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COUNTRY PROFILE



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INTRODUCTION - 2002 COUNTRY PROFILES SERIES

Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, underscored the important role that States play in the implementation of the Agenda at the national level. It recommended that States consider preparing national reports and communicating the information therein to the Commission on Sustainable Development (CSD) including, activities they undertake to implement Agenda 21, the obstacles and challenges they confront, and other environment and development issues they find relevant.

As a result, in 1993 governments began preparing national reports for submission to the CSD. After two years of following this practice, the CSD decided that a summarized version of national reports submitted thus far would be useful. Subsequently, the CSD Secretariat published the first Country Profiles series in 1997 on the occasion of the five-year review of the Earth Summit (Rio + 5). The series summarized, on a country-by-country basis, all the national reports submitted between 1994 and 1996. Each Profile covered the status of all Agenda 21 chapters.

The purpose of Country Profiles is to:

- Help countries monitor their own progress;
- Share experiences and information with others; and,
- Serve as institutional memory to track and record national actions undertaken to implement Agenda 21.

A second series of Country Profiles is being published on the occasion of the World Summit on Sustainable Development being held in Johannesburg from August 26 to September 4, 2002. Each profile covers all 40 chapters of Agenda 21, as well as those issues that have been separately addressed by the CSD since 1997, including trade, energy, transport, sustainable tourism and industry.

The 2002 Country Profiles series provides the most comprehensive overview to date of the status of implementation of Agenda 21 at the national level. Each Country Profile is based on information updated from that contained in the national reports submitted annually by governments.

Preparing national reports is often a challenging exercise. It can also be a productive and rewarding one in terms of taking stock of what has been achieved and by increasing communication, coordination and cooperation among a range of national agencies, institutions and groups. Hopefully, the information contained in this series of Country Profiles will serve as a useful tool for learning from the experience and knowledge gained by each country in its pursuit of sustainable development.

NOTE TO READERS

The 2002 Country Profiles Series provides information on the implementation of Agenda 21 on a country-by-country and chapter-by-chapter basis (with the exception of chapters 1 and 23, which are preambles). Since Rio 1992, the Commission on Sustainable Development has specifically addressed other topics not included as separate chapters in Agenda 21. These issues of trade, industry, energy, transport and sustainable tourism are, therefore, treated as distinct sections in the Country Profiles. In instances where several Agenda 21 chapters are closely related, for example, chapters 20 to 22 which cover environmentally sound management of hazardous, solid and radioactive wastes, and chapters 24 to 32 which refer to strengthening of major groups, the information appears under a single heading in the Country Profile Series. Lastly, chapters 16 and 34, which deal with environmentally sound management of biotechnology, and transfer of environmentally sound technology, cooperation, capacity-building respectively, are presented together under one heading in those Country Profiles where information is relatively scarce.

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LIST OF COMMONLY USED ACRONYMS

ACS	Association of Caribbean States
AMCEN	Africa Ministerial Conference on the Environment
AMU	Arab Maghreb Union
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CARICOM	The Caribbean Community and Common Market
CBD	Convention on Biological Diversity
CIS	Commonwealth of Independent States
CGIAR	Consultative Group on International Agricultural Research
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMESA	Common Market for Eastern and Southern Africa
CSD	Commission on Sustainable Development of the United Nations
DESA	Department for Economic and Social Affairs
ECA	Economic Commission for Africa
ECCAS	Economic Community for Central African States
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIDA	Foundation for International Development Assistance
GATT	General Agreement on Tariffs and Trade
GAW	Global Atmosphere Watch (WMO)
GEF	Global Environment Facility
GEMS	Global Environmental Monitoring System (UNEP)
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GHG	Greenhouse Gas
GIS	Geographical Information Systems
GLOBE	Global Legislators Organisation for a Balanced Environment
GOS	Global Observing System (WMO/WWW)
GRID	Global Resource Information Database
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IAEA	International Atomic Energy Agency
ICSC	International Civil Service Commission
ICSU	International Council of Scientific Unions
ICT	Information and Communication Technology
ICTSD	International Centre for Trade and Sustainable Development

IEEA	Integrated Environmental and Economic Accounting
IFAD	International Fund for Agricultural Development
IFCS	Intergovernmental Forum on Chemical Safety
IGADD	Intergovernmental Authority on Drought and Development
ILO	International Labour Organisation
IMF	International Monetary Fund
IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IPCS	International Programme on Chemical Safety
IPM	Integrated Pest Management
IRPTC	International Register of Potentially Toxic Chemicals
ISDR	International Strategy for Disaster Reduction
ISO	International Organization for Standardization
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature and Natural Resources
LA21	Local Agenda 21
LDCs	Least Developed Countries
MARPOL	International Convention for the Prevention of Pollution from Ships
MEAs	Multilateral Environmental Agreements
NEAP	National Environmental Action Plan
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
NSDS	National Sustainable Development Strategies
OAS	Organization of American States
OAU	Organization for African Unity
ODA	Official Development Assistance/Overseas Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
PRSP	Poverty Reduction Strategy Papers
SACEP	South Asian Cooperative Environment Programme
SADC	Southern African Development Community
SARD	Sustainable Agriculture and Rural Development
SIDS	Small Island Developing States
SPREP	South Pacific Regional Environment Programme
UN	United Nations
UNAIDS	United Nations Programme on HIV/AIDS
UNCED	United Nations Conference on Environment and Development
UNCCD	United Nations Convention to Combat Desertification
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNEP	United Nations Environment Programme

UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNIFEM	United Nations Development Fund for Women
UNU	United Nations University
WFC	World Food Council
WHO	World Health Organization
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WTO	World Trade Organization
WWF	World Wildlife Fund
WWW	World Weather Watch (WMO)

CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES

Decision-Making: The Ministry of Foreign Affairs (MOFA) is responsible for decision making on international cooperation and assistance for sustainable development in coordination with other relevant ministries and agencies. In formulating the ODA policy of the Government, MOFA consults closely with the ministries /agencies concerned, for example by holding coordination meetings with the relevant ministries and agencies to ensure effective and efficient implementation of the ODA in accordance with such policy. Public authorities and local governments may engage in international cooperation by themselves independently from national government. In some cases, however, local governments may be supported or involved in national level cooperation. Moreover, the Japanese Government has been making efforts to decentralize its authority by utilizing its diplomatic missions and local offices of ODA implementing agencies in such activities as drafting Japan's country assistance programmes for respective countries. The principal law and policy documents are: ODA Charter, adopted in 1992; National Action Plan for Agenda 21, adopted in 1993; Basic Environment Law, established in 1993; Basic Environment Plan, established in 1994 and revised in 2000; Initiative for Sustainable Development toward 21st century, adopted in 1997 in the occasion of UNGASS; Medium-term Policy on ODA, adopted in 1999.

Japan's Medium Term Policy on ODA" underlines the importance of cooperation with and participation of the private sector, local governments, NGOs, labor and management organizations in ODA activities. Based on this, the Government has been exchanging views with NGOs and other entities through such dialogues as "NGO-Ministry of Foreign Affairs Regular Consultation Meeting". Some local authorities have their own activities or programmes regarding international environmental cooperation, mostly with their sister cities. Efforts are being made to fully utilize the knowledge and know-how of the Japanese private sector, including active use of private-sector consultants and strengthening of their skills. Due attention is also paid to the effective coordination among the ODA, OOF and private sector funds, taking into account the respective roles of these funds.

Programmes and Projects: Japan has taken a range of ODA programmes and activities for sustainable development through, for example, grant aid, grant aid for debt relief, emergency relief, and concessional loan aid, in accordance with "Japan's Medium Term Policy on ODA" and the ISD.

Status: Japan's environmental cooperation is based on the Initiative for Sustainable Development toward 21st Century (ISD), which was announced in 1997 with the following principles: (1) Human security: Environmental degradation threatens the human existence, and constitutes security issues in a broad sense; (2) Ownership: Developing countries assume the primary responsibility and roles to address environmental issues. Donor countries assist such self-help efforts; and, (3) Sustainable Development: The objective of environmental cooperation should be to realize sustainable development, paying attention to the different economic and social situation of each country.

Capacity-Building, Education, Training and Awareness-Raising: "Training on enhancing women's economic participation through scaling-up of micro enterprises to small-scale enterprise": Japan provides a third-country training programme at University Putra Malaysia for those engaged in activities that support the economic activities of women in Asia and the Pacific region. Lectures are provided to enhance knowledge needed to business, financial management and gender issues that would help women who live in villages establish their own business. Japan also provides training courses on corporate management. Various measures, such as TV programmes, official magazines, symposiums etc. have been taken to promote public awareness. Some recent activities are described as follows: Japan introduced its ODA citizen-monitor programme in 1999 as one of the steps to promote public awareness and improve ODA transparency. This programme provides the Japanese public with the chance to visit ODA operation sites. JICA has training courses for prospective JICA experts, which provide necessary basic knowledge and various skills in the field of international cooperation. In addition, MOFA and JICA have an internship system for graduate students, intended to give young people the chance to come into contact with real aid activities. FASID (Foundation for Advanced Studies on International Development) and GRIPS (National Graduate Institute for Policy Studies) also have international development programmes focusing on practical education for both Japanese and foreign graduate students. The National Environmental Training Institute of the Ministry of the Environment has been providing training in introductory international cooperation, training of environment experts, etc. intended mostly to local government employees.

Information: Information and data on ODA are available in the annual report as publication and also on Web Site (<http://www.mofa.go.jp/>). Detailed information on ODA loan is also available by JBIC (Japan Bank of International Cooperation) annual report and on its website (<http://www.jbic.go.jp/>) In the field of the environmental cooperation, information and data can be obtained at the web site on international environmental cooperation. The URL is "http://www.eic.or.jp/eanet/coop/coop/e_index.html". ODA annual report is distributed to libraries, universities, embassies in Japan and others. As 6 October is designated as the "Day of

International Cooperation”, International cooperation festival and related events have been held annually in order to raise awareness and share and exchange views about international cooperation. Besides, the Ministry of the Environment distributes a brochure entitled “International Environment Cooperation Toward Sustainable Development”. Also, the Ministry is providing a training course of international environmental cooperation for local government officials and others.

Research and Technologies: Green Aid Plan is a cooperative programme aiming at transferring and spreading energy conservation and pollution prevention technology based on Japan's experiences, and thereby supporting self efforts made by developing countries to protect their environment. The examples of joint research, professional networking and other activities are as follows: Institute for Global Environmental Strategies (IGES) (<http://www.iges.or.jp/>) was established in 1997 for the development of global environmental strategies and drafting of innovative policy recommendations; and, Japan has been encouraging joint research and professional networking in various areas related to sustainable development. Japan supports the activities of Asian Pacific Network for Global Change Research (APN) (<http://www.apn.gr.jp>) which is one of three inter-governmental networks for the promotion of research on global change in Europe, Africa, North and South America, and Asia and the Pacific.

Financing: In 1999, the proportion of GNP spent on ODA was 0.35 %. The provision of ODA must be based on a fair understanding and support of tax payers and the general public. For this purpose, Japan will actively endeavor to increase national involvement in and visibility of Japanese aid and to promote better awareness of Japan's assistance programmes in recipient countries.

Cooperation: Japan has organized, among others, seminars on investment promotion to train government officials from developing countries, and dispatched experts of relevant legal systems to those countries as advisers. Japan also actively participates in and promotes regional programmes and projects in areas such as global warming, biological diversity, acid deposition and the marine environment. Japan has ratified most multilateral agreements related to sustainable development and exerted its utmost to encourage their effective implementation at the sub-regional, regional and global levels. Japan has been supporting various projects that are conducive to promoting Agenda 21 at the sub-regional, regional and global levels through financial and technical cooperation. The Ministry of the Environment has hosted various regional coordination and cooperation meetings, such as ECO ASIA. The objectives are to provide a forum for exchange of views among environmental ministers in Asia and the Pacific region; and to promote environmental cooperation and achieving sustainable development in the region. Two projects have been supported under the umbrella of ECO ASIA. One is the ECO ASIA Long-Term Perspective Project aimed at studying the future prospects of the environment in Asia and the Pacific region and recommend possible policy options. Currently the project is concentrating on formulating an action plan for achieving sustainable development in longer term in the region. The other is Environmental Information Network in Asia and the Pacific (ECO ASIA NET Web-site: <http://www.ecoasia.net>). It aimed at establishing an environmental information network in the Region. Japan hosted the 4th Ministerial Conference on Environment and Development convened by ESCAP in Kitakyushu in 2000, which adopted outcomes of: Ministerial Declaration; Regional Message towards “Rio+10”; Regional Action Plan for 2001-2005; and Kitakyushu Initiative for Clean Environment.

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CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES - TRADE

Decision-Making: For more than forty years, the Government of Japan has been committed to maintaining and strengthening a free and non-discriminatory and multilateral trading system under the framework of GATT/WTO. It has also participated actively in the multilateral trade negotiations such as the Uruguay Round and it has benefited to a great extent from such trading system. Japan intends to promote sustainable development amid the tide of globalization through comprehensive trade and investment liberalization toward global economic development, as well as promoting environmental and social development. It is considered necessary to further integrate developing countries into the WTO system. It is also considered that the strengthening of rules and disciplines are essential. In this connection, work should be undertaken on the disciplines on anti-dumping rules, multilateral rules on investment, electric commerce etc.

Programmes and Projects: No information available.

Status: The intensification of globalization offers both benefits and challenges. We recognize that the process of globalization have engendered various concerns in such areas as crime prevention, social equity, and development. In order to cope with those concerns and to share the benefits of globalization, we have proceeded policies including technical assistance for enhanced capacity building in the framework of the WTO. Japan attaches high importance to "good governance" through the improvement of policy management capacities of developing countries. In this connection, it is important for developing countries to introduce and enhance the "participatory process", enabling the variety of actors' such as NGOs participation in the formulation of development plans. Japan has participated actively in the multilateral trade negotiations, including the Kennedy Round, the Tokyo Round, and the Uruguay Round under the framework of GATT/WTO. In these processes, Japan have endeavored to eliminate trade barriers. Japan on its part has contributed to the sustained growth of the world economy through its progressive liberalization and elimination of tariff and non-tariff barriers to trade.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: Japan supports the principle that environment and trade policies should be mutually supportive, as agreed upon in Agenda 21. Japan has been actively participating in and contributing to multilateral discussions on international rules and guidelines in the OECD and the WTO. Japan notes with appreciation that the Report of the Chair of the United Nations Commission on Sustainable Development at its fourth session made valuable input to the WTO Committee on Trade and Environment (CTE). It believes that the CSD could play an important role in building upon common ground worked by the CTE to promote a relationship between trade and environment policies which is mutually supportive. Japan actively participates in almost all commodity agreements and study groups and has made positive contributions to the formation of agreements in the negotiations of such international commodity agreements as those for cocoa, coffee, sugar and tropical timber.

