

ENVIRONMENTAL ENGINEERING COURSE

—WATER POLLUTION CONTROL—

NO.4 (II) ENVIRONMENTAL COOPERATION WITH DEVELOPING COUNTRY

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Environmental cooperation with developing countries has recently been more and more important in the whole economic cooperation programs of Japan. Economic cooperation is classified into three types ; official development assistance (ODA), other official flows and private flows, among which ODA plays a major role in the field of environment. Japan's ODA is classified into three types ; grant aid, technical cooperation and loan assistance.

1. Technical Cooperation

Technical cooperation is directly involved in the transfer of technology. Japan attaches great importance to this form of cooperation, of which developing countries expect so much. Technical cooperation program employs the following mechanism. The Ministry of Foreign Affairs prepares the plans and requests the necessary budget. The Japan International Cooperation Agency (JICA) takes responsibility of its implementation. Technical cooperation programs are composed of ;

- Acceptance of trainees,
- Dispatch of experts, survey teams and volunteers,
- Provision of equipment related to the work of persons mentioned above,
- Project-type technical cooperation, which represents the combination of three types of cooperation mentioned above

(1) Acceptance of Trainees

When the request for training is presented by the authorities of a developing country, JICA studies the possibility of accepting the request. The systems for accepting trainees are classified into group training and individual training. The content and method of group training courses are determined in advance in Japan by taking into consideration the following facts : the subjects should be those requested by many developing countries; the subjects should be those which can be taught properly in Japan to warrant the training therein; the subjects should be those which can be taught in common to trainees from various countries. Individual training is subdivided into counterpart training and ad hoc individual training. Applications are invited through the governments of developing countries concerned for the subjects that can be conducted in the group training programs held by the various institutions in Japan. Trainees are accepted in accordance with the quota for each developing country, which is decided in

advance by taking into consideration factors such as the needs of the countries and past performance (see Fig.1).

Japan offered 226 courses for group training in fiscal 1986, among which eight courses chiefly covered the environmental protection ; environmental administration, environmental engineering (water pollution), environmental engineering (air pollution), marine environment protection, industrial pollution control, sewage technology, solid waste technology, public health (see Table 1).

Individual training is held on case by case base. Training programs are prepared in accordance with the needs of each trainee. JICA accepted 1,983 of individual trainees in fiscal 1986, out of whom four trainees were taken care of by Environment Agency.

(2) Dispatch of Experts

The main purpose of dispatching experts is to transfer the knowledge and technology of the experts to the people of developing countries through orientation, survey and advice. Normally the procedure for the dispatch of experts from Japan begins with a request for assistance presented to the Government of Japan through the Japanese embassy by the government of a developing country. When a request form reaches the Ministry of Foreign Affairs of Japan, JICA entrusts the selection of the expert to the ministries, agencies and other institutions concerned, which will select a candidate and recommend him to JICA. When a candidate is approved, a document is sent to the developing country which presented the request. If the proposed candidate is accepted by the recipient country, he will be sent to that country as a JICA expert (see Fig.2).

JICA dispatched 1,249 of experts in fiscal 1986, among whom 21 were environmental experts recommended by Environment Agency.

(3) Dispatch of Survey Teams

Survey teams are dispatched to developing countries within the framework of the development survey program of Japan. The development survey aims to prepare reports which will contribute to the realization of development

projects through the field surveys in developing countries. The length of the survey period depends on the nature of the survey, and may last from several months to several years. In general, development surveys are carried out in the sequence of Fig.3.

Among various types of development surveys, Environment Agency conducts the formation of master plans for environmental protection. Usually survey teams based on the request are sent to the area suffering from environmental pollution problems. Then they carry out the study on the state and cause of the pollution in order to formulate appropriate countermeasures against pollution. Until now four development surveys on environment have been or are carried out ; air pollution control in Ankara, Shanghai and Mexico City, and water pollution control in lake Ypacarai (see Table 2).

(4) Provision of Equipments

Provision of Equipments is not always technical cooperation in itself, but it is necessary as means for conducting transfer of technology. They are provided to enhance or maintain the effect of technical cooperation. It is intended mainly to make the activity of dispatched experts more effective. In case of environmental cooperation, experts usually bring analytical instruments, reagent, glasswares and personal computers with them to the developing country through this program.

(5) Project-Type Technical Cooperation

The technical cooperation programs as mentioned above consist of three basic forms ; acceptance of trainees, dispatch of experts and provision of equipments. The original nature of technical cooperation may be to carry out these three forms separately. However, there is a type of technical cooperation which systematically combines the three forms and carries them out over a certain number of years. It is referred to as "project-type technical cooperation" for its strong project nature. The flow of project-type technical cooperation is shown in Fig.4.

