

# Chapter 6

## Financial Resources and Transfer of Technology

In June 1992, the Cabinet adopted Japan's Official Development Assistance Charter (the ODA Charter), which spells out the philosophy and principles of Japan's official development assistance. The ODA Charter includes environmental conservation as a basic philosophy underlying Japanese aid and states that "the pursuit of environmental conservation and development in tandem" must be one of the basic principles of ODA. Japan's 'Medium-term Policy on ODA' published in August 1999, also lists environmental conservation as a priority task. By so doing, the government of Japan tries to realize sustainable development on a global scale through assisting the self-help efforts of developing countries.

While bearing the above points in mind, Japan's environmental cooperation follows Initiatives for Sustainable Development toward the 21<sup>st</sup> Century (ISD) announced in June 1997 at the Special Session of the United Nations General Assembly for the overall Review and Appraisal of the Implementation of Agenda21 (UNGASS). In particular concerning global-warming issue, which threatens sustainable development on a worldwide scale, the government of Japan announced the Kyoto Initiative on aid for global warming programs in developing countries during the Third session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (COP3) held in Kyoto in December 1997. Under the Initiative, the government of Japan provides active support for global warming programs and projects.

The Basic Environment Law stipulates that the government must endeavor to take all necessary measures to promote international cooperation for the conservation of the global environment as well as specifying the promotion of international measures by demonstrating international initiatives as a leader in international society for global environmental conservation under the 'Basic Environment Plan' (2000) drawn up on the basis of the Basic Environment Law. Also, the 'Guideline of Measures to Prevent Global Warming (2002)' specifies the promotion of international cooperation in the field of global warming-related measures.

## 6.1 Measures Concerning New and Additional Financial Resources pursuant to Article 4.3 of the Convention

### 6.1.1 Comprehensive Assistance for Arresting Global Warming

- Cooperation with the Global Environment Facility (GEF)

The GEF 1 (1<sup>st</sup> phase) was initiated in 1994. Total funding for GEF 1 is US\$ 2.02 billion over four years, of which Japan has contributed US\$ 410 million. From 1998, GEF 2 (2<sup>nd</sup> phase) started with total funding for four years of US\$ 2.75 billion, of which Japan contributed US\$ 410 million out of newly secured funds of US\$ 2.06 billion.

- Cooperation with IPCC

Japan has provided the IPCC with SFr. 180,000 annually since 1997. Furthermore, it has handled the organization of technical support for the inventory task force that was established in 1999, and funded its operational costs (1999: ¥175.867 million; 2000: ¥175.983 million).

In addition, Japan cooperates with the IPCC in terms of human resources. For example, it participates in the formulation of reports, both as a bureau member and a lead author.

## 6.2 Assistance for Developing Countries that are Particularly Vulnerable to Adverse Effects of Climate Change

### 6.2.1 The Kyoto Initiative (December 1997~)

The government of Japan announced the Kyoto Initiative consisting of strengthened environmental support that focuses on assisting developing countries to combat global warming at the Third session of the Conference of the Parties to the United Nations Framework Convention on Climate Change held in Kyoto in December 1997, which will be implemented mainly through the Government of Japan's ODA program.

The Kyoto Initiative is based on the three Philosophies, namely, 1) Global Human Security; 2) Ownership and Partnership; and 3) Sustainable Development, just the same as the ISD, and assistance is specifically carried out based on the following three pillars.

- Cooperation in Capacity Development

In the five years beginning in fiscal 1998, Japan will train 3,000 people in developing countries in fields related to global warming (i.e. air pollution, waste disposal, energy saving technologies, forest conservation and afforestation).

About 4,600 people have already been fostered during the three years from fiscal 1998 to fiscal 2000 through training courses both in Japan and developing countries, and by the experts and JOCV members dispatched by Japan.

- Official Development Assistance loans on the most concessional conditions (interest rate: 0.75%; repayment period: 40 years) (yen loans)

The government of Japan will provide ODA loans at the most concessional terms (interest rate: 0.75%; repayment period: 40 years) available internationally primarily with regard to energy saving technologies, new and renewable energy sources, forest conservation and afforestation, and air pollution-related measures in order to achieve sustainable development while dealing with global warming issues.

- Exploitation and transfer of Japanese technology and know-how

The government of Japan will support developing countries efforts by using technology and know-how acquired in the process of combating its own pollution and energy problems, and developing and transferring such global warming-related know-how as best suited to the actual status in developing countries, as well as sending survey groups and holding workshops.

## 6.2.2 Other specific assistance

- Development Study

As well as supporting the drawing up of development plans for sustainable development in developing countries, planning methods and survey/analysis skills, etc. are transferred to counterparts in those countries in the process. In particular, research into environment management projects for rivers, lakes and marshes, waste disposal and air pollution-related measures, and conservation projects for marine creatures and suchlike are actively conducted for developmental research in the environmental field.

Specifically, in Indonesia, specific study was carried out on a coral reef management project in the Sulawesi Utara (North Celebes) area.

- Loan Aid

Loan aid and transfer of technology is provided for adaptive measures (i.e. countermeasures against flooding and riparian works) taken by developing countries via low-interest, long-term yen loans (average repayment period: about 33 years and 7 months; average grace period: about 9 years and 5 months; average interest rate: 1.41% (fiscal 2000)) offered by the government as part of its development assistance.