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CHAPTER 3: COMBATING POVERTY

Decision-Making: No information available.

Programmes and Projects: No information available.

Status: Although poverty is not an issue in Japan, the Government recognizes that the relief of poverty in developing countries is an important task. Japan promotes Official Development Assistance to combat poverty in developing countries, taking into account the results of relevant major United Nations conferences and summits such as the World Summit for Social Development.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: Assistance to fulfill the basic human needs of poverty-stricken people accounted for about three-quarters of Japan's grant aid.

Cooperation: Japan also works directly in the field of Forest Conservation and Combating Desertification, where it conducts afforestation projects with the participation of local authorities and relieves the poverty of the local population in Nepal, Thailand, Tanzania, Senegal, and Kenya. Japan attaches importance to networks of NGOs between developing countries and Japan in combating poverty as well as to the active participation of poverty-stricken people and women in this process. Japan supports international organizations such as the Office of the United Nations High Commissioner for Refugees (UNHCR), the Office of the United Nations Disaster Relief Co-Ordinator (UNDRO) and the United Nations Children's Fund (UNICEF).

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS

Decision-Making: The responsible Government bodies dealing with aspects of sustainable consumption and production patterns are the Ministry of the Environment, the Ministry of Health, Labour and Welfare and the Ministry of Economy, Trade and Industry. At the local level, it is the Division in charge of this issue in prefectural and municipal governments. Laws regarding changing consumption include the following: The Law for the Promotion of Utilization of Recyclable Resource: Based on the Law for the Promotion of Utilization of Recyclable Resources which came into effect in October 1991; The Law for the Promotion of Sorted Collection and the Recycling of Containers and Packaging: In order to establish a system to promote the sorted collection of these items by municipal governments as well as their re-commercialization by industry, the Law for the Promotion of Sorted Collection and the Recycling of Containers and Packaging was enacted in June 1995 and came into force in April 1997; Waste Management and Public Cleansing Law: The Waste Management and Public Cleansing Law was enacted in 1970 for the purpose of preserving the living environment and public health through reducing the waste generation, ensuring appropriate waste management (e.g., sorting, storage, collection, transport, recycling, disposal) and conservation of a clean living environment; Specific Household Appliance Recycling Act: Enacted in June 1998 for the purpose of ensuring appropriate waste management and efficient material usage through obliging the retailers to collect and transport the specific household appliance (e.g., TV sets, refrigerators, air conditioner, electric washers) and the manufactures (including importers) to recycling them. The Act will be enforced by June 2001; Law concerning Special Measure for Promotion of Utilization of New Energy: Enacted to accelerate the introduction of new energy for achieving the FY 2010 targets; There are, in addition, standards and regulations that apply. These include: The Waste Management and Resource Recovery Section of the Council for Industrial Structure established guidelines by item (23 items at present) and industry (11 industries at present) in 1990, and has stimulated the industry sector to voluntarily engage in waste management and resource recovery.

The Basic Environment Plan developed under the provisions of the Basic Environment Law stipulates reducing amount of wastes generated and promoting recycling. It also identifies the roles of producers, retailers, consumers, and national and local governments. Issues relating to sustainable consumption and production patterns have been discussed by various councils of the Government and the local authorities. These councils consist of the representatives of various groups of the society such as the academy, industries, etc. so as to opinions of various groups of the society are reflected to the policies.

Programmes and Projects: Environmental Activities Evaluation Programme is a programme that the Ministry of the Environment has been promoting since 1996 in an effort to help various businesses, especially small- and medium-sized enterprises to conduct such environmental activities as self-check of the environmental impacts and preparation of action plans, are provided in this programme. -Eco-Mark Programme is designed to enhance consumers to choose environmentally sound products through provision of product information on environmental aspect. A product allowed to bear the Eco-Mark shall satisfy the qualification that the burden on environment passed through each stage of manufacturing, using and disposing of this particular product is less compared to the other similar products. Working groups composed of experts, establish criteria for qualification.

Status: The Basic Environment Plan decided in 1994 by the Cabinet stipulates that a target for waste management and recycling should be developed promptly. For this purpose, a study on this subject has been conducted. By the Law for Promotion of Utilization of Recyclable Resources, designated industries are required to recycle more wastes and by-products in the manufacturing processes. Targets set for recycle of waste paper and cullet are fifty-six percent by 2000 and sixty-five percent by 2001 respectively. The targets of sewerage construction, for example, are the increases in the percent of population served with sewer system up to sixty-six percent and in the number of population served with advanced waste water treatment up to fifteen million by the end of FY2002. The Law Concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State and Other Entities (Law on Promoting Green Purchasing) fully came into force from FY2001. The Government is to implement green purchasing based on the law to encourage other sectors to follow them, and finally to change their consumption pattern. Technology In most cases, the cost of environmentally sound technologies is higher than existing technologies. Financial measures including subsidy, or reduction of interest of the loan for plant investment, are very effective means of diffusing such technologies. Exhibitions of clean and environmentally sound technologies give good opportunities to spread such technologies.

Capacity-Building, Education, Training and Awareness-Raising: The Government, recognizing that it is itself a big consumer, enacted Law on Promoting Green Purchasing to achieve sustainable consumption and production patterns. In order to comprehensively and systematically promote the green purchasing by the government, the government determined the basic policy including the list of the kinds of eco-friendly goods, etc. with their evaluation criteria for which the government should put an emphasis on procuring. The Eco-Mark Programme is operated to inform consumers of environmentally-friendly goods. The following are examples of measures taken by the government to encourage industries to adopt production patterns that affect the environment less: Environmental Activities Evaluation Programme: The Programme has been promoted since 1996 in an effort to help various

businesses, especially small- and medium-sized enterprises, understand and implement environmental activities; and, To disseminate the design and construction method on thermally insulated buildings, public service corporations give short courses for carpenters: As a follow-up action, the organization has been making efforts to help its members to follow the action plan and take environment awareness into consideration when they act. The Government encourages consumers to implement sustainable consumption patterns by offering a "household eco-account book". The Government has been undertaking an awareness-raising campaign in cooperation with local governments and other sectors, to promote sustainable consumption, for example, through newspapers, magazines, TV programmes, and other various media. In 1998, the Recommended List of Specifications and Quality of Goods was developed to encourage the implementation of the Action Plan for Greening Government Operations.

Information: The basic policy based on the Law on Promoting Green Purchasing could be used as a reference for decision makers and industry managers in procuring products. A study of comprehensive environmental indicators, including ones related to consumption and production patterns is in progress.

Research and Technologies: The Government has been promoting research and development on life-cycle assessment to find method to evaluate the environmental impacts of a product throughout its product life, i.e. extraction of raw materials, manufacture, and consumption and disposal of it. Reduction of wastes generation and the promotion of recycling is the most prioritized area to exert efforts. Improvement of energy efficiency is also an important area.

Financing: The FY 1998 budget for the introduction of New Energy is 74.8 billion yen; in FY1999, the approximately budget request will increase to 87.5 billion yen. Budget for Introduction of New Energy Most of the subsidies are financed by the national budgets. Remitted taxation is also used as effective means to supply economical merits.

Cooperation: The Government and local authorities support developing countries by introducing less environment-affecting techniques in production. For example: Japan is promoting the "Japan-China Environment Cooperation for the 21st Century", which includes measures aiming at the building of circulatory industrial and social systems in China.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - ENERGY

Decision-Making: The following ministries/agencies are generally responsible for making decisions: Ministry of Economy, Trade and Industries (METI), concerning energy issues in general; the Ministry of the Environment (MOE), concerning protection of atmosphere; and the Ministry of Land, Infrastructure and Transport (MLIT), concerning energy-related aspects of transportation. As for the climate change issues, Global Warming Prevention Headquarters consisting of ministries and agencies concerned with global warming problems has served the policy coordination mechanism among them since 1997. The principal laws are: -Law Concerning the Promotion of the Measure to Cope with Global Warming; -Law concerning the Rational Use of Energy; and -Air Pollution Control Law. Regulations that promote sustainable energy are included in the *Law concerning Special Measure for Promotion of Utilization of New Energy*. The law was enacted to accelerate the introduction of new energy for achieving the FY 2010 targets and prescribes for the following: (1) Formulation and announcement of basic policies on new energy use, and (2) Financial support measurement for businesses which use new energy. The Revised Law concerning the Rational Use of Energy and the Law Concerning the Promotion of the Measures to Cope with Global Warming came into effect in April 1999. The Basic Environment Plan addresses such energy-related issues like: -increasing energy and material efficiency in production processes; -promoting use of new and renewable sources of energy; -using environmentally sound technologies for sustainable production. In response to global warming problems, the government of Japan adopted the Guideline of Measures to Prevent Global Warming in June 1998, which describes required measures in energy policies to curb the GHG emissions. The council for energy policy never fails to ask public-comments before making decisions. Some of the NGOs and consumer groups have initiated environmental book-keeping accounting campaign by checking the amount of energy consumption of households and offices and hence saving the energy.

Programmes and Projects: No information available.

Status: Since most of the energy resources are not sufficient, Japan is one of the biggest importers of energy resources such as coal, petroleum, natural gas, and materials for nuclear energy. Since Japanese energy sector is completely privatized, energy production and distribution are operated by private companies. Almost all households, as well as industrial complexes, are assured of the access to electricity. In Japan where natural resources such as fossil fuel are scarce, the energy sources have been diversified for ensuring energy security. Oil, which amounted to 71.9% in 1970 of all energy supply in Japan, constitutes 52.4% in 1998. The shares of natural gas and nuclear energy have grown to 12.3% and 13.7% respectively in 1998, although they were very little in 1970. Coal supply remains at the same level of share since about 1990 while increasing supply amount until 1997. Hydropower, which was not small energy resource in Japan until 1960's, becomes less important (3.9% in 1998) as others become more important. "New energy", such as solar energy, unutilized energy, waste power generation etc., which are expected to play a significant role, still remain a small component of all energy supply, 1.2% in 1998. Black liquor from pulp production process and waste woods constitute the most important part, 65.8% of all new energy supply. Next important energies are waste power generation and the utilization of solar heat, respectively amount to 16.4% and 15.8% in 1998. On the other hand, solar power generation and wind energy are not yet so important as expected in terms of ratio. In accordance with the Guideline of Measures to Prevent Global Warming (June 1998), the emission of carbon dioxide from the transport sector in 2010 shall be reduced by 13 million tons of carbon equivalent in comparison with the Business-as-Usual case by improving the fuel efficiency, etc. The comparatively higher cost of renewable energy sources such as solar and wind power generation than that of conventional energy sources is a barrier preventing the introduction of them into households and local societies.

Capacity-Building, Education, Training and Awareness-Raising: In July 1999, the National Center for the Promotion of Activities to Cope with Global Warming was designated by the Ministry of the Environment and this center services the information on environment-friendly products and so on. In December 1998, the first Global Warming Prevention Month was celebrated. At each school, students learn about these aspects through educational activities carried out in such classes as Social Studies, Science, Home Economics and Moral Education. Guideline of measures to Prevent Global Warming adopted in 1998 highlights the improvement of education and learning relating to environment and energy (nuclear energy, energy saving etc.). In terms of enhancing safety of handling nuclear materials, Japan Nuclear Cycle Development Institute (JNC), a representative research institution for nuclear energy, has set up special internal training courses, such as "Course for Safety Education for Managers" and "Course for Training for designating those who are engaged in the Work dealing with Radiation" for their technical staff. These courses aim at providing them with opportunities for obtaining common and basic technology necessary for the work in JNC. The "Eco-Drive" Programme is implemented for the public awareness of the efficient use of the automobile.

Information: The Ministry of Land, Infrastructure and Transport (MLIT) is authorized to collect data on energy consumption under the Law of Statistics from each transportation mode to derive the total consumption of the transport sector. The Ministry of Land, Infrastructure and Transport annually edits and publishes the

Survey on Transport Energy as a governmental publication. The Survey on Transport Energy is published by the government as a printed publication. Japan has been disseminating information on international negotiations concerning the UNFCCC and the Kyoto Protocol.

Research and Technologies: The Government has been promoting research and development on life-cycle assessment to find a method to evaluate the environmental impacts of a product throughout its whole life. Reduction of waste generation, promotion of recycling and improvement of energy efficiency are priority areas. The diffusion of solar batteries was promoted by governmental subsidy in particular for the installation of solar panel on household roof so that the total subsidy amounted to 10.4 billion yen, for the generation of 12 thousand kW. The number of wind power generation plants is rapidly increasing in recent years to about 200 in 1999. Research and development project on direct utilization and utilization by means of gasification and liquefaction of woody biomass as an energy source is being implemented. A waste water treatment system was developed by an application of a new methane fermentation method, i.e. Up flow anaerobic sludge blanket (UASB) method for the waste water from animal barn. The system requires only half electricity in comparison with a conventional method. Energy generation system by dry-type methane fermentation method has also been developed. Demonstration scale plants are now being operated for the evaluation of the practicability of these processes. High sugar producing crops for production of ethyl alcohol were developed. The diffusion of so-called 'Cogeneration' system supplying electricity and heat simultaneously is also an important progress Japan made since UNCED. In 1998, the total installations amount to 1,051 and the total capacity amounts to 3.7 million kW. Solar batteries of which Japan has advanced technology are popular in small appliances such as electric calculators. Research and development project on utilization of woody biomass is expected to be over by 2004 with operational level technology.

Financing: No information available.

Cooperation: Japan's technical cooperation for developing countries through bilateral ODA (Official Development Assistance) and other forms of economic cooperation includes training programmes related to management of power-generation and power-transmission facilities, renewable energy, mining and oil refinement technologies as well as energy efficiency improvement. Japan has been providing bilateral ODA to developing countries for the establishment of technological research institutes, support to or exchange of engineers and researchers in various fields such as the electric power field. "Grant Aid for Clean Energy" was newly established this fiscal year. This aid programme aims to support developing countries that set up or maintain facilities and equipment using renewable energy sources (for example, solar powered generation) which contribute to the reduction and control of greenhouse gas emission.

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CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT

Decision-Making: Ministry of Land, Infrastructure and Transport. During the formulation process of a new law prepared by the government to be submitted to the Diet, coordination is made among relevant ministries and agencies. Local governments are responsible for ensuring the minimum transport services for the citizens, regional development and the regional transport network, while the central government is responsible for the provision of national framework of transportation. A number of laws, regulations or directives are established regarding the transportation and traffic system including Law for Road Transportation, Law for Road Transportation Vehicles, Law for Preventing Collisions at Sea, Maritime Traffic Safety Law, Port Regulations Law, Law for Preventing Marine Pollution and Marine Distress, Law for Railway Business Enterprise, Track Law, Aviation Law, Law for Road Act, Law for Act concerning Special Measures for Improvement of Roads and Law for Act for Construction of Arterial Motorways for National Land Development.

