting in JICA's demonstration farm operated under Lampung Agricultural Development Project, Sumatra, Indonesia*

## 1. Outline

Japan's government-sponsored agricultural development cooperation is provided in the form of assistance in various development projects under an agreement or a Record of Discussions concluded after relevant surveys or discussions with the government of recipient country. Transfer of technology and technical guidance, required for successful implementation of such projects, is carried out by an organic combination of dispatch of experts and supply of equipment and materials.

Needless to say, technical cooperation contributes largely to developing and upgrading the technical level of human resources indispensable for agricultural development in developing countries, providing the basis for such countries to stand on their own feet in charting and pursuing the future course of their national development. Overall technical cooperation in various agricultural development projects is a very effectual means of stimulating the progress of developing countries in that it serves for improvement of productivity and accelerated production and consequently contributes to the improvement of farmers' income level and living standards.

In that past years, Japan has offered many diversified project-based cooperation programmes as described below:

- (1) Assistance in agricultural extension centres and model extension farms, established mostly in Asia for paddy production, providing technical guidance.
- (2) Assistance in regional agricultural development projects and rural development projects, to provide integrated guidance in the extension of advanced techniques, in the infrastructural improvement for augmented production and in the fostering of farmers' organizations in each designated project area.
- (3) Assistance in agricultural research and education, to provide guidance in the elevation of the level of research activities in recipient countries and in agricultural education for upbringing prospective agricultural leaders.

With the widening of the coverage from Asia to other regions of the world, the agricultural development cooperation programme now covers many diversified fields including paddy, upland crops and livestock farming. The scale of cooperation has also been largely expanded as in the case of assistance offered for regional agricultural development projects and for research and education projects.

## 2. Performance in 1976

In 1976, a total of 1,700 million yen was appropriated for agricultural development cooperation with developing countries, for which a total of 126 experts and 25

survey teams were dispatched and 759 million yen worth equipment and materials supplied.

The cooperation activities performed in 1976 are outlined below by country and project.

#### Cooperation Activities in 1976 by Country and Project

Country	Title of Project	Outline of Activity
Bangladesh	Central Extension Resources Development Institute Project	<p>Cooperation in the establishment and operation of Central Extension Resources Development Institute for the following purposes.</p> <ol style="list-style-type: none"> <li>a. Development of extension method and technical potentiality.</li> <li>b. Trial cultivation for practical application of advanced farming techniques.</li> <li>c. Training of instructors of extension workers, and training of technical officials.</li> <li>d. Guidance and advice for fostering agricultural extension system.</li> </ol> <p>In 1976, assistance was offered in the foundation work of the Institute's buildings and development of its pilot farms, and experts were dispatched for itinerant guidance in the maintenance and operation of agricultural machinery and irrigation structures.</p>
	Citrus and Vegetable Research Project	<p>Cooperation in the basic researches on citrus including breeding and virus control, and in the improvement of its cultural method, selection of <i>improved varieties</i>, and <i>establishment of seed production method</i>. In 1976, an implementation survey team and long-term experts were dispatched to study the possibility and method of cooperation in the project.</p>



Country	Title of Project	Outline of Activity
Indonesia	Extension Farm and Cihea Tani Makmur Project in West Java.	<p>Cooperation in the following areas for agricultural development in West Java.</p> <p>a. Cihea Tani Makmur Project (1,086 ha) planned food production and improved financial footing of regional farmers.</p> <p>b. Demonstration farm construction plan designed for agricultural modernization.</p> <p>c. Training of agricultural technicians.</p> <p>Cooperation in the above areas, offered for 8 years since 1968, was completed in 1976 upon termination of the cooperation period.</p>
	Lampung Agricultural Development Project	<p>Cooperation in the following areas for agricultural development of Lampung province, South Sumatra.</p> <p>a. Establishment and operation of an agricultural extension centre for improvement of farming practices, and training of extension workers.</p> <p>b. Lowland agricultural development plan to be implemented by 41 extension farms for extension of improved paddy varieties.</p> <p>c. Highland agricultural development plan designed for extension of improved farming techniques of cassava and maize, and fostering of farmers' organizations.</p> <p>Activities in 1976 covered the training of extension workers and key farmers; establishment of demonstration farms, dispatch of an interim project evaluation team, and acceptance of 10 participants for training in Japan.</p>
	Japan - Indonesia Joint Food Crop Research Programme	<p>Joint research cooperation for plant protection covering the following subjects at Central Agricultural Research Institute, Bogor.</p>