Specifically, cooperative action is being carried out for flood prevention projects in Indonesia and the Philippines, etc.

Since fiscal 1995, special interest rates that are lower than loans for other fields have been established for addressing environmental issues in middle and low income countries (excluding least developed countries) for promotional purposes.

Furthermore, efforts are being made to formulate projects in developing countries via the Special Assistance for Project Formulation.

- Grant Aid

Funds are provided and technology is transferred for adaptive measures (i.e. preparation of weather observation networks and flood prevention work) taken by developing countries using grants provided by the government as part of its development assistance policy.

Specifically, assistance has been afforded for construction of bank protection in the Maldives.

- Project-Type Technical Cooperation

To improve adaptive technology in developing countries, Japan cooperates in projects related to adaptive measures by participating in comprehensive project-type technical cooperation that includes dispatch of experts, acceptance of trainees, and provision of equipment.

Specifically, cooperative activities geared towards forest preservation and recovery have been implemented in various countries, including projects concerning forest-fire prevention and tree planting in Indonesia.

- Dispatch of experts, and Acceptance of trainees

Training has been held in both Japan and third world countries, in addition to which experts and JOCV members have been sent abroad to train personnel in global warming-related fields (air pollution, waste, energy conservation, forestry conservation and afforestation).

Specifically, clerical workers from emergency assistance organizations in each country are accepted as trainees, and training courses are held to contribute to improved disaster prevention countermeasures in each trainees' country by introducing Japan's own international emergency assistance system and training courses concerning countermeasures against disasters in Japan.

- Asia-Pacific Seminar on Climate Change

Much effort has been made to cope with climate change in the Asia-Pacific Region. The Ministry of the Environment has held the 'Asia-Pacific Seminar on Climate Change' every year since 1991. Administrators, experts from each country in the Asia-Pacific region, and international organizations have been invited to the seminars. The main purpose of these seminars is to facilitate further activities to address climate change in the Asia-Pacific region through the exchange of views, experiences, and information concerning the issue.

In the 11<sup>th</sup> seminar held in August 2001, opinions were exchanged under the following main themes: The IPCC Third Assessment Report, possibility of CDM, adaptation measures, and national communications from developing countries. Opinions were also exchanged about APNET, a regional information network using Internet on climate change developed by the Ministry of the Environment, and local initiatives concerning global warming issues.

- Studies of global warming issues in the South Pacific region

The South Pacific Islands Countries are most vulnerable to the impacts of global warming, and therefore international support is particularly essential to implement appropriate adaptation measures. For this purpose, the Ministry of the Environment has, since fiscal year 1999, conducted a cooperative study (Pacific-Japan Project) for the South Pacific Island Countries, which explored the needs for cooperation relating to responses to global warming. Currently, the 'A Resource Book for Policy and Decision Makers, Educators, and other stakeholders titled 'Climate and Sea-level variability and change in Pacific Islands region' is being prepared in cooperation with SPREP, based on the results of the former study .

## 6.3 Financial Resources related to the implementation of the Convention

Refer to the tables shown later.

## 6.4 Measures Related to Transfer of Technologies

### 6.4.1 Government Measures related to the promotion, facilitation and financing of the transfer of technologies

#### 6.4.1.1 The Kyoto Initiative (December 1997~) (as previously mentioned)

- Cooperation in Capacity Development (as previously mentioned)
- Official Development Assistance loans at the most concessional conditions (interest rate: 0.75%; repayment period: 40 years) (yen loans)  
Approximately ¥580 billion has been committed for a total of 48 projects in 11 countries, such as a thermal power complex in Azerbaijan and construction of a small hydroelectric power plant in China from December 1997 to March 2001.
- Exploitation and transfer of Japanese technology and know-how (as previously mentioned)

#### 6.4.1.2 Other Assistance Details

- Loan Aid  
Loan aid and transfer of technology is provided for global warming countermeasures taken by developing countries via low-interest, long-term yen loans (average repayment period: about 33 years and 7 months; average grace period: about 9 years and 5 months; average interest rate: 1.41% (fiscal 2000)) offered by the government as part of its development assistance.

Specifically, cooperation is being afforded for reinforcement work on an elevated light railway in the Philippines.

Since fiscal 1995, special interest rates for environmental issues that are lower than those on loans for other fields have been applied to middle and low income countries (excluding least developed countries) for promotional purposes.

Furthermore, efforts are being made to formulate projects in developing countries via the Special Assistance for Project Formulation.

- Grant Aid for Afforestation (fiscal 2000)

Supporting the development of forests for national land and environmental conservation such as maintaining forest ecosystems, water resource functions, and landslide prevention to improve sustainable forest management and living environments.

Specifically, cooperation is being afforded to restoration projects following the fires in national parks in Indonesia, and afforestation projects along coastal areas of Senegal.

- Grant Aid for Clean Energy (fiscal 2000)

Funds have been contributed for preparation of energy-related facilities and equipment to reduce and control carbon dioxide emissions in developing countries as a part of the aim to strengthen Japan's measures directed at energy environment-related issues such as global warming. By using these funds, Japan seeks to improve the efficiency of electricity generation and supply systems as well as electrification of areas previously without mains electricity.

Specifically, cooperation is being afforded to the refurbishment of a power plant in rural Mongolia.