As for environmental aspects, the following laws are notable ones: the Air Pollution Control Law; Law concerning Special Measures for Total Emission Nitrogen Oxides from Automobile in Specified Areas; and lastly, in accordance with the Law Concerning the Rational Use of Energy, amended in June 1998, an improvement in fuel efficiency of passenger cars and gasoline fueled trucks of 15 % to more than 20 % in comparison with FY 1995 is targeted by the year 2010. As for automobiles, the Ministry of the Environment has set and tightened automotive emission standards for passenger cars, trucks and buses. Ministry of Land, Infrastructure and Transport provides technical regulations of automobiles to ensure the effectiveness of these emission standards. The Ministry of the Environment has started to regulate motorcycles and will start to regulate off-road diesel vehicles from 2003. The Ministry of the Environment has also set and tightened automotive fuel quality standards. Besides, the automobile acquisition taxes of low emission vehicles (methanol cars, hybrid cars, compressed natural gas (CNG) cars and electric cars) are reduced. And the automobile acquisition tax of a vehicle that already meets the 2010 fuel consumption standard is also reduced. Representatives from various stakeholders including business groups, academic communities and consumer groups have participated in the councils that recommend required policies to the Ministry of Land, Infrastructure and Transport. When the Ministry formulates or amends legislation, it invites comments to the draft from the general public by mail, fax or on the internet.

Programmes and Projects: In order to formulate a effective multi-modal transport system, a nationwide transport infrastructure system will be developed with a view to attaining the effective connection between highways/roads network and other mode of transport such as aircraft, ships and railways. The Comprehensive Programme of Logistics Policies was established in 1998, which aims at addressing issues regarding logistics including energy issues and environmental issues and strengthening the comprehensive policies on logistics in close cooperation of ministries concerned. The New 5year Road Improvement and Management Programme was established in 1998. Under this programme, road improvement and management activities will be conducted with the goal of supporting economic structural reform, developing vibrant regional and urban communities, securing a better living environment, and enhancing the security and safety of society throughout Japan. Major programmes have been undertaken with regards to the following: Better meeting the commercial, private, and public needs for mobility in both urban and rural areas; Promoting traffic efficiency, such as reduction of heavy traffic hours, provision of mass transport modes; Improving efficiency in fuel consumption; Reducing emissions from transportation, such as carbon dioxide, carbon monoxide, nitrogen oxides, particulate matter and volatile organic compounds; Promoting non-motorized modes of transport, such as cycle ways, footways, etc.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: The Intelligent Transport System (ITS) is being developed. ITS premises the introduction of intelligent automobiles that analyses information collected from the road and provides a driver with various type of information including warning messages and the optimal routing. ITS is expected to reduce traffic accidents or excess emissions caused by congestion, and hence shorten the travel hour. Similar systems are being developed for railway, sea transport and aviation systems; and Low-emission and high-efficiency gas turbine cargo ships are being developed that will improve the energy efficiency by more than 10% and reduce NOx emission by 1/10 in comparison with the present ships.

Financing: No information available.

Cooperation: No information available.

CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

Decision-Making: The Japanese Ministry of Health, Labour and Welfare is the body most directly concerned with demographic issues. The Government provided information for the Population Conference in Cairo. There is no formal National Population Policy, though there are some national programmes in which population and environment are linked. Women, local communities and the media participate in public debates regarding this topic. Japan places considerable emphasis on making use of NGOs in its assistance programmes in this area, because they are able to work directly with local people at the grass-roots level.

Programmes and Projects: There are some national programmes in which population and environment are linked.

Status: The population in Japan has remained the same since 1994, at 125 million. There has been a national debate on population/environment linkages both in parliament and at the government level. Among the activities that Japan attaches importance to in this area are the following: (1) promotion of the settlement of population in rural areas through the development of those areas, and (2) continuing research, begun in 1993, into the relationship between demographic trends and socio-economic conditions and their effects on environmental problems in the region of Asia and the Pacific.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: Population and HIV/AIDS is one of the areas where Japan and the U.S. have jointly taken initiatives under the Common Agenda for Cooperation in Global Perspective within the context of the U.S.-Japan Framework for a new Economic Partnership.

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CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

Decision-Making: Japan's Ministry of Health, Labour and Welfare is most directly concerned with this area. Japanese legislation concerning the protection and the promotion of human health consists of laws regarding: Communicable Disease Prevention; Preventive Vaccination; Sexually Transmitted Diseases Prevention; Tuberculosis Prevention; AIDS Prevention; Compensation and Prevention of Pollution-Related Health Damage; Air Pollution Control; Water Pollution Control; Automobile NOx Reduction; Agricultural Chemicals Regulation; and Noise Regulation. Long-term strategies have been developed to address the public health issues of both the aged and persons with disabilities.

Programmes and Projects: No information available.

Status: With brisk industrial and commercial activities in urban areas, there is concern over the deterioration of various aspects of the living environment, including the air and water, which accompany concentrations in population. Japan is therefore currently devising a variety of pollution prevention and clean-up measures to promote public health. In addition, Japan is making an effort to compensate sufferers of pollution-related health damage. In rural areas, Japan has established Rural Medical Examination Centers to compensate for the lack of sufficient medical institutions. Japan continues to promote measures to deal with contagious diseases and protection of vulnerable groups.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: Since 1993, Japan has carried out the technological development of vaccines corresponding to the Children's Vaccines Initiative (CVI). Epidemiological research is conducted on the effect of nitrogen oxides on health, and long-term monitoring is carried out on air pollution and its effects on health.

Financing: Japan has greatly increased its budget for dealing with the issues of AIDS, in order to cope with social demand for appropriate treatment of persons with AIDS, to promote social enlightenment on the nature of AIDS, and to promote AIDS counseling, research on AIDS, and international co-operation.

Cooperation: In the area of international cooperation, Japan, as the largest donor of ODA, announced the "Global Issues Initiatives on Population and AIDS" (GII) in February 1994 for cooperation with developing countries by allocating US\$ 3 billion within ODA programmes during the 7-year period from FY 1994 to FY 2000, and In 1999 Japan has reached this target. GII has supported multilateral and bilateral cooperation since its initiation in FY 1994 and has reached US\$ 1 billion in the first years of FY 1994 and FY 1995. GII was begun under the Japan-US framework talks called "The US-Japan Common Agenda for Cooperation in Global Perspective", wherein the two countries agreed to collaborate in 26 fields, including measures for controlling emerging and re-emerging infectious diseases and HIV/AIDS. Also regarding AIDS, Japan continues supporting the activities of UNAIDS, which is combating HIV/AIDS and related problems. Japan has provided technical and financial assistance for the eradication of poliomyelitis, control of tuberculosis, the Expanded Programme on Immunization, the Special Programme for Research and Training in Tropical Diseases and the Diarrhea Disease Control Programme, which are conducted by the World Health Organization (WHO). There has been salient progress occurring in the Western Pacific and in Southeast Asian regions toward the goal of eradicating polio from the earth by the year 2000. Japan has dispatched experts and provided training courses, such as the "International Seminar for Administrators on AIDS Programme Management", the "Communicable Diseases Control Course for Overseas Experts", the "Water Supply Management Seminar" and the "Training Course on Solid Waste Management".

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CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

Decision-Making: The Japanese Government has established “The 7th Housing Construction Five-Year Programme” as a measure for dealing with housing-related problems. Many of the targets are concerned with more environmentally-sound housing, taking into account energy efficiency and alternative energy technologies, water circulation, and waste recycling. In addition, programmes address improvements on the environment surrounding houses, such as the Blighted Residential Area Renewal Project, the overall Community Living Environment Improvement Project, the Street Improvement Project, and the Small Community Area Improvement Project. The Government, local authorities and private organizations cooperate to contribute to the stabilization of people's living standards and the enhancement of social welfare.

Programmes and Projects: No information available.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: Regarding international cooperation in the area of shelter, Japan has conducted various activities based on the “Policy for Long-Term Action in the Area of Shelter (approved by the Board for the Promotion of the 1988 International Year of Shelter for the Homeless)”. In order to further contribute to the alleviation of the severe shelter-related problems confronting developing countries, Japan has improved the level of its cooperation with the United Nations Center for Human Settlements (Habitat) such as supporting Habitat Fukuoka Office, and will also promote such activities as international seminars on human settlement.

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CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING

Decision-Making: In June 1996, the Japan Council for Sustainable Development was established. The Council, consisting of representatives from the government, industry and NGOs, aims at facilitating dialogue among the members concerning the issues of sustainable development. As an advisory body to the Government, it is mandated to follow up on the progress of measures taken under the Plan every year. In the areas of institutional and legal framework, in November 1993 Japan enacted the Basic Environment Law, which serves as a basis for Japan's environmental policy. The law articulates basic principles of environmental policies, which are: (1) enjoyment and succession of environmental blessings; (2) creation of a sustainable society which imposes less burden on the environment; and (3) international cooperation for the conservation of the global environment. The law also provides for the roles of the national and local governments, and those of the private sector and citizens. The Environmental Impact Assessment Law was enacted in 1997, and put in full force and effect in 1999. By this law, Japan has improved old EIA system under administrative guidelines, etc. New system introduced the procedure of screening and scooping, extended the opportunity for hearing public opinion, and so on. In addition, Japan concretely studies contents and methods regarding how to consider environmental conservation in the stage of policies and plans that provide frameworks for the design and implementation of individual projects, after analyzing the current problems. Besides, the national and local governments accumulate their actual experiences on such considerations, and examine efficacy and effectiveness of them. Based on this process, a guideline in terms of environmental consideration in the stage of policies and plans shall be established. In addition to establishing environmental quality standards regarding air pollution, water pollution, soil pollution, and noise, Japan has devised measures, including regulations for the discharge of substances which cause environmental pollution as well as regulations on land-use for the sake of conserving the natural environment, based on individual laws such as the Air Pollution Control Law, the Water Pollution Control Law and the Nature Conservation Law.

Japan's efforts toward the implementation of Agenda 21, as outlined below, are principally based on two action plans, namely, the National Agenda 21 Action Plan and the Basic Environment Plan, which were formulated in 1993 and 1994 respectively. Japan has been promoting and will further develop various measures in accordance with the provisions of these plans. The National Agenda 21 Action Plan was completed in December 1993. The Plan lists various policy measures which need to be taken, consistent with the programme areas as provided in Agenda 21. In accordance with the provisions of the Basic Environment Law, the first Basic Environment Plan was established in December 1994, and the new Plan was formulated and adopted by the Cabinet in December 2000. The new Plan prescribes the same four long-term objectives as the old one, namely, environmentally-sound material cycle, harmonious coexistence, public participation, and international activities, with a view to: (1) building a socio-economic system fostering environmentally-sound material cycles, where environmental load from human activities is minimized; (2) securing a harmonious coexistence between humankind and diverse wildlife and the natural environment; (3) ensuring participation of all the members of society in environmental conservation activities; and (4) enhancing international activities. The Plan also identifies outlines of the policies, the roles of each entity of the society, and the use of various policy instruments to achieve the objectives. The Law Concerning the Promotion of Procurement of Eco-friendly Goods and Services by the State and Other Entities fully came into force in April 2001. The law is to establish the necessary provisions to encourage green purchasing by the Government and so on to establish society which can enjoy sustainable development. To promote environmentally sound land use, Japan has successively formulated the National Land Use Plans (National Plans). As the basic policy for economic management, the "Social and Economic Plan for Structural Reforms - Towards a Vital Economy and Secure Life" which contains various measures for the resolution of global environmental problems, was prepared. Considerations have been given to the environment in such areas as regional development, based on the provisions in Article 17 of the Basic Law for Environmental Pollution Control (1967), and Article 5 of the Nature Conservation Law (1972). Article 19 of the Basic Environmental Law (1993) states that the State shall consider environmental conservation when formulating and implementing measures which may influence the environment.

Programmes and Projects: No information available.

Status: The Japan Council for Sustainable Development undertook the first review in June 1996, and identified areas, which require further improvement. In the area of global warming, it called for further effective measures to meet the targets set. In the field of waste management and recycling, activities of the line ministries and other entities should be effectively linked with a socio-economic system. And, concerning nature conservation, comprehensive and programmatic measures are necessary taking also into account endowments of the nearby natural environment.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: In October 1995, the National Strategy on Biological Diversity was adopted. The Strategy identifies basic principles and policy directions, aiming at the protection and sustainable use of biological

diversity in a comprehensive manner. Japan will continue to promote the development and improvement of an indicator system in which environmental factors are appropriately evaluated, and to coordinate this work with the indicators of sustainable development developed under the auspices of the Commission on Sustainable Development. Japan has developed a System of National Accounts (SNA) that includes the Satellite System for Integrated Environmental and Economic Accounting (SEEA), drawing upon the standards contained in the SNA Handbook on Integrated Environmental and Economic Accounting of the United Nations. Particular importance is being given to quantitative and qualitative changes in Japan's forest and agricultural resources in this regard.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: In the area of acid deposition, the Ministry of the Environment of Japan has proposed the creation of an Acid Deposition Monitoring Network in East Asia, in order to prevent environmental impacts of acid deposition in the area, and has organized three expert meetings since 1993.

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CHAPTER 9: PROTECTION OF THE ATMOSPHERE

Decision-Making: The Ministry of the Environment is responsible for making decisions for protecting the atmosphere. In the review process of the air pollution control law in 2000, the Ministry of the Environment and the Ministry of Economy, Trade and Industry (METI) jointly underwent the reconsideration of the promotion scheme of measures concerning hazardous air pollutants by checking and reviewing the result of ambient atmosphere monitoring and of the reduction of the discharge based on voluntary control plans by major manufactures. The principal laws are: Air Pollution Control Law; Law Concerning Special Measures Against Dioxins; Noise Regulation Law; Vibration Regulation Law; Offensive Odor Control Law.

Japan's short-term (2-3 years) and long-term (5-10 years) goals concern the following: Reduction of greenhouse gas emissions; Conserving and increasing greenhouse gas sinks; Improvement of wood processing technology; Promotion of wood use for a longer period; Promotion of use of wood as a renewable resource; Mitigating ozone depletion; Mitigating transboundary air pollution.