Country	Title of Project	Outline of Activity
Indonesia (Cont'd)	Animal Health Improvement Programme	<p>a. Occurrence condition and control of main diseases and insect pests.</p> <p>b. Forecasting and control of insect vectors of virus diseases.</p> <p>c. Physiological disorder of food crops.</p> <p>d. Study of main diseases and insect pests from the viewpoint of plant physiology.</p> <p>Activities in 1976 covered the dispatch of new experts specialized in food crops and insect vectors, dispatch of an itinerant guidance team and acceptance of 2 participants for training in Japan.</p>
	Sericultural Development Cooperation Project	<p>Cooperation in the following areas for development of Indonesian sericultural industry.</p> <p>a. Establishment of Sericultural Centre and sub-centres and guidance in their operation.</p> <p>b. Establishment of standard sericultural techniques.</p> <p>c. Training of Indonesian engineers.</p> <p>d. Production and distribution of silkworm eggs and cuttings.</p> <p>e. Demonstration of advanced sericultural techniques.</p>

Country	Title of Project	Outline of Activity
Indonesia (Cont'd)	Project on South Sulawesi Regional Agricultural Deve- lopment Planning	<p>Activities in 1976 covered the dispatch of a survey team for final construction design, and dispatch of 5 experts.</p> <p>Cooperation in the following activities for regional agricultural development in South Sulawesi province.</p> <ol style="list-style-type: none"> <li>a. Examination and analysis of Master Plan of the project.</li> <li>b. Sector-wise planning of agricultural develop- ment.</li> <li>c. Formulation of project implementation plan for designated areas.</li> <li>d. Training of Indonesian experts in the formu- lation of agricultural development plans.</li> </ol>
	Pilot Plant Project, IPD	<p>Activities in 1976 covered the dispatch of 5 experts, acceptance of participants for training in Japan, and supply of 10 million yen worth equipment and materials.</p> <p>Cooperation in the training of agricultural experts and consolidation of facilities undertaken by Bogor Agricultural University, Faculty of Agricultural Engineering and Products Processing. In 1976, preparations were made for the dispatch of an implementation survey team on the basis of the preliminary survey conducted in 1975.</p>
Korea	Japan-Korea Joint Research Programme on Agriculture	<p>Research cooperation covering the following subjects for accelerated food production and improved financial footing of farmers.</p> <ol style="list-style-type: none"> <li>a. Research in high yielding varieties.</li> <li>b. Research in soil fertility and crop fertiliza- tion.</li> </ol>

Country	Title of Project	Outline of Activity
Korea (Cont'd)		<p>c. Research in water demand and physiology in crops.</p> <p>d. Research in soil and fertilizers for improvement of agricultural infrastructure.</p> <p>e. Research in herbicides.</p> <p>f. Research in accelerated vegetable production and plant protection.</p> <p>Activities in 1976 covered the dispatch of 10 experts, supply of 55 million yen worth equipment and materials, and acceptance of 10 participants for training in Japan.</p>
Laos	Pilot Farm Project, Tha Ngon Agricultural Development Project	<p>Cooperation with Asian Development Bank in the agricultural development of Tha Ngon area Vientian plain, and in the operation of the pilot farm (100 ha) established in Tha Ngon Agricultural Development area (800 ha).</p> <p>Activities in 1976 covered the trial transfer of the pilot farm management to a local agricultural cooperative society, dispatch of engineers for maintenance and repair of equipment, and supply of 25.5 million yen worth equipment and materials consisting mostly of spare parts.</p>
Malaysia	Water Management Training Programme	<p>Cooperation in the establishment and operation of a water management training centre, demonstration farms and pilot farms for training of Malaysian water management experts.</p> <p>Activities in 1976 covered the dispatch of a preliminary survey team, followed by the dispatch of an implementation survey team.</p>
Nepal	Janakpur Agricultural Development Project	<p>Cooperation in the following activities for agricultural development in Janakpur zone.</p>