- Grant Aid for Global Environment (fiscal 2001)

In order to resolve global environmental issues, support is being provided in the energy-related and afforestation fields which lead to reduce and limit the emission of greenhouse gases through the establishment of 'Grant Aid for Global Environment' by unifying grant aid for afforestation and grant aid for clean energy. Contributions totaled ¥5 billion in fiscal 2001.

- Development Study (as previously mentioned)

Specifically, a study was implemented to formulate a plan for waste disposal project for rural cities in Syria.

- Development Cooperation

Specifically, carbon dioxide fixation has been carried out as extensively as possible while striving to maintain the local environment in Indonesia, and implementation of a forest management survey on

carbon dioxide fixation has been initiated to establish appropriate forest management methods that prevent a net discharge of carbon dioxide.

- Asia-Pacific Seminar on Climate Change (as previously mentioned)
- Feasibility Studies on Climate Change Mitigation Projects for clean development mechanism (CDM) and Joint Implementation (JI)

Clean development mechanisms (CDM) and Joint Implementation (JI) that were introduced in the Kyoto Protocol are flexible international measures for Annex I countries to achieve their respective targets for reducing greenhouse gas emissions in tandem with developing countries or other Annex I countries.

Since 1999, Feasibility Studies on Climate Change Mitigation Projects for CDM/JI have been carried out for the accumulation of knowledge to formulate domestic and international rules for such CDM/JI mechanisms as well as to identify effective means of reducing greenhouse gas emissions and enhancing CO<sub>2</sub> sink.

Twenty-three feasibility studies into such areas as biomass, afforestation, and renewable energy have been adopted between fiscal 1999 and 2001 through official solicitation from private sector companies and Non-Government Organizations (NGOs).

- Scoping Study to Promote Joint Implementation

This is to identify, further research (in the form of feasibility studies) and bring to fruition – by introducing effective energy use technology which Japan possesses (energy conservation and oil substitute energy technology) – any private projects that are effective means of reducing greenhouse gas emissions and have the potential to be linked to any future Joint Implementation (JI)/clean development mechanism (CDM) in order to actively implement the flexible international JI and CDM measures to reduce greenhouse gases as detailed in the Kyoto Protocol.

Research themes were solicited from the public, and 40 research projects were carried out in fiscal 1998, 49 in fiscal 1999, and a further 49 in fiscal 2000. 45 research projects were adopted in fiscal 2001, for which research is currently being conducted.

- Activities Implemented Jointly (AIJ)

In accordance with the decision adopted at the First Framework Convention on Climate Change (COP1), Japan engaged in discussions concerning the Japan's Fundamental Framework for Activities Implemented Jointly (AIJ) under the Pilot Phase of the Framework Convention on Climate Change (AIJ Japan Programme) at the joint sessions of the Council of Ministers for Global Environment Conservation and the National Energy Council of Ministers in 1995. This program serves as the main implementing body for Japan's participation in AIJ projects. While encouraging the participation of a wide range of entities, including regional public bodies, general corporations, NGOs, and public corporations, Japan has also established the Inter-Ministerial/Agency Coordination Committee for AIJ, as well as the

Secretariat for that committee, as part of efforts to establish standards for a system that will promote AIJ. At the meeting of the Inter-Ministerial/Agency Co-ordination Committee for AIJ in 1996, the following documents were formulated: Manual for AIJ Pilot Project Proposal in the Japan AIJ Pilot Program; AIJ Project Application Form; and Evaluation Guidelines for Approving AIJ Projects.

Currently, the number of Japan programs authorized is 20, 12 of which have also been approved by the other countries concerned. Five programs have already been reported to the treaty secretariat.

- Climate Change Technological Initiative (CTI)

The New Earth 21 was internationally proposed based on the Council of Ministers for Global Environmental Conservation's Houston Summit in 1990. The framework for the Technology Renaissance for Environment and Energy (TREE) was proposed at the Tokyo Summit in 1993 to establish comprehensive concrete strategies for the 'New Earth 21'. In the same year, a scoping study was carried out into the implementation of joint international research and development concerning environmental energy technologies at the conference for promoting of environmental energy technology development.

IEA/OECD members in 23 countries and the EC proposed the establishment of the Climate Technology Initiative (CTI) at the 1<sup>st</sup> United Nations Framework Convention on Climate Change in 1995.

International cooperation such as transferring and promoting technologies to contribute towards the reduction of greenhouse gases, promotion of the market, and promotion of the transferal of innovative technological developments was provided.

In fiscal 2000, workshops on transferring technologies to developing countries were held, in addition to exchanging eight studies under the theme of technological developments between advanced countries involved in such areas.

- Asia-Pacific Network for Global Change Research (APN)

This is an inter-governmental network established to promote regional cooperation on global environmental studies related to the Asia Pacific region, encourage the participation of developing countries in the study, and strengthen links between researchers and the administration. It also strives to improve the capabilities of researchers by providing training, supporting participation in international study meetings, and holding workshops. Currently, 'climate changes and fluctuations' is one of the priority issues for the APN science program. Japan has also been positively supporting its activities.