Programmes and Projects: Under the Law concerning the Promotion of the Measures to Cope with Global Warming, which was enacted in 1998, enterprises with remarkable amount of greenhouse gas emission should try to formulate programmes to reduce the emission and publicize the programs and the state of the implementation of the measures specified in the programmes. The Law concerning the Rational Use of Energy which was revised in 1998, introduced the 'Top Runner Approach' for automobiles and electric appliances. Under the approach, efficiency standards are set with an aim of meeting or exceeding the highest energy efficiency levels that have been achieved among products currently commercialized. Under the Law, the enterprise which owns a factory that consumes large amount of energy, shall formulate a medium-long term plan every year for achieving the objective of rational use of energy determined by the government. Various measures will be taken to form a desirable urban environment in order to build "Eco-City (environment-harmonized city)" designed for reduction of pollution load, harmonious coexistence with nature, and creation of amenities. In relation to promoting the "Eco-City", city planning departments of municipalities have been making efforts to formulate urban environment plans, which contain comprehensive and systematic urban environmental measures. A remarkable example of such measure is a creation of a "Wind Path" in urban areas. A wind path is secured by the setbacks of buildings and plantation of trees along the streets, thereby helping mitigate the heat island effect in urban center and remove air pollutants with improved ventilation.

Status: In general, atmospheric environmental quality has been significantly improved, as compared with that of 1960s - 1970s when there were many patients of respiratory disease caused by serious air pollution. As for the impact of atmospheric changes on ecosystems, an 18 year-long survey on the acid deposition in Japan has been carried out, through which, among other ecosystems, forest degradation has been observed in some monitoring points. However, its cause is still unclear and the relationship between the ecosystems and the impact of atmospheric changes is under investigation through the national survey on acid deposition in Japan. According to the trend of demand and supply of energy and other factors, policies and measures relevant to GHGs emission reduction need to be reviewed. Japan measures the concentration of air pollutant substance at the ambient air pollution monitoring stations and roadside air pollution monitoring stations and announce the state of air pollution every year. According to this announcement, especially the concentration of nitrogen oxides and suspended particle matters are still high. It is mainly caused by the fuel consumption at automobiles and factories. Especially Tokyo areas require most immediate attention.

Capacity-Building, Education, Training and Awareness-Raising: Japanese government has conducted various activities in disseminating information on climate change issues including international negotiations concerning the UNFCCC and the Kyoto Protocol. The following examples are notable ones: The National Center for the Promotion of Activities to Cope with Global Warming, designated by the Ministry of the Environment in July 1999, has provided the information on environment-friendly products since then; The Global Warming Prevention Month has been celebrated in December in memorizing the adoption of the Kyoto Protocol in December 1997 in Kyoto, Japan. Japan provides several training courses for capacity-building on not only such domestic environmental issues as noise, vibration and odor pollution, but also global environmental issues under the auspices of various organizations and networks such as JICA, EANET and APN. The Eco-Frontier Fellowship Programme by Ministry of the Environment and part of STA fellowship by Ministry of Education, Culture, Sports, Science and Technology have been implemented to invite overseas researchers to Japan in order to facilitate joint research activities on global environmental issues.

Information: The Japan Meteorological Agency (JMA) regularly publishes, "Report on Recent Climate Change in the World" and "Climate Change Monitoring Report" to provide information on the recent changes and current situation of global and regional climate and the outlook of future climate. In addition to the printed material, JMA disseminates information on these reports via the internet (<http://www.kishou.go.jp/> (in Japanese)). There is no emission data of ozone depleting substances so far. A survey has been conducted to investigate all facilities under Air Pollution Control Law in order to estimate total amount of national emissions from them. To monitor the climate change, the Japan Meteorological Agency (JMA) has developed and

operated database containing climate observation data, which are internationally exchanged within the framework of the World Meteorological Organization (WMO) and bilaterally. The Ministries that collect and archive the scientific data and information provide their data by publications or via the Internet. The observation data of high-latitude stratospheric ozone by satellite sensor (<http://www-ilas.nies.go.jp/data2/DataDistribution.html>). Air concentration monitoring data collected by local governments are compiled and published by the Ministry of the Environment on yearly basis. The Ministry of the Environment and some of the local governments disseminate the monitoring data on their website, and anyone is accessible to the raw data on hourly basis (<http://www.w-soramame.nies.go.jp/>). The Japanese Government annually publishes "Quality of Environment in Japan". via the Internet.(Same address as Q30) Data and information archived in the WMO World Data Center for Greenhouse Gases (WDCGG), which is operated by the Japan Meteorological Agency (JMA) is disseminated and shared at the national and international level in publications and on the CD-ROM and on the Internet. Furthermore, JMA publishes the future projections of global warming with JMA's climate model in printed forms and on the CD-ROM. The outline of these products is available in the JMA website (<http://www.kishou.go.jp>).

Research and Technologies: Representative examples of research programmes aimed at promoting a better understanding of the processes and consequences of changes in the atmosphere are as follows: Japan, China and Korea started trilateral research activities on the long-range transboundary air pollution issues by developing emission inventory for establishing numeric models in the region; The Frontier Research System for Global Change, which is a joint program of Japan Marine Science and Technology Center and National Space Development Agency, is conducting researches in the field of climate variations, hydrological cycle, global warming, atmospheric composition and others under the supervision of the Ministry of Education, Culture, Sports, Science and Technology; The Japan Meteorological Agency has studied the prediction of the climate system and its variability. In the year 2000, JMA initiated a five-year project entitled "Projection study of regional climate change over Japan due to global warming." Both national and local governments have been monitoring the concentrations of air pollutants such as SO₂, NO₂, O₃, SPM, CO on hourly basis at the more than 2,000 monitoring stations, and hazardous air pollutants such as benzene, dioxins on monthly or on every season basis at more than 300 monitoring stations. Also, the 'Guideline of Measures to Prevent Global Warming', established in 1998 to promote the reduction of green house gases, lists various technologies being developed for the reduction of green house gases emissions.

Financing: Public sources are principal for activities aiming at the reduction of dioxins emission from waste incinerators. Private sources are the major sources in other cases. There are measures that reduce tax rates for environment Equipment and funds that are provided for environment Equipment.

Cooperation: The Japan Meteorological Agency (JMA) has been involved in global environmental issues including global warming through observation, monitoring, analysis, prediction and research, in cooperation with international frameworks such as the World Meteorological Organization (WMO). In addition, JMA has carried out bilateral atmospheric environmental research projects with Australia, Brazil, Canada, China, Germany, India, Netherlands, Norway, Russia, Republic of Korea, Sweden and USA. Japan has already ratified UNFCCC and Vienna Convention, been participating in the Conference of the Parties, making every efforts to ensure the entry into force of the Kyoto and Montreal Protocol. Japan signed the Kyoto Protocol in April 1998 but has not ratified yet. For the Montreal Protocol, Japan formulated the "Law Concerning the Protection of the Ozone Layer through the Control of Specified Substances (Ozone Layer Protection Law)" in May 1988. Japan has been promoting the East Asia Acid Deposition Monitoring Network(EANET), in purpose of monitoring, collecting and analyzing the data to raise a shared region-wide awareness of the conditions caused by acid deposition. Japan cooperates with developing countries in reducing the amount of automobile emissions through the improvement of inspection systems, the transfer of related inspection technology, the adoption of more energy-efficient means of public transportation, and the drawing up of a master plan for achieving efficiency in the distribution of goods. In its assistance to developing countries, Japan contributes to Multilateral Funds for the protection of the ozone layer and provides group training by the Japan International Co-operation Agency (JICA).

Improvements in the collection and assessment of accurate scientific data are prerequisite for taking appropriate measures to protect the atmosphere. In this regard, Japan plays a leading role in the Integrated Global Observing Strategy Partnership, the international framework for the strategic integration of remote sensed and in-situ observations by both research and operational programmes.

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CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

Decision-Making: The Ministry of Land, Infrastructure and Transport is primarily responsible for this sector and is a member of the National Coordination Mechanism for Sustainable Development. The Ministry of Land, Infrastructure and Transport coordinates basic policies and programs relating to the use of national land among ministries and agencies. The basic concept of national land use is designated in the National Land Use Planning Act. The basic concept underlying national land use is to secure a living environment which is healthy and culturally-enriched and to promote the well-balanced development of national land." The City Planning Law states that city development should be in harmony with agriculture, forestry and fisheries. A system to designate Urbanization Promotion Areas and Urbanization Control Areas has been established in order to coordinate agricultural and non-agricultural land uses in urban areas. Japan has established the Comprehensive National Development Plan under the Comprehensive National Land Development Act and the National Land Use Plan under the National Land Use Planning Act. The comprehensive National Development Plan is a framework plan for the use, development and conservation of the land of Japan. It defines the long-term directions for the construction of infrastructure. The National Land Use Plan provides the basic framework for all other national plans relating to the use of national land as well as serves as an umbrella plan for prefectural and municipal plans. It also sets comprehensive and long-term guidelines concerning land use. Japan's new Comprehensive National Development Plan entitled "the Grand Design for the 21st Century" was created in March 1998.

The new plan states that Japan should tackle the issues of land management while recognizing the limited environmental capacity and resources. The Third National Land Use Plan was formulated in February 1996 for the purpose of ensuring the following concerning national land use: (i) safety and security, (ii) sustainability and coexistence with nature, and (iii) beauty and comfort. In essence, the National Land Use Plan is intended to ensure the balanced use of national land over the long term while giving priority to public welfare and the conservation of the natural environment. For example, the Plan stipulates that in rural villages where farmland and residential land mingle, it is desirable to promote systematic and appropriate land use, taking into account specific local situation. The National Land Use Plan comprises the National Plan, Prefectural Plans and Municipal Plans. Prefectural Plans, which are based upon the National Plan, are decided by the prefectural governor. Municipal Plans, which are based upon the Prefectural Plan relevant for each municipality, are decided by the mayor of the municipality. When the Minister of Land, Infrastructure and Transport decides the National Plan, he is expected to consider the opinions of prefectural governors. When the prefectural governor decides the Prefectural Plan, he is expected to consider the opinions of mayors of municipalities. The National Land Use Planning Act stipulates whenever a municipal government decides on a municipal plan, a municipal government shall take in advance the necessary measures to reflect fully the intentions of its residents.

Programmes and Projects: Various global research programmes on climate, climate change and El Ni events have been promoted in Japan including international joint research programmes. Though the regional impacts of ENSO on the Far East including Japan are being studied, the assessment of impacts has yet to be clarified due to the complexities and uncertainties of the various regional features.

Status: "Grand Design for the 21st Century" points out that given the need for clarification of the philosophy of national land planning and for diverse reforms including decentralization and other administrative reforms, it is necessary to establish a new national land planning system. The National Land Development Council continues to deliberate the state of a national land planning for the 21st century. In order to go beyond the current achievements of the National Land Use Plan, research is to be carried out on the present state of national land use and in particular comprehensive support is provided to municipalities with regard to the drawing up of and revising of municipal plans.

Capacity-Building, Education, Training and Awareness-Raising: To implement the "Grand Design for the 21st Century," the government organized a liaison conference for promotion by the government offices concerned and promotes the Plan at all levels of government.

Information: The Geographical Survey Institute of Japan receives remote sensing data every day to monitor the state of national land. Every month it produces Normalized Difference Vegetation Index (NDVI) images in graphic form from the data it receives. The NDVI images are accessible at: http://www1.gsi.go.jp/ch3www/EODAS/ndvi-download_e.html.

Research and Technologies: At present, research relating to possible impacts of ENSO and integrated land management planning is limited. The need for such research has been identified and we expect to see an increase in land management planning-related research in the near future.

Financing: No information available.

Cooperation: Internationally, within the framework of its bilateral or multilateral initiatives, the Japanese Government has been involved in the intergovernmental Man and the Biosphere project of UNESCO, under which the effects of human activities and land-use on the eco-system were studied.

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CHAPTER 11: COMBATING DEFORESTATION

Decision-Making: The Forestry Agency is primarily responsible for this sector and is a member of the National Coordination Mechanism for Sustainable Development. In July 2001, the Government of Japan amended and renamed *the Forestry Basic Law*, which was originally enacted in 1964, and enacted the new *Forests and Forestry Basic Law*, in order to set new guiding principles for Japan's forest policies in accordance with the concept of sustainable forest management. As of September 2001, the Government is on the way of establishing *the Forests and Forestry Basic Plan* which should: (i) outline basic directions of forest management policies, (ii) provide with goals to be sought by all stakeholders concerned, including national and local governments, forest industry and forest owners, as well as consumers of forest products, and (iii) identify policy programmes that should be implemented in order to meet those goals. In the new *Forests and Forestry Basic Plan*, the basic approach to implementation of sustainable forest management will highlight the importance of meeting diverse needs and values put on forests, through sound management practices, forest conservation, research activities, international cooperation, and recreational, cultural, and educational use of forests and so on. Based on the new *Forests and Forestry Basic Plan*, *the Nationwide Forest Plan*, a comprehensive forest management plan in accordance with *the Forest Law*, will be revised. Under the Nature Conservation Law and the Natural Parks Law, areas with scenic beauty and valuable ecosystem are designated as the Nature Conservation Areas and the Natural Parks. These protected areas play an important role in the forest conservation, and also contribute to the sustainable forest management in Japan. The Government of Japan established the National Land Use Plan as part of a comprehensive and integrated national plan for the management of land resources. The *Forests and Forestry Basic Plan*, which is an integral part of the national forest programme, will be developed to maintain consistency with national land policy. The contents of the important forest management plans, such as the *Forests and Forestry Basic Plan*, are developed through consultations with relevant governmental agencies based on the *Forests and Forestry Basic Law*.

Once agreement is reached, the Cabinet makes the decision. Efforts are made to ensure the consistency and harmony with other national policies and plans such as the Basic Environment Plan, which aims at achieving sustainable development. The IPF/IFF proposals for action are relevant to the basic approach towards sustainable forest management in Japan. For example, in accordance with the *Forests and Forestry Basic Plan*, the Government establishes the Nationwide Forest Plan, and based on this plan, local governments also establish Regional Forest Plans. This planning system is in agreement with the national forest programme suggested by the IPF/IFF. In implementing the IPF/IFF proposals for action, there are three major aspects in which concrete steps have been taken in Japan: (i) application of criteria and indicators (C&I) for sustainable forest management, (ii) revision of the Forest Law in 1998, and (iii) revision of *the Forestry Basic Law* and related laws including *the Forest Law* in 2001. Based on the 1998 revision of the Forest Law, any concerned party can make comments on drafts of forest management plans at the local level. In addition, as a result of this revision, municipalities are authorized to make and implement forest management plans except with regard to national forests within their jurisdiction. As a result, participation of stakeholders has been encouraged, which meets the IPF/IFF proposal for action, which emphasizes "the need for appropriate participatory mechanisms to involve all interested parties". Following the revision of *the Forestry Basic Law* and related laws in 2001, forest- and forestry-related policies will be directed towards meeting diverse needs and values put on forests, which is one of the most essential aspects of the IPF/IFF proposals for action.