Country	Title of Project	Outline of Activity
Nepal (Cont'd)		<p>a. Introduction, demonstration and extension of improved farming techniques at Hardinath Extension Farm (40 ha) and TUA Rupti Model Farm (8 ha).</p> <p>b. Establishment and operation of a project centre.</p> <p>c. Guidance in infrastructural improvement and extension of intensive paddy cultivation techniques in deep-well irrigation area (420 ha). In 1976, 100 million yen worth equipment and materials were supplied for project implementation.</p>
The Philip- pines	Increasing Rice Production Project	<p>Cooperation in the following activities for increased rice production.</p> <p>a. Survey and design for establishment of a model rice cropping field in Naujan area of Mindoro island and in San Miguel area of Leyte island, inclusive of construction of drainage structures, introduction of modern farm management techniques, and establishment of a rice centre for storage of dried paddy.</p> <p>b. Improvement of land infrastructure, improvement and extension of paddy cultivation techniques, and training of technicians at pilot farms.</p> <p>Cooperation period for this project expired in 1976.</p>
	Agricultural Pilot Centre Project, Cagayan Integrated Agricultural Development Project (CIADP)	Cooperation in the following activities for introduction of double cropping of paddy and improvement in agricultural productivity through infrastructural improvement by Japan's credit.

Country	Title of Project	Outline of Activity
The Philip- pines (Cont'd)		<ul style="list-style-type: none"> <li>a. Establishment and operation of Pilot Centre and model extension areas.</li> <li>b. Application of improved techniques for practical purposes, and development of new techniques.</li> <li>c. Screening of high yielding varieties.</li> <li>d. Demonstration of farming machinery and water management techniques in fields.</li> </ul> <p>Activities in 1976 covered the dispatch of 6 experts, acceptance of 2 participants for training in Japan, and supply of 7 million yen worth equipment and materials.</p>
Thailand	Sericultural Development Project	<p>Cooperation in the following activities for sericultural industry development in northeast Thailand.</p> <ul style="list-style-type: none"> <li>a. Establishment of Korat Central Sericultural Research and Training centre for development of modern sericultural techniques and training of extension specialists.</li> <li>b. Production and distribution of silkworm eggs and mulberry seedlings.</li> </ul> <p>In 1976, engineers were dispatched for equipment maintenance and repair service, and an itinerant guidance team was also sent.</p>
	Animal Health Improvement Programme	<p>Cooperation in the establishment and operation of an animal hygiene centre and a foot and mouth diseases centre for the following purposes.</p> <ul style="list-style-type: none"> <li>a. Diagnosis and prevention of animal diseases.</li> <li>b. Establishment of mass culture and production techniques of vaccine against foot and mouth disease.</li> </ul> <p>In 1976, an implementation survey team was dispatched.</p>

Country	Title of Project	Outline of Activity
Thailand (Cont'd)	Irrigated Agricultural Development Project	<p>Cooperation in the following activities at the Project Centre, pilot areas (Chao Phraya and Mea Klong), and Suphan Buri Experiment and Training Centre, for the purpose of accelerated paddy production and expansion of double-cropping area.</p> <ol style="list-style-type: none"> <li>Promotion of paddy field adjustment and improvement.</li> <li>Improvement and extension of agricultural production techniques.</li> <li>Establishment and fostering of farmers' organizations.</li> </ol> <p>In 1976, an implementation survey team and long-term experts were dispatched.</p>
Tanzania	Kilimanjaro Region Agricultural Development Project	<p>Cooperation in the following activities chiefly at Lyamungu Research Institute for agricultural development in Kilimanjaro province.</p> <ol style="list-style-type: none"> <li>Agricultural researches and experiments.</li> <li>Surveys for water resources development.</li> <li>Basic agricultural surveys concerning land use and farm household economy.</li> </ol> <p>In 1976, experts in livestock farming were dispatched.</p>
Brazil	Riveira River Basin Agricultural Development Project	<p>Cooperation in the following activities for increasing agricultural production in the Riveira River basin.</p> <ol style="list-style-type: none"> <li>Extension of paddy cultivation techniques.</li> <li>Research cooperation at Agricultural Research Centre.</li> </ol> <p>In 1976, 179 million yen worth equipment and materials were supplied, and 6 participants were accepted for training in Japan.</p>

## SECTION 8 PRIMARY PRODUCT DEVELOPMENT COOPERATION PROGRAMME

### 1. Outline

The primary product development cooperation programme, initiated in 1967, is intended to extend technical cooperation to stabilize the supply of primary products in developing countries by improving their productivity, quality and distribution systems, and thereby to promote the export trade of such countries and improve their international balance of payments.