This type of technical cooperation is presently carried out in the following five fields : social development; public health and medical care; population and family planning; agriculture, forestry and fishery; and industrial

development. Under the social development program, one project-type technical cooperation on environment is planned to start. That is the cooperation to the Environmental Research and Training Center in Thailand, for which preliminary survey was conducted in July 1988.

2. Grant Aid

Grant aid refers to the furnishing of funds to developing countries without assigning the obligation of repayment. So it means the best quality of financial aid. It can assume two forms; one is economic development assistance, the other is aid for increased food production and food.

Implementation of grant aid comprises a number of steps: a request is made to the Government of Japan through diplomatic channels; the request is studied; a survey team is sent out; aid policy is formulated; inclusion in the grant aid budget; negotiations are made with the recipient country through the Japanese embassy; Exchange of Notes(E/N); contract for the project implementation is checked and approved; various forms of guidance and negotiations during the project implementation; disbursements; evaluation of aid effects. Ordinarily it takes several years from the receipt of the aid to the evaluation of aid effects (see Fig.5).

Most of these grant aid programs are under the responsibility of the Ministry of Foreign Affairs. During the process of implementation, the Ministry of Foreign Affairs establishes contacts and holds consultations with other ministries and agencies concerned. At the moment, Environment Agency cooperates with the Ministry of Foreign Affairs in establishing the Environmental Research and Training Center in Thailand for which Thai Government requests grant aid.

3. Loan Assistance

Loan assistance means long-term low-interest loans called "Yen Loans". The Yen loans are implemented by the Overseas Economic Cooperation Fund (OECF), based upon an agreement between four competent ministries. The budget request for Yen loans is presented by the Ministry of Finance.

Table 1. Group Training Courses Related to Environmental Protection (held in fiscal 1986)

Name of Course	Outline of Training Program	No of Trainee
Environmental Administration	To transfer the experiences and expertise on environmental administration of Japan through lectures and field trips to help trainees to effectively tackle the environmental problems in their countries.	11
Water Pollution	To transfer the experiences, expertise and technologies of Japan necessary for water pollution control through lectures and field studies.	9
Air Pollution	To transfer the experiences, expertise and technologies of Japan necessary for air pollution control through lectures and field studies.	10
Marine Environment Protection	To show the overall marine environment protection ways of Japan, stressing the transfer of technology to prevent marine pollution caused by petroleum.	4
Industrial Pollution Control	To transfer the technologies for industrial pollution control covering the investment to pollution control facilities, initial cost, operation cost and performance of pollution control facilities so as to help promote appropriate industrial pollution control in developing countries.	10
Sewage Technology	To show the planning and maintenance of sewer lines and treatment facilities of Japan as well as sewage treatment technologies including industrial waste water	13
Solid Waste Technology	To show the experiences and expertise on solid waste management of Japan so as to help improve public cleansing works in developing countries, focussing on domestic solid wastes and night soil.	9
Public Health	To transfer the technique to carry out the epidemiological, physical, chemical, biological examination for public health including environmental pollution.	5

Table 2 Development Surveys for Environmental Protection (carried out by Environment Agency)

Title	Duration	Background	Result
Air Pollution Control Planning in Ankara	Nov. 1984-Jan. 1986 (completed)	Ankara City suffered from serious air pollution partly because it was located in a basin and partly they used low-quality of coal containing sulfur for heating during winter season	In order to solve the air pollution in coming 10 years, the survey team identified the pollution sources and levels, then showed the ways to improve coal quality, maintain boilers and manage episode
Air Pollution Control Planning in Shanghai	Jan. 1986-Jan. 1988 (completed)	Serious air pollution was caused by heavy and chemical industries in Shanghai which used coal as fuel	Air pollution control plan up to the year 2000 was proposed, including the introduction of central heating system, relocation of factories, improvement of burning, monitoring of pollution and human resources development
Air Pollution Control Planning in Mexico City	Feb. 1987-(on-going)	Mexico City, which has the largest number of population or 14 million and stagnates in winter, is hit by serious air pollution caused by a lot of automobiles and factories	Survey is carried out for two years to formulate a comprehensive plan for air pollution control
Water Pollution Control Planning for Lake Ypacarai and its Basin	Dec. 1987-(on-going)	Industrial and recreational activities pollutes lake Ypacarai which has 55 Km ² of water area and spiritual symbol of the people of Paraguay	Survey is conducted for one and half years to find the ways to reduce the pollution loads from the lake basin