- Supporting the ITTO

Japan continues to offer its full support to International Tropical Timber Organization (ITTO) activities, such as through the establishment and popularization of felling methods considered considerate towards the environment in productive tropical forests, verifying the guidelines established by the ITTO, forest conservation along borders, countermeasures to illegal felling, and mangrove conservation projects that combine both conservation and utilization of tropical forests. Japan considers that its contributions to

the ITTO must be continued and strengthened if it is to continue to play a leading role as a major importer of tropical timber and as the host country of the headquarters, and contributed ¥111 million as its assigned portion and contributed an additional optional ¥1.075 billion in 2000.

- Support for FAO

Japan has voluntarily contributed to a trust fund to implement 14 projects from 1983 to the present aimed at promoting sustainable forest management in developing countries in addition to covering about 20% of its regular budget. In fiscal 2000, Japan voluntarily contributed to and supported the implementation of a project to promote stakeholder participation in forest management in Asia and a project to analyze the impact of forest products trade in the promotion of sustainable forest management.

- Indonesian carbon-fixation forest management onsite inspections

Inspections are to be carried out to establish new afforestation techniques and forest management methods for carbon fixation in Indonesia scheduled from 2001 to 2006 in order to contribute to an easing in climatic changes through the reduction and removal of greenhouse gases using carbon fixation via afforestation.

#### 6.4.2 Government Support Measures to Develop and Enhance the Capabilities and Technologies of Developing Countries

- Developmental Research (as previously mentioned)

- Project-type Technical Cooperation

To improve adaptive technology in developing countries, Japan cooperates in projects related to adaptive measures by participating in comprehensive project-type technical cooperation that includes dispatch of experts, acceptance of trainees, and provision of equipment.

Specifically, cooperation is being afforded to environmental center projects in six countries including China, Chile, and Mexico, an energy conservation center project in Bulgaria, and a forest planning study project in Papua New Guinea.

- Dispatch of experts and Acceptance of trainees (as previously mentioned)

Specifically, training courses have been established to provide the information required to formulate global warming-related measures and improve skills so that developing countries can prepare lists of greenhouse gases by themselves, for which trainees have been accepted and experts have been sent.

- Asia-Pacific Seminar on Climate Change (as previously mentioned)

- Feasibility Studies on Climate Change Mitigation Projects for clean development mechanism (CDM) and Joint Implementation (JI) (as previously mentioned)
- Scoping Study to Promote Joint Implementation (as previously mentioned)
- Climate Change Technology Initiative (CTI) (as previously mentioned)
- Activities Implemented Jointly (AIJ)

- Green Aid Plan (GAP)

Japan continues to actively promote the Green Aid Plan to effectively integrate tools for training personnel, cooperate with writing reports and studies in order to support the individual efforts of developing countries concerning energy and environmental issues through effective solutions to global warming and suchlike through technological cooperation with new energy sources and energy conservation.

- APEC-VC

Japan proposed and approved of an ‘APEC Virtual Center for Environmental Technological Exchanges’ for mutual submission and exchange of environmental technology-related information held by governments, companies and environmental organizations in the region by establishing homepages covering environmental technologies, such as those related to global warming, on the Internet between each APEC country/region. Since the virtual center was established in Japan in April '97, virtual centers have been established in 11 countries/regions, namely Australia, Taiwan, New Zealand, China, The Philippines, Vietnam, Thailand, Chile, Indonesia, and Malaysia so far, and they are linked via the Internet. Efforts are being made to improve usability, such as by installing standard search engines and ensuring sufficient contents as well as promoting the establishment of more centers in those countries or regions that have yet to do so.

- Asia-Pacific Network for Global Change Research (APN) (as previously mentioned)

- Criteria and Guidelines for Sustainable Forest Management

ITTO specifies the promotion of information sharing, financial and technological support, and improving the capability of member countries to implement the ‘Target 2000’ strategy of “striving to achieve targets from supply sources while implementing management so that the import of tropical timber and tropical wooden products can be sustained”. In order to achieve this, Japan has positively participated in discussions of policies concerning conservation and use of tropical forests at the ITTO meetings of the board of directors and other committee meetings. Also, it has been involved in many projects in various fields such as the establishment of forestry conservation areas, afforestation, countermeasures against

illegal felling, conservation of mangroves, improvement in wood product processing quality, and statistical data, as well as supporting various projects and holding workshops on the application of the 'Criteria and Guidelines for Sustainable Tropical Forest Management'.

- International Workshop on Model Forests for Field-Level Application of Sustainable Forest Management

Between 1998 and 2000, Japan hosted a series of four International Workshop on Model Forests for Field-Level Application of Sustainable Forest Management to exchange views and improve understanding on field level initiatives carried out in model forests among participants from abroad, and thereby to contribute to promoting sustainable forest management in each respective country.

- A country-led initiative in support of the United Nations Forum on Forests (UNFF): International Expert Meeting on Monitoring, Assessment and Reporting on the Progress toward Sustainable Forest Management

In November 2001, Japan hosted a country-led initiative in support of the United Nations Forum on Forests (UNFF) entitled *the International Expert Meeting on Monitoring, Assessment and Reporting on the Progress toward Sustainable Forest Management* in Yokohama, Japan with the aim of contributing to deliberations in support of the UNFF. Experts from developing and developed countries, international organizations, regional processes and NGOs have attended the meeting. The meeting provided a forum for exchanging views on monitoring, assessment and reporting within the UNFF context, including the means for monitoring, assessment and reporting and how countries could report to the UNFF on their progress in the implementation of already-agreed proposals for action under the UN. The meeting report was submitted to the UN, which contributed to the deliberation as a document for the second substantial session of the UNFF held in March 2002.