These cooperation activities were conducted only in agricultural and forestry sector in the past. With the establishment of the Agency, however, such cooperation is now offered in the mining and industrial sector, too.

### 2. Performance in 1976

In 1976, a total of 21 experts and 14 survey teams were dispatched abroad and 177 million yen worth equipment and materials were supplied under the programme.

The cooperation activities conducted in 1976 are outlined below by country and project.

Cooperation Activities in 1976 by Country and Project

Country	Title of Project	Outline of Activity
(Agriculture, Forestry and Fisheries Sector)		
Burma	Survey for Upland Crops Development Cooperation	A field survey was conducted in areas given high development priority for accelerated production of sugar cane, groundnuts, miscellaneous pulses, and forage crops in order to study the possibility of cooperating in the project.



Country	Title of Project	Outline of Activity
The Philip- pines	Upland Crops Development Project	A pre-feasibility study was conducted on the possibility of cooperating in the Upland Crops Development Project planned for accelerated production of forage crops and maize in Cagayan area.
	Technical Cooperation Project for Afforestation of Pantabangan Area	Cooperation in the establishment and operation of a technical cooperation centre and in the creation of a pilot forest to provide guidance in the selection of tree species, nursery operation, planting method, and forest protection, for the purpose of establishing afforestation techniques. In 1976, 4 experts were dispatched and 107 million yen worth equipment and materials were supplied.
Thailand	Shrimp Culture Development Project	Cooperation in the establishment and operation of a pilot culture farm to provide guidance in the improvement of conventional culture method, research on seed production, and project implementation, for the purpose of promoting shrimp culture industry in Thailand. Activities in 1976 covered the dispatch of 2 experts and an itinerant guidance team, supply of 25 million yen worth equipment and materials, and acceptance of 4 participants for training in Japan.
	Maize Development Project	Cooperation in accelerated maize production in 5 provinces in Central Thailand by providing guidance at Cooperative Demonstration Centre in the improvement of cultural techniques, maintenance and repair of farm machinery, and seed production and distribution, and by fostering agricultural cooperative societies. In 1976, 28 experts were dispatched for the project.

Country	Title of Project	Outline of Activity
Burma and Malaysia	Survey for Project Finding for Forestry Cooperation in Southeast Asia	A survey team was dispatched to study the possibility of cooperating in the forestry development in the two countries.
Burma and Laos	Survey for Project Finding for Livestock Development in Asia	A survey team was dispatched to study the possibility of cooperating in the livestock development in the two countries.
Madagascar	Technical Cooperation for Livestock Development in Northern Madagascar	A survey team was dispatched to make arrangements for details of Japan's cooperation in the Livestock Farming Development Project in northern Madagascar.
(Mining and Industrial Sector)		
The Philip- pines	Technical Cooperation for Technological Development for Particle Board	Long-term experts and an implementation survey team were dispatched for improvement of material quality and production technology of particle board.
Thailand	Technical Cooperation for Technological Development of Natural Rubber Process- ing	An implementation survey team was dispatched on the basis of the preliminary survey in 1975 for cooperation in the qualitative improvement of natural rubber and training of technicians.
Indonesia and Malaysia	Project Identification Survey on Technical Cooperation in Southeast Asian Countries	A survey team was dispatched for project finding for cooperation under the Primary Product Development Cooperation Programme.

Country	Title of Project	Outline of Activity
Bolivia	Technical Cooperation for Recovery of Valuable Minerals from Complex Sulphide	On the basis of the preliminary survey in 1975, an implementation survey was conducted to examine the details of cooperation in recovering zinc and other valuable minerals from dross of tin ores at Mine Bolvar and thereby to contribute towards efficient resources utilization.
Brazil	Technical Cooperation for Development of Mineral Resources	A preliminary survey was conducted for cooperation in the Non-ferrous Metal Development Project
Chile	Technical Cooperation for Technological Development of Copper Smelting and Refining	On the basis of the preliminary survey conducted in 1975, long-term experts and an implementation survey team were dispatched for cooperation in technological development of copper smelting and refining process.