Fig.1 Mechanism for Acceptance of Trainees

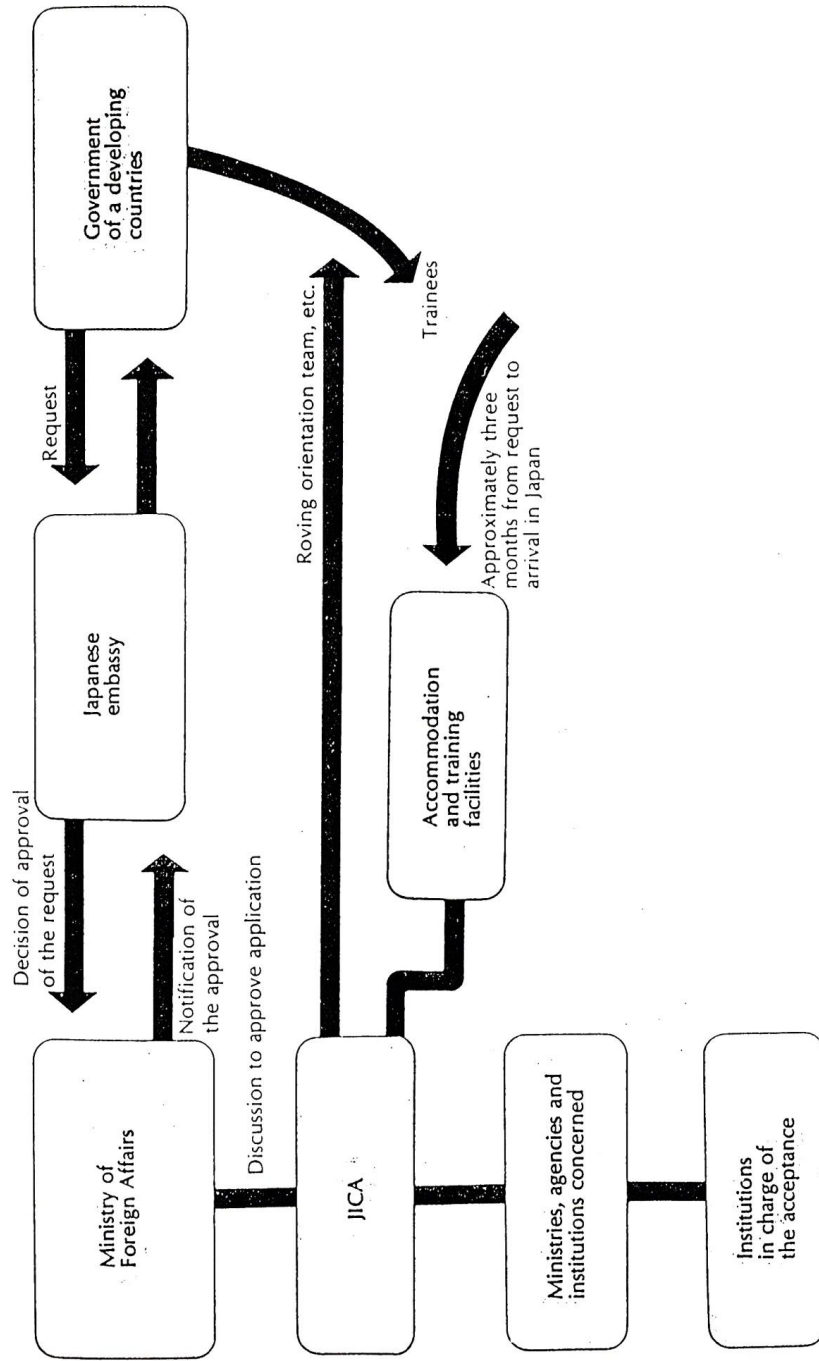


Fig.2 Mechanism for Dispatch of Experts

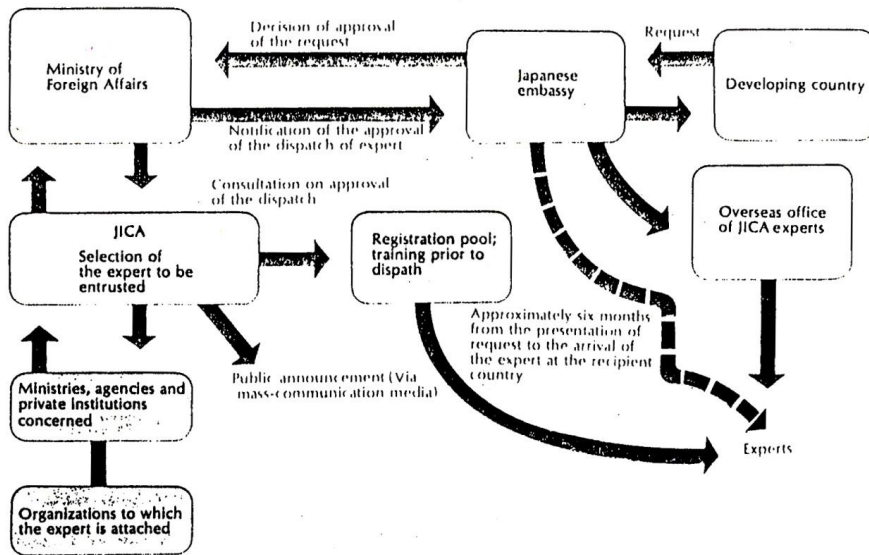


Fig.3 Procedure for Dispatch of a Survey Team

The request for a development survey is presented to the government of Japan

The basic policy of the cooperation in question is planned, in consultation with the ministries and government agencies concerned

The contents of the request are confirmed