Programmes and Projects: The national forest programmes most of which was established before the development of the IPF/IFF guidelines, meets most of the requirements suggested by the IPF/IFF guidelines. The development and testing of C&I for domestic forest management practices have been promoted in collaboration with the Montreal Process. In 1996, a ten-year project to develop methodologies for identifying applicable indicators for forest management at a unit level was launched in two pilot areas. In national forests, in addition to the conventional practice of designating protected forests, Green Corridors system which connects protected forests (mainly the forest ecosystem reserves) is introduced to formulate a network of wildlife habitats.

Status: Forests cover about 25 million hectares or about 70% of Japan's national land area. Of the entire forested area, planted forests make up 10 million hectares accounting for 41% and natural forests and others make up 15 million hectares accounting for 59%. The current growing stock is about 3.8 billion m³ with an average annual growth of 80 million m³ consisting mainly of planted forest, which mostly require further tending and thinning. The national forests cover 7.6 million hectares, approximately 20% of Japan's land area or about 30% of the entire forest area. A large portion of the national forests is located in the backbone mountain ranges or upstream water reservoir areas, including pristine natural forests. The recent policy reform resulted in an increase in the area of the national forests managed primarily for social objectives, from 50% to 80% of total forest areas. These objectives include water resource management, soil conservation, recreational use and environment protection.

Capacity-Building, Education, Training and Awareness-Raising: The following actions have been taken by

the Government: promotion of public awareness on healthfulness and renewability of wood products; support for the supplying of low-cost and high-quality housing materials; support for research and development activities for new markets for wood products; and promotion of wood use in public buildings.

Information: The Government of Japan has started the Forest Resources Monitoring System using the C&I for policy development, which monitors changes in quality and quantity of forests on a nation-wide scale considering some of the C&I identified in the Montreal Process. Studies are underway on the effects of trade policy on sustainable forest management as well as on international comparability and equivalence of forest certification-and-labeling schemes with the aim of promoting further improvement of forest management. Information on sustainable forest management is provided by several sources. For example, summaries of domestic conferences on sustainable forest management are released to the press. The Forestry White Paper, the Government's annual report on forestry, is published upon Cabinet approval. It provides information about the current situation and governmental actions toward sustainable forest management. The summary of the information can be accessed at the following URL. <http://www.maff.go.jp/>. In addition, the Government of Japan provides information to other related organizations to be used in the publishing of journals and books.

Research and Technologies: The Government of Japan has been promoting research and development on sustainable forest management and damages on forests caused by weather disaster, forest fire, diseases and harmful insects. Based on these experiences, Japan carries out research and development on measures of overseas sustainable forest management and evaluation of global climate change impact.

Financing: There are privately- and publicly-owned forests where specific activities are legally restricted in order to strengthen the non-market environmental benefits provided by the forests. In such cases, some compensation is available based on the established guidelines by the authorities for privately owned forests. There are privately- and publicly-owned forests where specific activities are legally restricted in order to strengthen the non-market environmental benefits provided by the forests. In such cases, some compensation is available based on the established guidelines by the authorities for privately owned forests.

Cooperation: To promote sustainable forest management at the global level, it is important to promote international cooperation for assisting developing countries in their sustainable forest management as well as to actively participate in intergovernmental dialogues on forests and forestry. The Government of Japan participated in all of the IPF, IFF and UNFF sessions and in most of the related international fora. Also the Government of Japan has been one of the most active participants in the Montreal Process which is one of the C&I processes. The Government of Japan is actively promoting bilateral technical cooperation through the Japan International Cooperation Agency (JICA) and projects sponsored by the Forestry Agency. The Government of Japan has been contributing to many other actions of the IPF/IFF proposals for action, which are carried out by international organizations such as FAO, ITTO and CGIAR/CIFOR. In particular, the Government of Japan supported ITTO for development of the C&I for the sustainable forest management and their application to developing countries at national/regional level.

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CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

Decision-Making: The government of Japan has established the “Basic Environment Law” which outlines basic ideas on environment conservation in 1993 and “Basic plan for environment” was developed based on the basic law, which includes combating desertification. In addition, “National action plan for Agenda 21” was developed based on the Agenda 21: Programme of Action for Sustainable Development in 1993.

Programmes and Projects: Various research programmes on combating desertification have been promoted in Japan based on “Basic Environment Law” and “Agenda 21 action plan”.

Status: There are no deserts or areas in danger of becoming deserts in Japan.

Capacity-Building, Education, Training and Awareness-Raising: The Ministry of the Environment has issued leaflet about efforts to combat desertification, for capacity-building, Education, and Awareness-Rising.

Information: The following websites on Combating desertification is available: Global Environmental Forum: <http://shonan.ne.jp/~gef20/gef/>.

Research and Technologies: Japanese institutions are conducting a variety of study and research activities. For example, the Ministry of the Environment of Japan conducts research on measure to combat desertification and also provides the Global Environment Research Fund to promote research on desertification. Also, Japan's Ministry of Agriculture, Forestry and Fisheries, together with relevant institutions, conducts studies, for example, a study for combating desertification in Asia and a study for preventing soil erosion in Latin America, and research on prospects of utilizing desert areas for agriculture in Mongolia.

Financing: The accumulative total of the Japanese financial contributions to the UNCCD between Japanese FY 1993-2000 has reached about US\$7.7 million. Through these financial contributions, Japan has supported the participation of developing country parties in the Conference of the Parties, and helped the UNCCD secretariat organize various meetings such as regional meetings to develop regional action programmes. Thus, Japan has been making a variety of continuous contributions as a developed country party.

Cooperation: Japan signed The United Nations Convention to Combat Desertification in Countries Experiencing Drought and/or Desertification Particularly in Africa on 14 October 1994 and accepted on 11 September 1998. Japan had been making substantial contributions to the implementation of the Convention even before it officially became a party. Through its contributions, Japan has been supporting, for example; various regional meetings in Asia such as the ministerial meeting, focal point meetings, experts meetings and workshops; national awareness-raising seminars and regional activities in Latin American and the Caribbean; inter-regional workshop such as Asia-Africa Forum; and national report preparation by Asian, African, Latin America and Caribbean country parties. Furthermore, Japan hosted an ad hoc panel on early warning systems on June 2001 and an expert's workshop (TPN1 workshop) on desertification monitoring and assessment with respect to the Thematic Program Networks (TPNs) in the context of the development of Asia's regional action program for UNCCD. The latest national report to the Secretariat of the Convention was prepared in 2000.

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CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

Decision-Making: With respect to mountain areas, the Ministry of the Environment and the Forestry Agency are the institutions primarily responsible for sustainable development. Related land use plans and surveys include: The National Land Use Planning Act (25 June 1974); Basic Plan for Forest Resources (24 July 1987); Nation-wide Forest Plan (9 August 1991); Wilderness Areas and Nature Conservation Areas; Protection of Forests; Protected Forests of National Forests; Natural Parks; Protection Areas for Birds and Mammals; Natural Habitats Conservation Areas; and National Survey on the Natural Environment. These plans and surveys do not specifically cover mountain areas. They are closely related, however, because a large portion of the land of Japan consists of mountains, much of which are covered by forests. Consequently, much of the discussion related to forests, is also relevant to this sector. The national legislation directly related to mountain areas consists of the following specific laws and acts: The Mountainous Villages Development Act; Forest Law; Forests and Forestry Basic Law; Natural Parks Law; Nature Conservation Law; Wildlife Protection and Hunting Law; Law for the Conservation of Endangered Species of Wild Fauna and Flora; and Sabo Law (erosion control law).

Programmes and Projects: In order to maintain rich forest resources in mountain regions for future and secure safe and comfortable livelihood of people, the Forestry Agency takes measures to prevent mountainous disaster and improve water head forests through maintaining and expanding healthy forests by promoting afforestation and land conservation projects. It also promotes conservation of forest ecosystem and, through promoting forestry, encourages tending and management of forests. However, in order to develop mountain regions where forestry workers or those who are managing forests are living, the Forestry Agency promotes 1) securing employment opportunity through the development of forestry and forest industry, 2) improving living environment which is far behind to that of cities, and 3) improved communication and exchanges between cities and mountain villages.

Status: Given the superb ecosystems in mountain areas, Japan is studying the adoption of eco-tourism, which will both conserve the ecosystems and promote a positive economic spillover to regional communities. Japan is also establishing "recreational forests" within National Forests in the mountains and promotes their health, cultural and educational purposes. "Eco-roads" are being built in the mountains to provide sufficient roads in harmony with the environment. Floods, avalanches, landslides and earthquakes are serious problems for Japan. The number of hazardous spots of mountainous disasters due to slope failure, landslide, and debris flow and land creep increased from 131,000 in 1978, to 205,000 in 1992.

Capacity-Building, Education, Training and Awareness-Raising: For the development of mountain villages based on the characteristics of each region, the Forestry Agency assists in organizing, planning and training for nature school. The Agency also provides support in environmental education for school children including forestry experience in cooperation with Ministry of Education, Culture, Sports, Science and Technology, people's participation in greening, utilization of forests for healthy recreation, and information provision on the use of forests through internet.

Information: The Forestry Agency has been accumulating information on forests and forestry including the forest inventory system, which provides basic information to formulate forest plans and statistics on the administration and management of National Forest.

Research and Technologies: In order to manage and conserve the various ecosystems in mountain area, Japan carries out continuous surveys and research of managing fragile ecosystems and sustainable mountain development. The examples include: assessment of artificial impact for the forest ecosystem, developing technologies for conservation of fragile ecosystem, sustainable development on forest management on mountain village area through relationship with urban area making use of traditional culture and local resource.

Financing: No information available.

Cooperation: The Government of Japan is actively promoting bilateral technical cooperation through the Japan International Cooperation Agency (JICA) and projects sponsored by the Forestry Agency. There are also many other activities which have been undertaken, including contributions to international organizations such as FAO, ITTO and CGIAR/CIFOR.

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CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

Decision-Making: The Ministry of Agriculture, Forestry and Fisheries (MAFF) are the primary responsible institution in the areas of agriculture and rural development. In April 1994, the National Council for Sustainable Agriculture was formed by JA (a national organization of agricultural cooperatives) in cooperation with Nisseikyo (a national body of consumer cooperatives) to promote various actions to achieve the targets of Sustainable Agriculture. The members of the Council are farmers, consumers and distributors. The Basic Law on Food, Agriculture and Rural Areas, was enacted in July 1999. The multifunctional roles recognized in this law consist of the conservation of national land, water resources, and the natural environment by the formation of a good landscape and the maintenance of cultural traditions. The importance of the sustainability in agriculture is also clearly described in the Law. A provision of "Maintenance and Promotion of Natural Cyclical Function of Agriculture" has been created under the Basic law on Food, Agriculture and Rural Areas. Furthermore, the government of Japan also enacted an entirely new law, the Law for Promoting the Introduction of Sustainable Agricultural Production Practices in July 1999. The Law stipulates that farmers shall improve soil quality management by applying composted manure or other organic materials with soil analysis and simultaneously reduce the amount of chemicals, both fertilizers and pesticides, by using alternative practices such as the application of fertilizer with high performance, pheromones or cleaning crops. The Law concerning the Appropriate Treatment and Promotion of Utilization of Livestock Manure was enacted in July 1999 to ensure the appropriate treatment of and promotion of the utilization of manure.

There are certain restrictions set by the national legislation in the transfer of productive arable land to other uses. In the Basic Environment Plan, established in 1994, sustainable agriculture. More specifically, sustainable agriculture has been recognized as a system in which farmers can reduce the amount of chemical fertilizers and pesticides to be applied partly through improving soil fertility by applying well-composted manure or other identified materials. The National Council for Sustainable Agriculture is represented by farmers, consumers, distributors, researchers and scholars. At present, about half of the agricultural cooperatives throughout the country are tackling sustainable agriculture, with numerous activities such as the provision of technical support to member farmers. The number of cooperatives committing to the promotion of sustainable agriculture is expected to increase. Since the Government and the Council have maintained a good relationship, the voice of farmers can be delivered to the government through the Council and political decisions can also be announced via the Council. The role of women in promoting sustainable agriculture is also expected to become more important since the women's role is emphasized in the new agricultural basic law. Opinions from women's points of view regarding sustainable agriculture will be taken into account in the Council.

Programmes and Projects: The Agricultural and Rural Development Project has contributed to reducing labor hours for farming and for increasing productivity of agricultural production through implementing such measures as enlargement of farmland, arrangement of irrigation and drainage, construction of agricultural roads and improvements of soil conditions in order to introduce middle- and large-sized machinery to farms. Currently, the same Project is shifting from developing agricultural production to the improvement of infrastructure in rural areas in budgetary terms. The budget allocated to rural sewerage projects has been increasing in order to enable these areas to catch up with medium-sized cities with regard to the sewerage penetration ratio. Based on the Land Improvement Law established in 1949, the government has been carrying out Land Improvement Projects which in turn lead to stable agricultural productivity. Agricultural water resources have been developed as part of these projects in coordination with comprehensive planning for water use.

Status: In order to promote sustainable agriculture, the government of Japan announced the basic concept of sustainable agriculture in April 1994. It is aimed at reducing the amount of chemical fertilizers and pesticides being applied, partly through improving soil fertility by applying well-composted manure or other materials. At the same time, the Government recommended several types of targeted farming systems and practices, including organic farming, as guidance for farmers. The government has also fostered sustainable agriculture by guiding local governments to establish support systems for farmers and organize broad relationships among many organizations of producers, traders and consumers step by step. The Basic Law on Food, Agriculture and Rural Areas established in July 1999 replaced the Agricultural Basic Law which had been in effect for 38 years. One of the basic principles of the new law, which will direct future policy, is the guarantee of food security and a stable food supply based on domestic agricultural production.

Capacity-Building, Education, Training and Awareness-Raising: The government of Japan has been encouraging such technical research and development as Integrated Pest Management (IPM) and release-controlled fertilizers for encouraging sustainable production harmonized with the environment. The government has also popularized the technologies through the verification of advanced farming systems or the organization of training courses in order to provide opportunities for all farmers to implement sustainable farming systems. Furthermore, the government has been conducting a programme for supporting farmers' groups which intend to develop the facilities necessary for sustainable agriculture. The government has given awards to prominent

farmers' groups through contests organized by the National Council for Sustainable Agriculture, and the activities of these groups have been published. The government has implemented "Guidelines for Labeling on Organic Farm Products and Specially-Grown Farm Products" since 1993, providing rules of production and methods of verification for those products. Under these guidelines, when labels such as "Pesticides Used in Reduced Quantities" or "Chemical Fertilizers Used in Reduced Quantities" are claimed, indications of the frequency and quantity of inputs are required. These guidelines will help consumers choose products produced through low-input sustainable agriculture.