- Support for afforestation by private sector parties

Since 1991, Japan has been supporting NGO activities promoting international greenery. Since 2000, about ¥100 million has been contributed annually to support the implementation of preliminary research, acceptance of overseas colleagues, and providing technical instruction through the dispatch of experts to afforestation projects carried out by NGOs in developing countries. Furthermore, technical training has been provided to develop personnel involving in afforestation, technological information has been collected and provided, while understanding and recognition of approval source projects based on the Kyoto mechanism has been shared by inviting the heads of government forestry departments from South East Asia, etc., in addition to which international forum have been held to exchange and discuss opinions on how Japan can continuously promote cooperation with private afforestation projects overseas both domestically and abroad.

- Observation of forestry statuses using satellite data

The Japan Forest Technology Association has been developing systems to provide information and analyze forestry resources using satellite-obtained data targeted on tropical forests in Asia in order to check for any degradation since 1990. From 2001, in order to resolve the worsening degradation that has been observed in forests in the eastern part of Asia, about ¥200 million has been contributed to efficiently check degradation statuses in forests using high-resolution satellite data, to estimate future degradation, and appropriately reflect such data concerning degradation in forests throughout Japan into its forestry policies.

- Support for Global Environmental Conservation Using “Postcards with a Donation” and Other Programs

Japan has collected contributions through postcards with a donation sales since 1992, some of which have been distributed to organizations working to conserve the global environment. In fiscal 2000, a total of ¥60.63 million was distributed to 15 groups concerned.

### 6.4.3 Prevention of Acid Rain

Nitrogen oxides have been identified as one cause of acid rain; they are also considered a greenhouse gas in that they contribute to the formation of ozone in the troposphere. Thus, countermeasures to acid rain also contribute to the arrest of global warming. Furthermore, by preventing damage to forests, countermeasures against acid rain contribute to the preservation of sinks for carbon dioxide, which is the most widespread greenhouse gas.

- Acid rain monitoring network in East Asia

In order to establish a framework for countermeasures against acid rain through international cooperation across East Asia through the participation of 11 countries; namely, China, Indonesia, Japan, Malaysia, Mongolia, the Philippines, Korea, Russia, Thailand, Vietnam, and Cambodia; full-scale action has been implemented from January 2001, following a trial period from April 1998. The aim is to improve common recognition by those participating countries concerning the current status of acid rain issues in East Asia by preparing and evaluating reliable data that can be crosschecked using a standardized method.

### 6.4.4 Prevention of Desertification

The loss of forests and other green land through desertification leads to the loss of important carbon dioxide sinks. In this sense, the prevention of desertification is important as a means of preventing global warming.

Japan has been promoting a variety of desertification prevention-related projects through conservation of water resources, forest conservation and afforestation, agricultural development, and Official Development Assistance (ODA) including capacity building. In September 1998, Japan accepted the Convention to Combat Desertification that was adopted in June 1994 and became a party to the Convention, and has been working to support the formulation of national action programmes and holding of related workshops for developing countries affected by desertification to ensure effective implementation of the Convention. As a Party to the Convention, Japan has also been studying what the comprehensive desertification prevention-related measures should be with due consideration for socioeconomic viewpoints, in order to contribute more actively in the implementation of the Convention. Studies have been carried out concerning the monitoring and assessment of desertification using desertification guidelines as well as establishing a network to provide technological contributions and study support for the Thematic Programme Network (TPN) in the Asian region, particularly the TPN 1 'desertification monitoring and assessment' field.

## 6.5 Promoting International Cooperation in the Private Sector

- Cooperative Activities of Private Sector Groups

In Japan, many of the existing environmental conservation technologies were developed by private sector companies. Parallel to this, direct foreign investment by private sector companies to developing countries plays a very significant role in technology transfer. In addition, Japanese government and Japan's various NGOs, (such as the Japan Wildlife Research Center; the International Lake Environment Committee Foundation; the Overseas Environmental Cooperation Center Japan; the Organization for Industrial, Spiritual and Cultural Advancement - International (OISCA); the Federation of Economic Organizations; the Japan International Volunteer Center and the Shanti Volunteer Association), promote international environmental cooperation by implementing environmental conservation projects, hosting symposiums, lectures, and seminars, and by supporting environmental conservation activities.

NGOs have been afforded cooperation regarding afforestation in various ways, such as through afforestation instruction in developing countries, the dispatch of volunteer afforestation workers, and providing environmental education. For example, grassroots level groups, namely, the Green Earth Network; the Japan Association for Greening Deserts; the Defense of Green Earth Foundation; the Green Earth Center; the International Society for Mangrove Ecosystems; the Action for Mangrove Reforestation; the Organization for Industrial Spiritual, and Cultural Advancement - International (OISCA) and the International Charcoal Cooperative Association play important roles in providing cooperative assistance to forestry in various ways.

- Support for Private Sector Activities

Activities in the private sector are supported by funding from sources such as the Ministry of Foreign

Affairs' Subsidy Framework for Japanese NGO Projects and Grant Assistance [Aid] for Grassroots projects; and the Japan Environment Corporation's assistance to private sector organizations from its Japan Fund for the Global Environment.