The field survey is carried out, with cooperation of the recipient country

The results of the field survey are comprehensively analyzed and summarized in the report

The results of the survey are reported to the recipient country and the final report is prepared taking into consideration the opinions of the recipient country

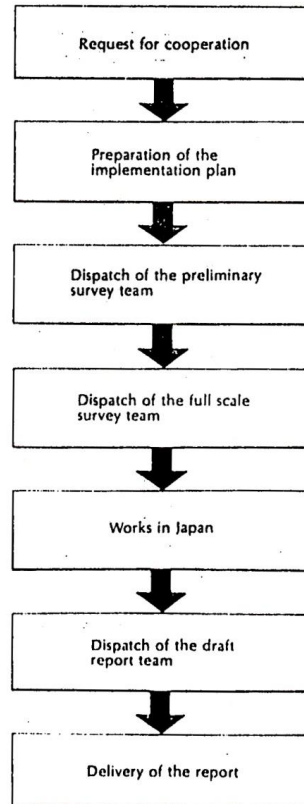


Fig.4 Procedure of the Project-Type Technical Cooperation

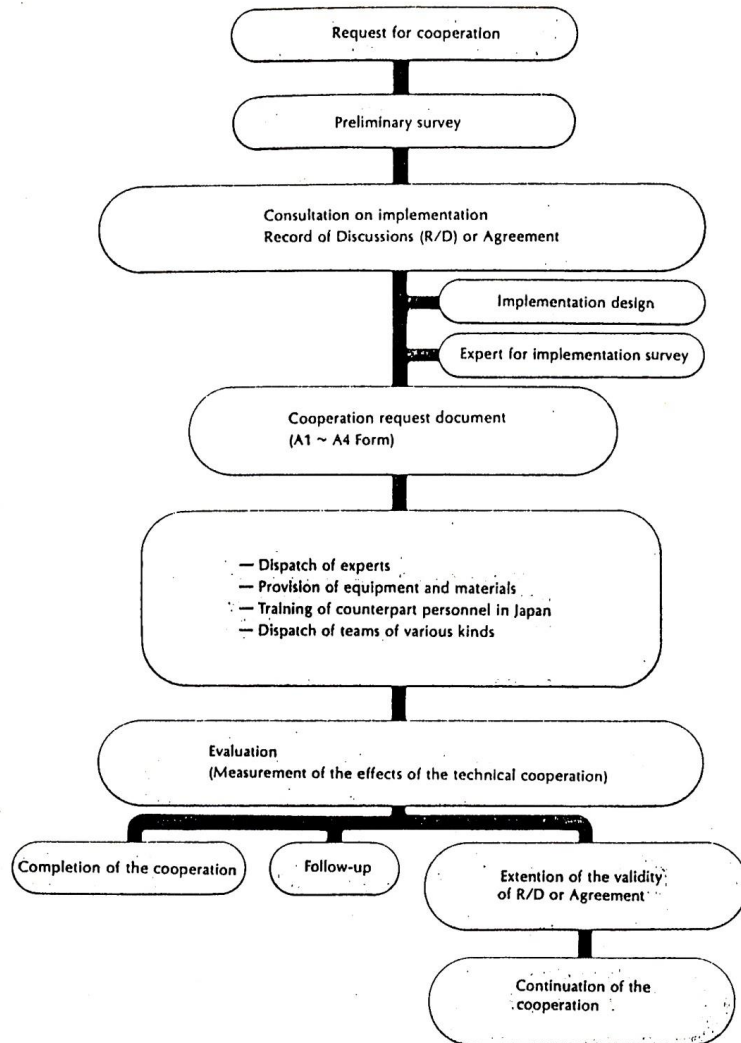


Fig.5 Flow of the Execution of Grant Aid