Information: The following Websites on sustainable agriculture are available: Research Information of national agricultural experiment stations: <http://www.affrc.go.jp/ja/seika/index~j.html> (in Japanese); Information of pesticide and fertilizer: <http://www.jppn.or.jp/> (in Japanese); Information of IPM: <http://www.affrc.go.jp:8001/agroipm/narc.html> (in Japanese).

Research and Technologies: For improving efficiency in fertilizer application, the development and popularization of new technologies such as the application of fertilizers with high performance and the application of fertilizer to certain precise places using sophisticated machinery, have been undertaken. Farmers are guided to follow fertilizer application guidelines, which were recently modified by local agricultural research centres in order to make them more environmentally-harmonized ones. Since demand for water for other uses is increasing, the efficient use of agricultural water via measures such as the improvement of irrigation canals for agriculture becomes the priority. In this connection, Japan is developing techniques for water use management correlated with planting pattern, and designing subsystems for irrigation and drainage which correspond to changes in demand for agricultural water. Alcohol fermentation from sugar beet, and methane fermentation from animal waste slurry, have also been conducted for efficient use of biomass energy.

Financing: No information available.

Cooperation: So far, there are two major activities Japan has taken as follow-ups for the World Food Summit's Plan of Action. One is providing support to the development of the food insecurity and vulnerability information and mapping system (FIVIMS) in Asia. The FIVIMS is a kind of computerized mapping system to provide policy makers with accurate and timely information on the incidence, nature and causes of chronic food insecurity. The other is sponsoring and supporting various activities under the FAO's TeleFood Campaign which mobilizes resources to fund small grass-roots development projects aimed at helping people free themselves from hunger by raising awareness of the scourge of hunger. Cold NE wind originating from the Sea of Okhotsk high pressure predominates over northeast Asian region during summer and is sometimes harmful to crop production. Automatic Weather System (AWS) monitoring units, prepared in Tohoku (northeast) region in Japan and the east coast of the Korean peninsula have succeeded in evaluating crop production by cold damage. This programme is a joint research between Japan and Republic of Korea supported by the Ministry of Education, Culture, Sports, Science and Technology of Japan.

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CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

Decision-Making: The Ministry of the Environment, several other ministries and agencies are primarily responsible for biodiversity and genetic resources. Among them is the Inter-Agency Coordinating Committee on the Convention on Biological Diversity which was established in January 1994 under the chairmanship of the Director-General of the Nature Conservation Bureau of the Ministry of the Environment. The Ministry of Agriculture, Forestry and Fisheries (MAFF) assists in the conservation of genetic resources in order to conserve biological diversity. Its major fields of work include conservation and use of animal genetic resources in the Asia and Pacific region; international programmes and conference for plant genetic resources; and development assistance on genetic resources preservation in developing countries (1993-1995) which has been strengthened to the collaborative research project on genetic resources in developing countries (1996). Japan adopted the National Strategy on Biological Diversity in 1995 by a decision of the Council of Ministers for Global Environment Conservation. Japan has a Basic Policy for the Conservation of the Natural Environment which is intended to systematically conserve diversified nature; manage natural areas appropriately; apply environmental impact assessment; strengthen research and survey programmes; enhance public awareness; and coordinate outdoor recreation policies. In addition, National Guidelines for the Conservation of Endangered Species have been adopted, both to protect and conserve endangered species and to carry out breeding programmes. Local communities have been an essential element to the success of the conservation of biological and genetic resources. Among other activities, they have organized public hearings in the process of designating protected areas in accordance with the Wildlife Protection and Hunting Law and the Law for Conservation of Endangered Species of Wild Fauna and Flora. Their views were collected for preparations of the National Agenda 21 and the Basic Environmental Plan. Local community participation in conservation activities is promoted through public awareness activities and financial and other support to local NGOs, including funding by the Japan Fund for Global Environment. According to the Public Opinion Survey of the Prime Minister's Office undertaken in 1991, 49% of people surveyed had experience in taking part in nature conservation activities such as cleaning up and tree planting.

Programmes and Projects: No information available.

Status: Biodiversity loss has been the result primarily of habitat destruction, over harvesting and the inappropriate introduction of animals. Both in situ and ex situ conservation activities are carried out. Examples of the former include designation of protected areas, protection forests, protected forests of National Forests and Natural Monuments, development of new legislation for conservation of endangered species, and strengthening the management of protected areas. Ex situ activities include R&D on artificial breeding of endangered species and their artificial propagation. Japan also works to enhance ecosystem functions through the restoration of endangered species habitats and damaged valuable plant communities and eradication of the Crown-of-Thorns Starfish for restoration of coral reef ecosystems.

Capacity-Building, Education, Training and Awareness-Raising: Capacity-building for the assessment, study and systematic observation and evaluation of national biodiversity has been done through the National Survey on the Natural Environment that has been carried out since 1973. Several training courses have been organized by the Ministry of the Environment. Training courses have also been organized by the Japan International Cooperation Agency at both regional and international levels.

Information: National Surveys on the Natural Environment as well as National Biodiversity Surveys are carried out approximately every five years.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: Regarding bilateral or multilateral initiatives, the government has been involved in the following projects, funded largely through ODA and the Global Environment Research Programme Budget: Japan-US Joint Project for Conservation of Biodiversity in Indonesia; The Ministry of the Environment's Support for Development of the Asian Red Data Book in cooperation with Bird Life International; The Ministry of the Environment's Cooperative Projects for Conservation of Biodiversity, Wetlands, Migratory Birds, Natural Heritage and Coral Reef; Bilateral Treaties for Conservation of Migratory Birds with the USA, Australia, China and Russia; Research Cooperation Projects on Conservation and Sustainable Use of Biological Diversity carried out by the Ministry of Economy, Trade and Industry (METI). Japan has several times hosted the annual meeting of the International Whaling Commission, for last fifty years and will host the meeting in 2002. Japan is also conducting comprehensive research whales and ecosystem in the Antarctic Ocean and the North Pacific Ocean. Through a bilateral project between Japan and China, China has contributed significantly to research and development of artificial breeding of an endangered bird species (Japanese Crested Ibis), since only China has natural habitats for this species. Japan signed and ratified the Convention on Biological

Diversity in 1993. It ratified The Convention on International Trade in Endangered Species of Wild Fauna and Flora, 23 August, 1980 and submitted the latest report in 1994. Japan has also joined the Ramsar Convention and the Convention for the Protection of the World Cultural and Natural Heritage, both of which are related to the conservation of biological diversity. Japan is also cooperating in the Man and the Biosphere Programme, of UNESCO, which is conducted as an intergovernmental project. Existing legislation, including the Law for the Conservation of Endangered Species of Wild Fauna and Flora, the Wildlife Protection and Hunting Law, the Aquatic Resources Protection Law, and the Law for the Protection of Cultural Property, covers the obligations of the Convention on Biological Diversity, and there is therefore no need to have new legislation.

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CHAPTERS 16 AND 34: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY AND TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

Decision-Making:

Technologies: The spread of environmentally sound technology is considered to be essential for achieving sustainable development, particularly in developing countries. In Japan, the Basic Environment Law indicate that state shall promote science and technology with regard to environmental conservation (Article 30). In accordance with the law, the Basic Environment Plan identifies concrete measures.

Biotechnologies: Among the official Japanese bodies established to deal with legal and policy issues related to environmentally sound management of biotechnology are: the Ministry of Education, Culture, Sports, Science and Technology; the Ministry of the Environment (MOE); the Ministry of Health, Labour and Welfare; the Ministry of Agriculture, Forestry, and Fisheries (MAFF); and the Ministry of Economy, Trade and Industry (METI). Main institutions involved in biotechnology research and development include the Institute of Physical and Chemical Research; the National Institute for Environmental Studies (NIES); the National Institute of Agrobiological Resources (NIAR); the Society for Techno-Innovation of Agriculture, Forestry and Fisheries (STAFF); the National Institute of Bioscience and Human-Technology; and the Public Works Research Institute. A number of guidelines have been adopted for the safe handling of biotechnology. These include Guidelines for: (1) Recombinant DNA Experiments (STA, MOE); (2) Manufacturing Drugs by Application of Recombinant DNA Technology (MHW); (3) the Application of Recombinant DNA Organisms in Agriculture, Forestry, Fisheries, the Food Industry and Other Related Industries (MAFF); and (4) Industrial Application of Recombinant DNA Technology (METI).

Business and research sectors are the dominant actors in the biotechnology industry. In addition, institutes and industries hold public meetings and issue press releases to inform the public of field tests and general releases of cultivation.

Programmes and Projects:

Technologies: No information available.

Biotechnologies: No information available.

Status:

Technologies: No information available.

Biotechnologies: In order to increase the availability of food, feed and renewable raw material, Japan has been applying biotechnology in the following areas: In the area of crops, Japan is working to increase productivity by developing varieties which are highly productive or resistant to disease and pest, as well as to develop crops that are resistant to salinity, cold and drought. The nutritional composition of crops is also being improved; For livestock, Japan is working to improve quality through breed improvement and the practical application of breeding technology; For forest products, it is trying to improve various kinds of resistance by applying breeding technology to trees and non-wood forest products such as mushrooms; For aquatic products, Japan is working to enhance the productivity of superior seeds and seedlings by means of breeding technology; and, For microorganisms, it is promoting the production of vaccines for human beings and livestock and materials like enzymes which are useful for the production of food. Biotechnology is also used as an effective means of developing medical products, involving the clarification of the mechanisms of diseases, research and mass production of physiological activating substances, and development of various biotechnology-derived pharmaceuticals. Finally, in the field of the environment, biotechnology is used in technology to reduce environmental pollutants which come from various sources, technology for cleaning up and removal of pollutants in the environment (environmental purification technology), technology for measuring and assessing conditions of environmental pollution (environmental measurement technology), and technology for products and manufacturing which do not cause pollution or which impose less environmental load (environmentally sound technologies). Biotechnology is being widely used in such areas of wastewater treatment, and there are new wastewater treatment systems in operation which make use of bioreactors of enzymes and microorganisms.

Capacity-Building, Education, Training and Awareness-Raising:

Technologies: In addition to accepting trainees in environmental fields from developing countries, as well as dispatching experts to these countries, Japan has been active in the enhancement of public awareness for the development of environment-related technology, and has improved systems for the development of environment-related technology. However, problems such as lack of information networks, innovative mechanisms to finance the transfer and application of environmentally sound technologies, experiences of innovative technology transfer mechanisms, technical expertise, as well as inadequate telecommunication infrastructure still exist.

Biotechnologies: No information available.

Information:

Technologies: Among the organs which assess available sources of information and support inventories of

environmentally sound technologies are the UNEP International Environmental Technology Center, established in Japan in October 1992, the Global Environment Center Foundation, the International Lake Environment Committee Foundation and International Center for Environmental Transfer of Technology. Local governments also play an important role in technology transfer, particularly in the area of pollution control technologies. The establishment of KITA (Kitakyushu International Techno-Cooperative Association) Environmental Cooperation Center is a significant example of a local initiative.

Biotechnologies: No information available.

Research and Technologies:

Technologies: In the field of telecommunications, Japan has established co-operative research on remote sensing with KMITL (King Mongkut Institute of Technology Ladkrabang), Thailand.

Biotechnologies: No information available.

Financing:

Technologies: No information available.

Biotechnologies: The following financial resources were allocated to universities, technical schools and local research institutions to enhance biotechnology research and development: In national universities, in 1993, the Ministry of Education, Culture, Sports, Science and Technology spent 57 million dollars for research of biotechnology; and, In the agricultural field, in 1995, prefectural research institutes spent 5 billion yen for research and development of biotechnology in agriculture, forestry, fisheries and the food industry, and they employed some 800 researchers working on biotechnology.

Cooperation:

Technologies: With regard to international transfer of ESTs, Japan promotes international cooperation based on “Initiatives for Sustainable Development toward the 21st Century (ISD)” as well as “Global Remedy for the Environment and Energy Use Initiatives (GREEN Initiatives)”, which were presented to the Special Session of the United Nations General Assembly held in June 1997. The ISD presents our basic philosophy on environmental cooperation, and GREEN Initiatives shows action programme aiming to support countermeasures to climate change issue among developing countries. With respect to bilateral or multilateral initiatives, Japan has been assisting environmental research and training centers in Thailand, China, Indonesia, Chile and Mexico to help decrease environmental pollution and strengthen the capacity of developing countries for pollution control. In addition, “Green Aid Plan” projects between Japan and developing countries such as Thailand, China, Indonesia, Malaysia, Philippines, India and Vietnam have been jointly implemented in the area of human resource development, research cooperation, survey, and demonstration of technologies such as desulfurization technology. The private sector including research institutes (e.g. International Center for Environmental Technology Transfer) collaborate with the government to promote transfer of technology, administrative policy and Japanese accumulated experience concerning the pollution control through measures such as dispatch of experts and acceptance of trainees.

Biotechnologies: Japan is actively taking part in the discussions on biotechnology in the OECD, FAO, UNEP and the Convention on Biological Diversity. Among its bilateral initiatives in this sector are the following programmes: Conservation and Use of Animal Genetic Resources in Asia and the Pacific Region; international programmes and conferences for plant genetic resources, and development assistance on genetic resources preservation in developing countries, which has been strengthened to the collaborative research project on genetic resources in developing countries.

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CHAPTER 17: PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

Decision-Making: Decision-making for issues related to integrated coastal zone management and sustainable development, including environmental impacts of activities affecting the coastal and marine areas, is the responsibility of the following organizations: the Ministry of the Environment, the Ministry of Education, Culture, Sports, Science and Technology, the Ministry of Agriculture, Forestry and Fisheries and the Ministry of Land, Infrastructure and Transport. Legislation, regulations, and other standards or guidelines that have been developed in the following areas: Integrated coastal zone management and sustainable development, including environmental impacts of activities affecting the coastal and marine areas; Marine environmental protection, both from land-based activities and from sea-based activities; Sustainable use and conservation of marine living resources. Japan has adopted a number of policies and plans that relate to the various issues of relevance to oceans and seas. Examples include the following: Basic National Strategy on Biological Diversity; Long-term Coast Protection Policy of Japan; Seven-year Programme for Coastal Protection and Management; Coastal Environmental Programme and Coastal Protection Programme under the Seacoast Law. Furthermore, 'The Basic Law on the Fisheries Policy' was legislated for establishing the basic policy on the Fisheries, with the object of sustainable utilization for fisheries resources and this law stipulates the principle of management of the fisheries industry in accordance with sustainable utilization for fisheries resources. The councils have been established as an advisory body for the ministers concerned, and they are composed of members who have various backgrounds and experiences, including scholars, businessmen and officials of quasi-government organizations. The councils conduct surveys to obtain public opinions, when necessary. The Central Environment Council and the like are established for environmental conservation. The Council for Ocean Development was established for survey and deliberation of basic and comprehensive matters concerning marine development.