- Research into clean development mechanism projects as global warming-related measures (as previously mentioned)

- Debt/Environment Swaps

Private sector companies are beginning to participate in natural conservation swaps for the protection of forests and other natural resources. To lend support to these efforts, Japan formulated guidelines in fiscal 1993 for the appropriate implementation of such swaps. Also, to facilitate smooth debt/conservation swaps, the Overseas Environmental Cooperation Center established a network to provide needed information.

## 6.6 Other

### 6.6.1 Considerations in Undertaking International Cooperation Projects

In pursuing development assistance, it is important to take into account environmental conservation – including elements that might contribute to the mitigation of global warming – in order to promote sustainable development.

- In 1989, the Council of Ministers for Global Environmental Conservation agreed that greater consideration must be given to environmental issues when implementing ODA projects. The ODA Charter adopted by the Cabinet in 1992 includes environmental conservation as a basic philosophy underlying Japanese aid, and states that “the pursuit of environmental conservation and development in tandem” must be one of the basic principles of ODA. Environmental considerations was also mentioned as a point to be followed in the implementation and management of ODA in Japan's Medium-term Policy on ODA published in August 1999.
- JICA is in charge of Japan's technical cooperation with other countries. Since 1990, JICA has formulated environmental guidelines for specific fields of international cooperation, such as the ‘Environmental Guidelines for Social and Economic Infrastructure Development Projects’, and the guidelines were undertaken in 20 sectors. These guidelines are mainly used for screening and scoping for environmental effect assessments in development studies.  
Japan Bank for International Cooperation (JBIC), which is an executing agency of yen loans, has implemented environmental considerations based on the environmental consideration guidelines established in 1995 and 1999 by its predecessors, namely the Overseas Economic Cooperation Fund

(OECF) and the Japan Export Import Bank (JEXIM). These guidelines specify screening criteria for projects, obligate the implementation of environmental assessments as needed, and also establish a checklist for the major sectors. As of December 2001, the bank is preparing consolidated guidelines that considered environment more taking into account international trends and external opinions.

Table 6.1 Contributions to Multilateral Institutions and Programs and Global Environmental Facilities (GEF)

Institution or programme	Contribution		
	1997	1998	1999
Global Environmental Facility (GEF)			
1. Promissory notes	0	¥12,188 million	¥12,188 million
2. Note encashments	¥4,737 million	¥5,522 million	¥5,573 million
Multilateral institutions:			
1. World Bank	¥19.5 billion	¥17.6 billion	¥8.9 billion
2. International Finance Corporation (IFC)	¥600 million	¥600 million	¥300 million
3. African Development Bank	¥200 million	0	0
4. Asian Development Bank	¥10.4 billion	¥7.3 billion	¥25.7 billion
5. European Bank for Reconstruction and Development	¥2.8 billion	¥1.3 billion	¥1.0 billion
6. Inter-American Development Bank	¥2.2 billion	¥1.4 billion	¥900 million
7. United Nations Development Programme (UNDP)	\$99 million	\$80 million	\$80 million
8. United Nations Environment Programme (UNEP)	\$6 million	\$4.93 million	\$4.85 million
9. United Nations Framework Convention on Climate Change – Supplementary Fund	\$228,321	\$75,000	\$160,000
10. International Tropical Timber Organization (ITTO)	\$13.6 million	\$11.05 million	\$11.24 million
Multilateral scientific, technological and training Programs			
1.			
2.			
3.			
4.			
5.			

Notes:

- 1) The amounts listed above are for the Japanese accounting year (from April to March of the following year) and are generally in yen (rounded down to the nearest unit).
- 2) The amounts listed above represent the total initial budgetary provision for contributions to specific multilateral financial institutions, not the amounts used for areas related to climate change.
- 3) The amounts listed above represent the budgeted amounts for the fiscal year, in units of ¥1 million rounded down to the nearest ¥1 million.

Table 6.2.1 Bilateral financial contributions related to the implementation of the Convention for 1999 (Loan aid)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal zone management	Other vulnerability assessments
1. Philippines						180.24		10.25	
2. China						150.60		421.42	
3. Bangladesh	47.79								
4. Azerbaijan	160.95								
5. Thailand		563.90							
6. Malaysia	621.23								
7. Tunisia			35.82						
8. Turkey		109.43							
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Notes:

1. This table contains fiscal 1999 figures (based on agreed amounts) for non-grant aid.
2. The figures in the table are estimates only of those projects related to global warming from among all non-grant aid.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1999 (¥113.9 = US\$1).

Table 6.2.2 Bilateral financial contributions related to the implementation of the Convention for 1999 (Grant aid)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal Zone management	Other vulnerability assessments
1. Mongolia	6.12								
2. Indonesia	9.96		0.99						
3. Burkina Faso			5.31						
4. Palau									2.41
5. Maldives	1.16							7.74	
6. Philippines								5.65	
7. Honduras								12.71	
8. Bangladesh								21.82	
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Notes:

1. This table contains fiscal 1999 figures (based on agreed amounts) for general grant aid projects.
2. The figures in the table are estimates only of those projects related to global warming from among all general grant aid projects.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1999 (¥113.9 = US\$1).

Table 6.2.3 Bilateral financial contributions related to the implementation of the Convention for 1999 (Technological cooperation)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal Zone management	Other vulnerability assessments
1. DAC List Assistance Recipient Countries	11.92		36.11		7.78	20.53	46.65	18.31	39.68
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Notes:

1. This table contains (JICA-based) fiscal 1999 figures for technological cooperation.
2. The figures in the table are estimates only of those projects related to global warming from among all (JICA-based) technological cooperation.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1999 (¥113.9 = US\$1).

Table 6.2.4

Bilateral financial contributions related to the implementation of the Convention for 1998 (Loan aid)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal Zone management	Other vulnerability assessments
1. Philippines	8.89	180.82	43.01		22.05	277.33		54.95	
2. China	291.48				24.73	164.07		45.90	
3. Thailand		405.95		19.21					
4. Malaysia	375.02								
5. Tunisia									54.89
6. Turkey									
7. Vietnam	130.80		29.07						
8. Bosnia Herzegovina	31.40								
9.									
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Notes:

1. This table contains fiscal 1998 figures (based on agreed amounts) for loan aid.
2. The figures in the table are estimates only of those projects related to global warming from among all loan aid.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1998 (¥130.89 = US\$1).

Table 6.2.5

Bilateral financial contributions related to the implementation of the Convention for 1998 (Grant aid)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal Zone management	Other vulnerability assessments
1. Mongolia	9.89								
2. Indonesia	9.03								
3. Palau									0.27
4. Maldives	5.27							3.80	
5. Philippines								6.56	
6. Honduras								3.39	
7. China			9.53					11.13	
8. Nepal								4.10	
9. Senegal			5.65						
10. Laos			3.18						
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Notes:

1. This table contains fiscal 1998 figures (based on agreed amounts) for general grant aid projects.
2. The figures in the table are estimates only of those projects related to global warming from among all general grant aid projects.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1998 (¥130.89 = US\$1).

Table 6.2.6 Bilateral financial contributions related to the implementation of the Convention for 1998 (Technological cooperation)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal Zone management	Other vulnerability assessments
1. DAC List Assistance Recipient Countries	13.82		34.79		12.92	16.11	48.93	15.70	25.83
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Notes:

1. This table contains (JICA-based) fiscal 1998 figures for technological cooperation.
2. The figures in the table are estimates only of those projects related to global warming from among all (JICA-based) technological cooperation.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1998 (¥130.89 = US\$1).

Table 6.2.7 Bilateral financial contributions related to the implementation of the Convention for 1997 (Loan aid)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal Zone management	Other vulnerability assessments
1. Philippines									
2. China					30.40	33.97			
3. Indonesia								262.36	
4. Azerbaijan	170.82								
5. India			51.18						
6. Indonesia								262.36	
7. Tunisia								25.87	
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Notes:

1. This table contains fiscal 1997 figures (based on agreed amounts) for loan aid.
2. The figures in the table are estimates only of those projects related to global warming from among all loan aid.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1997 (¥121.00 = US\$1).

Table 6.2.8 Bilateral financial contributions related to the implementation of the Convention for 1997 (Grant aid)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal Zone management	Other vulnerability assessments
1. Mongolia									0.21
2. Syria	5.36								
3. Maldives								6.41	
4. Philippines								9.73	
5. Honduras								0.50	
6. Bangladesh									12.17
7. Pakistan								3.68	11.30
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Notes:

1. This table contains fiscal 1997 figures (based on agreed amounts) for general grant aid projects.
2. The figures in the table are estimates only of those projects related to global warming from among all general grant aid projects.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1997 (¥121.00 = US\$1).

Table 6.2.9 Bilateral financial contributions related to the implementation of the Convention for 1997 (Technological cooperation)  
(millions of U.S. dollars)

Recipient country	Mitigation						Adaptation		
	Energy	Transport	Forestry	Agriculture	Waste management	Industry	Capability-building	Coastal Zone management	Other vulnerability assessments
1. DAC List Assistance Recipient Countries	11.83		42.80		14.20	17.60	43.22	18.44	27.41
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Notes:

1. This table contains (JICA-based) fiscal 1997 figures for technological cooperation.
2. The figures in the table are estimates only of those projects related to global warming from among all (JICA-based) technological cooperation.
3. The figures in the table are converted with the DAC designated rate (end of December) for 1997 (¥121.00 = US\$1).

Table 6.3.1 Description of selected projects or programmes that promoted practicable steps to facilitate and/or finance the transfer of, or access to, environmentally-sound technologies

Project/Program title: Private Activity Promotion Project of the Japan Fund for the Global Environment			
Purpose: Support for domestic and overseas private sector groups that implement environmental conservation activities including global warming countermeasures and strive to develop national awareness of environmental conservation			
Recipient countries	Sector	Total funding	Years in operation
Southeast Asia, such as China, Thailand, & Vietnam; Russia, Latin America	Supported by environmental NGOs Activities for preventing global warming (air environment conservation, prevention of global warming, others)	¥39.1 million	Fiscal 2000
Description Based on the adoption of the Kyoto Protocol under the United Nations Framework Convention on Climate Change and the establishment of the Law to Promote Measures to Arrest Global Warming, activities to prevent global warming have been prioritized, and environmental conservation activities carried out by private sector groups to prevent global warming have been supported.			
Indicate factors which led to project's success:			
Technology transferred:			
Impact on greenhouse gas emissions/sinks (optional)			