Programmes and Projects: Among the major projects and activities underway or planned include: Research and development on environmental restoration/mitigation technology such as artificial seaweed beds and artificial tidal flats; Development of a regional master plan based on a basic concept to promote maintenance and restoration of fishing ground and marine environment with due consideration on marine ecosystem; Water pollution control project to conserve and improve coastal waters by removing contaminated sludge; Coastal environmental project to restore beautiful coastal landscape with white sand and forest; Eco-coast project to conserve coastal ecosystem of littoral fauna and flora and to protect shorelines.

Status: As one of the developed marine states, Japan has contributed much to the conservation of the seashore areas, marine environment, marine living resources, and improvements of sewage systems. The major current uses of the coastal areas are for major population centers, fishing, leisure, and industrial zone including location of electric power plants, reclamation site. The price of total catch by Japanese fishing vessels (coastal and in high seas) comes to about 2.2 trillion yen (0.5% of GNP, 0.43% of GDP). There is a tendency that the catching effort becomes superfluous compared with the estimated allowable catch amount of marine living resources. The control over catching effort has been implemented in accordance with related laws and regulations, such as a licensing system and restriction on fishing-gear and fishing method. Furthermore, restriction on the amount of catches has been introduced for the primary fishery resources by employing TAC system. When newly introducing a Total Allowable Catch (TAC) system in 1997 based on the Law concerning Conservation and Management of Marine Living Resources, the following potential problems were raised: Enhancement of a research organization which undertakes research activities needed in the determination of TAC; Distribution method of TAC, especially among the fishermen using different fishing methods; Construction of a system for obtaining quick and exact catch information; and, Anxiety of occurrence of fish abandonment and its prevention.

Capacity-Building, Education, Training and Awareness-Raising: The meetings, fora, etc., are organized to raise awareness among public officers concerned and persons engaged in fishery industry about sustainable use and the conservation of marine living resources. Moreover, activity to disseminate knowledge by the government, the fisheries organizations, etc. is widely performed for the general public. Every year, the month of June is observed as the "Seto Inland Sea Environmental Conservation Month" to disseminate knowledge and raise awareness about environmental issues of the Seto Inland Sea. An environmentally-friendly programme around the coastal zone is performed with public participation to enhance understanding of the importance of seacoast as natural heritage. A director-level meeting of national and local governments is held every year to discuss policies and to exchange information on oceans and seas.

Information: The Ministry of the Environment has information on the distributions of tidal flats, seaweed beds and coral reefs, and present state of natural environment along coast lines (Biodiversity Center of Japan, Nature Conservation Bureau); dissolved oxygen and nutrient salts in the ocean (Environment Department); and the salinity and chlorophyll in the ocean (Center for Global Environmental Research, National Institute for

Environmental Studies); Ministry of Education, Culture, Sports, Science and Technology has data on: CTD (conductivity, temperature and depth) data (Faculty of Fisheries, Hokkaido University); Atmosphere during cruises, data of CTD and the dissolved oxygen (Ocean Research Institute, the University of Tokyo); sea waves (Tokyo University of Mercantile Marine); sea waves and data of the speed and direction of the wind (Disaster Prevention Research Institute, Kyoto University); the plankton density and species (Faculty of Applied Biological Science, Hiroshima University); Current (Research Institute for Applied Mechanics, Kyushu University); and Temperature and current (Faculty of Fisheries, Kagoshima University); The Japan Oceanographic Data Center (JODC), Japanese Maritime Safety Agency, collects oceanographic observation data from many national institutions to manage them; The Japan Meteorological Agency owns oceanographic observation data and background marine pollution observation data by research vessels, and collects marine meteorological data from many merchant ships by the Marine Meteorological Logbook to manage them; The National Space Development Agency of Japan (NASDA) has been developing the satellite observing technology and obtained data of the land uses, the land geology, the sea surface temperature and chlorophyll concentration, the marine productivity and the others (the population, etc.); The Japan Marine Science and Technology Center (JAMSTEC) observes temperature, current and other data with research vessels and buoys including ARGO floats and TRITON buoys, and disseminates the data on the internet.

Research and Technologies: government research institutes, universities and the business sector carry out Research and development of environmentally-sound technology. The followings are some examples of the results of recent R&D activities. energy-saving and resources protection type fishing gear and method; turbine engine with low-NOx emission; oil recovery systems practical in rough seas; and offshore floating wave power device

Financing: This sector (oceans and seas) is financed by the national budget, fiscal investment and loans through various government-affiliated financial institutions and the tax system.

Cooperation: Examples of relevant international agreements to which Japan is a Party, include the following: UN Convention on the Law of the Sea signed in 1983 and ratified in 1996; Protocol of 1978 Relating to the International Convention for the Prevention of Pollution from Ships, 1973; International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties; Protocol of 1992 to Amend the International Convention on Civil Liability for Oil Pollution Damage, 1969; Protocol of 1992 to Amend the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971. Examples of other related agreements, particularly regional or bilateral and sea-specific agreements, to which Japan is a Party, include: Agreement of the Commission for General Fisheries Council for the Mediterranean; Agreement for Establishment of the Asia-Pacific Fishery Commission; Agreement Establishing the Southeast Asian Fisheries Development Centre; Agreement between the Government of Japan and the Government of the Russian Federation Concerning; Mutual Relations in the Field of Fisheries off Their Coasts.

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CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

Decision-Making: The governmental bodies in charge of these areas are: the Ministry of the Environment, which is responsible for coordination for water quality conservation, including groundwater; Ministry of Land, Infrastructure and Transport, which is responsible for coordination for water resources development, management of water and other properties within the boundaries of rivers, and coordination of water usage if there is a severe drought. At the sub national level, prefectural or city government has the responsibility for coordination of resource management and development at the local level. The Ministry of Land, Infrastructure and Transport has branch offices to implement its task at the river basin level. There is no general law which covers all aspects of water resource management and development. However, there are some laws for specific aspects as follows: The Water Pollution Control Law -for water quality (updated as of 1996); The River Act -management of water and other properties within the boundaries of rivers, and coordination of water usage in a severe drought (Updated as of 1997); The Water Resources Development Law -for newly developed water resources (Updated as of 1983) The law in place for use in agriculture is the Land Improvement Law (Update as of 2001); For use by industry are the Industrial Water Law (Updated as of 1993) and the Industrial Water Supply Business Law (Updated as of 1993); and for use by households is the Waterworks Law (Updated as of 1996). For the management of water quality for agriculture and rural areas, Japan enforces regulations on agricultural chemicals in accordance with the Agricultural Chemicals Regulation Law.

In order to prevent pollution of freshwater supplies, the Government is enforcing strict regulation of effluent from industries and public sectors according to their types and sizes and promoting the construction of sewage treatment facilities for household waste water. In addition, plans for the conservation of lake water quality for selected lakes have been established including such measures as dredging contaminated sediment. The National Integrated Water Resources Plan (Water Plan 2000) has been formulated as a guideline for development, conservation and usage of water resources, and is to be revised soon. There are a number of mechanisms to provide for participation of all major stakeholders in the decision-making process. These include: Under the Environmental Impact Assessment Law, parties concerned may submit their opinions to the specific water resource development such as dam construction; Under the River Act amended in June 1997, opinion of local government and the regional people is reflected in River Management Plan; Irrigation projects can be implemented under the conditions that :1)they are requested by representatives of farmers, 2)they are agreed on by most of participating farmers, and 3)project planning goes through public notification process required by the Land Improvement Law, in which=not only people concerned about the project but also local residents can have opportunities to comment. 4)the bodies which implement irrigation projects have to take into consideration the balance between the environment and development with regard to the project planning. Conflict resolution is managed through various mechanisms. Water utilization is adjusted within Land Improvement Districts among farmers and through Conference of Drought among sectors and according to the River Act and Specified-Multipurpose Dam Act. Under the Forest Law, municipalities in upstream areas can request those in the downstream areas to conclude an agreement to enhance and conserve headwater forests collaboratively. The law also provides municipalities for seeking Minister of Agriculture, Forestry and Fisheries initiative to mediate between related municipalities in concluding such agreements.

Programmes and Projects: Land Improvement Projects are implemented based on the policy that agricultural land and water should be managed together.

Status: The precipitation in Japan greatly differs from year to year, season to season, and region to region, with floods and water shortages occurring in many areas. It is expected that the demand for water will continue to increase. At the same time, the time needed for construction of dams and other water resource infrastructure tends to be prolonged, and there are problems of over-pumping of ground water. Conserving the quality of drinking water is also a growing challenge. Land improvement districts manage irrigation based on the principle of participatory irrigation management to ensure efficiency and equity in allocating water. Efficient use of river waters is facilitated by the river system administrator of the Ministry of Land, Infrastructure and Transport whose permission must be obtained for using river water. Industry is not a main user of freshwater. Its consumption accounts for about 16.5% (FY1994) of total usage of fresh water, but it is one of the major sources of organic pollution. With regard to the involvement of the private sector in water management it should be noted that for agricultural use, water allocation and recovery of cost have been managed by Land Improvement Districts composed of farmers in the respective areas. The role of the Government is therefore very limited On the other hand, for industrial use, the majority of industrial water is supplied by local government, as is 99.5% of the drinking water supply. The rest is supplied by the union composed of residents in each area. In Japan, 53 million m3 waste water can be treated in a day. Sixty-two percent of sewerage was treated in Japan in FY 1996. The targets established for coverage of water supply and sanitation is 99% in the 21st century and, for sanitation coverage, 80% in FY 2002. The major constraint faced in the area of water resources development in Japan has to do with the increasing difficulty in finding suitable areas for dam construction. With regard to the household

water supply, technical and financial problems for the small water supplier need to be resolved to cope with increased demand for safe drinking water supply.

Capacity-Building, Education, Training and Awareness-Raising: Examples of programmes and campaigns for educating the public about issues of water conservation include: National Water Day (Aug.1st), National Water Week; selected 100 exquisite waters; the annual Forum on the Water Environment; Monthly event such as “River conservation Month” (July), “Seashore conservation Month” (July) and “Ten- days for Forest and Lake” (last ten days of July).

Information: The Ministry of the Environment collects and publishes the data on water quality, the Ministry of Land, Infrastructure and Transport collects and publishes the data on the state of water resource development and the Ministry of Land, Infrastructure and Transport collects various data such as precipitation, water level, water quality and water amount in dams, and sends them promptly to local government and other related organizations. The Ministry of Agriculture, Forestry and Fishery collects the information on the amount of water supplied from big dams for agricultural use. The Ministry of Health, Labour and Welfare collects the data on the drinking water supply directly or through prefectures. Municipalities manage information on their own waterworks such as water demand/supply, monitoring and management of water quality, and cost. The Ministry of Economy, Trade and Industry collects data on the state of water supply for industrial use. The Ministry of the Environment distributes the data it collects through the “Report of Water Quality in Public Water Area”. The Ministry of Land, Infrastructure and Transport distribute its data through “Water Resources in Japan”. The Ministry of Land, Infrastructure and Transport sends data such as precipitation and water level through Foundation of River and Basin Integrated Communications, Japan (FRICS). The Japan Industrial Water Association distributes water data through its newsletter. The Ministry of Agriculture, Forestry and Fisheries analyzes data on almost all dams for agricultural use such as real time reservoir capacities. The information is available electronically, but the data format is not standardized

Research and Technologies: The technological needs for waste water treatment include the establishment of advanced sewage treatment technology including denitrification and dephosphorization and of low-cost and multi-purpose waste water treatment technology for small enterprises. For water purification, the needs include the establishment of advanced water treatment technology to cope with recent water pollution problems including cryptosporidium and trihalomethanes.

Financing: The estimated cost for achieving universal coverage of water supply for household use is 1900 billion yen per year; for sanitation, it is 23.8 trillion yen to increase the coverage of the sewage treatment plant from 54% to 66%. All costs for water resource management and development are covered domestically. All water users in Japan shall pay for the appropriate cost depending upon the volume, or area irrigated in the case of agricultural use, and the type of water provided. Some municipal waterworks bodies have a discount water rate for the poor.

Cooperation: Japan provides assistance to developing countries to improve the water supply and sanitation systems.

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CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS

Decision-Making: Air Pollution Control Law and Water Pollution Control Law control the discharge of chemicals into the environment. In May 1996, Japan amended the Air Pollution Control Law for the purpose of preventing human health damage caused by long-term exposure to hazardous air pollutants. The Agricultural Chemicals Regulation Law prohibits the sale of unregistered agricultural chemicals. Standards have also been developed for the registration of agricultural chemicals with respect to their residue in crops and water pollution. Toxic chemicals are controlled in Japan in accordance with such laws as the Law concerning the Examination and Regulation of Manufacture, etc. of Chemical Substances (Chemical Substances Control Law), the Poisonous and Deleterious Substances Control Law and Industrial Safety and Health Law. Under these Laws, Japan conducts evaluation of safety-related properties, including the potential for biodegradability, bioaccumulation, and the toxicity of chemicals. Based on its findings, Japan establishes regulations and basic management procedures for manufacture, import and use of such chemicals. Also Japan supports worldwide harmonization in the classification and labeling of dangerous and toxic chemicals. Local authorities and business groups are involved in the decision-making and implementation of activities in this area. Japanese industries started voluntary emission control measures of some hazardous air pollutants with a pledge and review system. The Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management (PRTR Law) has been promulgated in July 1999. Under the Law, the MSDS and PRTR started in 2001.

Programmes and Projects: The Japan Chemical Industries Association has implemented the pollutants release survey through "responsible Care" since 1992. Japan has carried out the PRTR Pilot Project in local areas since 1997. The Comprehensive Chemical Assessment and management Programme has started in 2001 to develop risk assessment methods and assess the risks of the chemicals of High Production Volume.

Status: Government of Japan has worked for promoting business's self-management activities to control the use of industrial chemicals. For example, the Ministry of Economy, Trade and Industry and Ministry of the Environment has cooperatively requested industries to make voluntary control plan to reduce emission of thirteen air pollutants in 1996. As the result of implementing the first-stage voluntary control self-management plan from FY1997-1999, seventy-seven industries associations reported that they reduced air pollutant emission by about 40%. The industries have started the second-stage voluntary control plan from FY2001.