Table 6.3.2 Description of selected projects or programmes that promoted practicable steps to facilitate and/or finance the transfer of, or access to, environmentally-sound technologies

Project/Program title: Refurbishment plan for Ulan Bator thermal power plant No. 4 (loan aid)			
Purpose: Steady supply of energy and prevention of air pollution			
Recipient countries	Sector	Total funding	Years in operation
Mongolia	Energy	¥6.139 billion (amount committed in fiscal 2000)	Agreement signed in fiscal 2000
<p>Description</p> <p>Ulan Bator thermal power plant No. 4 is the largest such power plant in Mongolia (maximum designed supply capability: 360MW), and supplies about 70% of the electricity and 60% of the hot water for Ulan Bator City. However, it is an old system, so the combustion efficiency is low, the impact on the environment is high, it has been rather accident-prone, and numerous power cuts and drops in water temperature for heaters have occurred, seriously affecting their citizens' life and industrial production, particularly in winter (lowest temperatures: -40°C).</p> <p>Refurbishment is mainly carried out to improve the automatic boiler control system and changing the system to a direct combustion type to resolve such problems.</p>			
<p>Technology transferred:</p> <p>By carrying out this refurbishment, the operational ratio and combustion efficiency of the power plant will be increased, the impact on the environment will be reduced, the central energy system mainly based in Ulan Bator City will receive a steady electricity supply, and a significant reduction in air pollution is anticipated through the control of emissions of carbon dioxide, sulfur oxides, nitrogen oxides and particulates.</p>			
Impact on greenhouse gas emissions/sinks (optional)			

Table 6.3.3 Description of selected projects or programmes that promoted practicable steps to facilitate and/or finance the transfer of, or access to, environmentally-sound technologies

Project/Program title: Recovery project for post forest-fire reforestation of national parks (2/3 period) (grant aid)			
Purpose: To reestablish the natural vegetation in national parks that suffered from forest fires.			
Recipient country	Sector	Total funding	Years in operation
Indonesia	Forest preservation	¥153 million (promised amount for fiscal 2000)	Signed bills for fiscal 2000
<p>Description</p> <p>In Indonesia, huge forest fires have often decimated their forests and agricultural lands due to an irregular dry climate, causing significant damage to valuable flora and fauna. In particular, a colossal forest fire in 1997/8 became a global environmental issue covering environmental conservation and global warming as well as smoke damage to nearby countries such as Malaysia and Singapore.</p> <p>In Way Kambas national park on the island of Sumatra, about 8,500 hectares out of the park's total area of 130,000 hectares was damaged by forest fires, and it has been estimated that it will take long years for the natural forest ecosystems to fully recover.</p> <p>This project is being implemented to conserve biodiversity and natural ecosystem in the Way Kambas national park. Efforts are being directed to revive about 360 hectares of forest out of the total affected area, while also it is expected to make efforts to reestablish the environment for wildlife living within and outside the project area.</p>			
<p>Technology transferred</p> <p>Successful examples of forest recovery by existing species will eventually accumulate in Indonesia although the number of such cases there is currently limited, and models for forest recovery by existing species are to be established.</p> <p>Contributing to the establishment of guidelines on seedlings, cultivation, and maintenance/management skills for existing species required for the quick recovery of the remaining post forest-fire areas in the national park.</p> <p>Forest patrols, fire prevention monitoring, and forest fire detection systems for the national park are to be improved.</p>			
Impact on greenhouse gas emissions/sinks (optional)			

Table 6.3.4 Description of selected projects or programmes that promoted practicable steps to facilitate and/or finance the transfer of, or access to, environmentally-sound technologies

Project/Program title: Group Training Course to Develop National Inventories and Strategies Against Climate Change			
Purpose: This course provides the latest scientific and technological information on the United Nations Framework Convention on Climate Change and the Kyoto Protocol to developing countries, and supports implementation of obligations specified under the convention by simultaneously introducing Japan's countermeasures.			
Recipient countries	Sector	Total funding	Years in operation
DAC List Assistance Recipient Countries (two people each from Thailand and Sri Lanka, and one each from Indonesia, Philippines, Mexico, Brazil, Yemen, Ethiopia, Kenya, Senegal, and Latvia for fiscal 2000)	Other	¥35.28 million (accepted 13 people)	January 8 <sup>th</sup> 2001 ~ March 1 <sup>st</sup> 2001
Description The 'Seminar for Global Warming Countermeasures' that was provided from 1992 to 1996 was updated and re-presented each year from 1997. 1. Course outline: Lectures, discussions and study trip are provided covering the following points. Outline of the United Nations Framework Convention on Climate Change and Kyoto Protocol, important points of the IPCC Assessment Report, and Japan's actions on global warming issues, etc. Outline of the IPCC inventory guidelines, calculation methods for emission amounts of various greenhouse gases. Options for strategies and various political measures, current status of Japans global warming countermeasures. 2. Trainee eligibility: Administrators who are currently in charge of global warming related issues in the central government.			
Indicate factors which led to project's success			
Technology transferred: Raising skills enabling the self-creation of inventories for greenhouse gases, provision of and upgrading skills for information required to establish strategies to arrest global warming			
Impact on greenhouse gas emissions/sinks (optional)			