Capacity-Building, Education, Training and Awareness-Raising: The Government has published and distributed the manual for businesses to estimate the quantities of designated chemical substances released to the environment under the PRTR Law. The Government has been also developing a guidance document of risk communication for businesses and a guidebook for citizens to understand the PRTR. Efforts have been made for the public to better improve this understanding on chemical safety and management, including the PRTR Law.

Information: Japan conducts systematic environmental surveys and monitoring to measure the state of chemical residue in the environment, and acts accordingly. The Government collects and publishes the data on water quality, air quality and the discharge of chemicals from facilities into water. The Government has established database for information of chemical substances and makes it available to the public. Several activities about endocrine disrupting chemicals such as development of screening test methods and risk assessment have been promoted in collaboration with relevant ministries. The Ministry of the Environment has announced the "Strategic Programs on Environment Endocrine Disruptors'98" (SPEED'98) (Established in 1998 and revised in the year 2000).

Research and Technologies: To assess the effects of endocrine disrupter, the Government has been developing the specific testing method with cooperation of OECD countries. The Government has undertaken the research to develop new hazard assessment methods by using Toxicogenomics and QSAR(quantitative structure-activity relationship) system.

Financing: The Government provides funds for R & D and the other necessary expenditures to implement the above-mentioned topics and also secures funds to manage related national research institutions by its budget.

Cooperation: Japan participates in related programmes of the OECD, in the International Programme on Chemical Safety (IPCS) of UNEP, ILO, WHO and FAO, and in the International Register of Potentially Toxic Chemicals (IRPTC). It supports the London Guidelines for the Exchange of Information on Chemicals in International Trade as well as the extension of the Guidelines to require the prior informed consent (PIC) procedure. In conformity with the London Guidelines, Japan has amended the Export Trade Control Order to establish a system for management of exports of toxic chemicals, which are prohibited or strictly restricted in

Japan or internationally. As a part of OECD activities, Japan has been participating in the co-operative investigation of high production volume (HPV) chemicals programme since 1991. The Government provides technical cooperation to establish testing organizations on chemical safety in Least Developed Countries (LDCs) by the Official Development Assistance(ODA).

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CHAPTERS 20 TO 22: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS, SOLID AND RADIOACTIVE WASTES

Decision-Making:

Hazardous wastes: Japan signed and ratified The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal in 1993. The latest information was provided to the Basel Convention Secretariat in 1994. Japan strictly enforces the Basel Convention by means of proper implementation of the relevant domestic laws and regulations including, in particular, the Law on the Control of Export, Import and Management of Specified Hazardous Wastes and Other Wastes which has specifically been enacted for the purpose of implementing the Basel Convention. A penalty regime has been established against illegal transactions of wastes. The Waste Disposal and Public Cleansing Law, which is Japan's general law for the management of waste, was broadly amended in October 1991 as the basis for ensuring proper disposal and reduction of waste, as well as the construction of disposal facilities. In July 1992, these amendments were put into effect. In May 1992, Japan established the Law Regarding the Promotion of the Construction of Specified Facilities for the Disposal of Industrial Waste to give due consideration to the importance of maintaining waste disposal facilities for environmentally sound management of hazardous wastes. To promote the spread of waste disposal facilities, Japan is adopting measures concerning taxation and finances. Japan promotes the prevention and minimization of hazardous waste by continuing to provide technological and financial assistance to prefectural governments which enforce the Waste Disposal and Public Cleansing Law, and by strengthening institutional capacities in hazardous waste management. Local authorities represented by prefectural governors and mayors of cities, towns and villages have been given the power to instruct businesses, which generate a large amount of wastes, to draw up plans for waste reduction. In accordance with the October 1991 amendments of the Waste Disposal and Public Cleansing Law, each of the individual prefectures has the power to designate a waste treatment public center for disposing of specially controlled wastes.

Solid wastes: In 1991 a Council for the Promotion of Recycling was established to bring together industrial and consumer organizations in this field. The disposal of waste is conducted in accordance with the Waste Disposal and Public Cleansing Law. In September 1992, in order to promote the reduction of waste, a National Conference for the Promotion of the Reduction in the Amount of Garbage was established. Also relevant are the October 1991, Law for Promotion of Utilization of Recyclable Resources, the Law on Temporary Measures to Promote Business Activities for the Rational Use of Energy and the Utilization of Recycling Resources, and the amended 1991 Waste Management Law. The 1990 Guidelines that were developed from the report of the Subcommittee for Industrial Structure on measures to address waste disposal and recycling of resources are applied and reviewed on an annual basis. In 1995, "the Law for the Promotion of Sorted Collection, and Recycling of Containers and Packaging" was established to encourage the establishment of new recycling and packaging systems under the each responsibility of consumers, local governments and producers. With the wide-ranging amendments of the Waste Disposal and Public Cleansing Law in 1992, the basic policy is to promote the planned disposal of wastes, and Japan is enforcing measures to reduce wastes, including the promotion of appropriate packaging for goods, packaging reuse, composting and the segregation and separate collection of recyclable waste. In order to construct a socio-economic system with reduced environmental load, Japan is reducing waste amounts by promoting the recycling of resources as well as limiting the generation of wastes.

According to a waste collection plan, in 1993 the percentage of the total population which receives collection service for general waste had reached 100%. However, when looking at the conditions of disposal, the amount accounted for by direct reclamation was equal to 14.4% of the total amount of waste generated. The amount of household disposal by household was equal to 2.0% of the total. At present, the population ratio of domestic waste water treatment is 51.6%. Improvement of sewerage is slow in small and medium-sized municipalities. In accordance with the Five-Year Plan for the 8th Stage of Waste Treatment Facilities Improvement started in 1990, local authorities have decided to reduce the disposal amount of garbage to 91% of the present amount, by means of incineration, segregation, and composting. In 2000, Food Recycle Law was established to restrain generation of food wastes, reduce the amount of food wastes, and recycle them as animal feed or manure.

Radioactive wastes: Legislation concerning the safe management of radioactive wastes includes the Law for the Regulation of Nuclear Source Material, Nuclear Fuel Material and Reactors, and the Law concerning Prevention from Radiation Hazards due to Radio-Isotopes, etc. Regarding measures for the treatment and disposal of radioactive wastes, Japan abides by such international arrangements as Convention on the Prevention of Marine Pollution from Dumping of Wastes and other Matter. Japan will continue to cooperate with the International Atomic Energy Agency (IAEA). Japan considers that, in addition to promoting the reduction of radioactive wastes, it is necessary to take measures for their appropriate treatment and disposal. In this regard, and based on the Long-Term Program for Research Development and Utilization of Nuclear Energy, Japan promotes various measures including those for ensuring financial resources, promoting research and development, and strengthening international cooperation. Japan is also in favor of an early completion of the Convention on the Safety of Radioactive Waste Management (tentative name).

Programmes and Projects:*Hazardous wastes:* No information available.*Solid wastes:* No information available.*Radioactive wastes:* No information available.**Status:***Hazardous wastes:* No information available.*Solid wastes:* No information available.*Radioactive wastes:* No information available.**Capacity-Building, Education, Training and Awareness-Raising:***Hazardous wastes:* No information available.

Solid wastes: Japan conducts reduction of waste and recycling activities with the cooperation of local authorities, citizens and corporations. Japan promotes public awareness of appropriate waste disposal, environmental education and assists voluntary activities among the private sector, through the national government and local authorities, to encourage companies to develop waste reduction and reuse policies. In 1991, with a view to enhancing public awareness, ministries and government agencies declared October of each year as the month for the promotion of recycling. In addition to promoting the improvement of sewerage, Japan will also promote the improvement of community plants and Gappei-shori johkasou (domestic waste water treatment system) in towns and villages.

Radioactive wastes: No information available.**Information:***Hazardous wastes:* No information available.*Solid wastes:* No information available.*Radioactive wastes:* No information available.**Research and Technologies:***Hazardous wastes:* No information available.*Solid wastes:* No information available.*Radioactive wastes:* No information available.**Financing:***Hazardous wastes:* No information available.

Solid wastes: As an incentive to recycle, Japan has adopted measures for special tax redemptions in regards to facilities for recycling waste, as well as financial measures for low-interest financing through governmental financial agencies.

Radioactive wastes: No information available.**Cooperation:**

Hazardous wastes: Japan promotes close international cooperation and works with the Secretariat of the Basel Convention, UNEP, and the Regional Economic Commissions. In addition, Japan is promoting and strengthening international cooperation in the management of transboundary movements of hazardous wastes.

Solid wastes: Japan promotes international cooperation in solid waste and sanitation*Radioactive wastes:* No information available.

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CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS

Women: Decision-making: The Basic Plan for Gender Equality, which is set out on the basis of the Basic Law for a Gender-equal society, includes actions to “expand women's participation in policy decision-making processes” as one of the important objectives. And the Government is now implementing various measures based on the above Plan. Furthermore, the Government shall endeavor assiduously to achieve as early as possible before the end of FY2005, the international goal of 30% set out in the Nairobi Forward-looking Strategies for the Advancement of Women. The percentage of women on National Advisory Councils and Committees is 24.7% in September 2001, and are showing a tendency to increase every year. Capacity-Building, Education, Training and Awareness-Raising: Curricular and educational material already promote gender relevant knowledge. Policies and strategies are being drawn up for achievement of equality in all aspects of society. Mechanisms are in place to assess implementation and impact of development and environment policies and programmes on women. Environmental education is provided for the general public, environmental learning, the Eco-Mark system as regards environmentally friendly products with an active and joint participation of men and women, while utilizing the knowledge and experience of women; Public relations and public awareness activities are undertaken to review institutions, customs and practices in all fields of society; Dissemination of accurate knowledge about gender issues among people, beginning from their adolescence, and the preparation of the system of fine-tuned consultation and guidance in every stage of a woman's life is promoted. Cooperation: International cooperation by women, as well as international cooperation to assist women's participation, include in the field of environmental conservation;

Children and youth: Status: The goal set in Agenda 21 of ensuring that by year 2000 more than 50% of youth -- gender balanced -- have access to appropriate secondary education or vocational training has been reached. Japan will further improve environmental education in schools, homes and regions, and environmental education through direct contact with nature; The Government is making an effort to provide children and youth with social education facilities, such as public halls with a variety of opportunities for courses and lectures; The Government will promote the development and dissemination of such programmes as environmental surveys and will try to provide assistance to projects for children and youth concerning environmental conservation.

Indigenous people: Cooperation: Japan has been contributing to the United Nations Voluntary Fund concerning Indigenous Populations in order to promote the protection of the human rights of indigenous people in the world and to conserve their living environment.

Non-governmental organizations: Decision-making: The Japan Council for Sustainable Development was established in 1996 to facilitate mutual dialogue between the government, the business sector, and NGOs. An ad hoc mechanism already exists to: Allow NGOs to play their partnership role responsibly and effectively; Involve NGOs in decision-making and implementation and to review formal procedures and mechanisms; Promote and allow NGOs to participate in the conception, establishment and evaluation of official mechanisms to review Agenda 21 implementation. Due to the lack of financing, human resources and information, NGOs' activities are rather limited. In order to change the present situation, comprehensive assistance should be provided to NGOs. Information: In 1996, the Global Environment Information Centre was established jointly by the Ministry of the Environment and United Nations University. It aims to provide information and opportunity for exchange to private organizations and NGOs. Financing: In 1993, the Japan Fund for Global Environment was established, supported by contributions from the Government as well as the private sectors. Japan extends assistance through this fund to NGOs' activities for global environmental conservation in developing countries as well as in Japan. Cooperation: Japan attaches importance to providing assistance for activities in developing countries, through the Subsidy System for NGO projects, small-scale grants assistance, the Voluntary Deposit for International Aid System, and the NGOs International Construction Development Assistance Programme. In addition, based on regional environmental protection funds established by prefectural governments, Japan will continue to provide assistance for environmental conservation activities at the grass-roots level in different regions in Japan.

Local authorities: Decision-making: The Government supports Local Agenda 21 initiatives, and there are at least 28 Local Agenda 21s out of a total of 47 prefectures and 12 designated metropolitan cities involving about 73% of the population. The Government provides assistance to the local authorities for their own voluntary and independent environmental activities; for instance, for the establishment of Local Agenda 21s, and for international cooperation at the local authorities level. Local authorities are directly involved in the implementation of laws, regulations and guidelines, and in the observation, measurement and control of pollution, etc. regarding conservation of the environment. They also carry out various anti-pollution and nature conservation projects. Many local authorities play an important role in global environmental protection as well.

Workers and trade unions: Decision-making: Workers take some part in National Agenda 21 discussions and implementation, and Japanese trade unions have contributed to environmental conservation and recycling. Some trade unions have been involved in international cooperation activities, including participation in the

NGOs '92 Global Forum' held in conjunction with the Earth Summit. The Government promotes the active participation by workers and trade unions in decision-making regarding environment and development as well as through talks with trade union representatives and endeavors to improve the environmental education of workers. Trade unions have participated in advisory councils and worked with local authorities. In addition, they conduct activities in the workplace and regional communities for legislation, such as the Basic Environment Law, the promotion of waste reduction, recycling and tree-planting. Industrial federations of trade unions participate in environment-related industrial activities. Business unions are involved in observation of business and environment-related activities. Cooperation: The ILO Conventions No.87 and No.98 have been ratified.

Business and industry: Decision-making. There are governmental policies encouraging increased efficiency of resource use, including reuse, recycling, and reduction of waste per unit of economic output. Status: Business and industry deal not only with traditional types of industrial pollution concerning air and water, but also with a wide range of environmental problems, including those of global warming and waste. They play a major role in economic activities, and are expected to play a bigger role in regards to the construction of a sustainable socio-economic system with reduced environmental load. In addition to the measures adopted thus far, Japan also provides economic and institutional assistance to the private sector for the development of technology, facilities and equipment which contribute to the rationalized use of energy in manufacturing processes; promotes various measures in accordance with the Action Program to Arrest Global Warming, the Law concerning the Protection of the Ozone Layer, and the Automobile NOx Reduction Law; develops a system to stimulate the Project for Innovation and Development of Environment and Energy Technologies, which is based on The New Earth 21 Programme; promotes the transfer of technology which contributes to environmental conservation and the creation of a new framework by which recycling can permeate into the existing socio-economic system; participates actively in the creation of internationally harmonized standards of environmental audits; and promotes the development of methods for the objective assessment of the environmental burden imposed on business and industry by environmentally-friendly production processes and products.

Scientific and technological community: Decision-making: Japan supports the scientific and technological community domestically through its Council for Science and Technology Policy, chaired by the Prime Minister, and internationally, through the Association for Science Cooperation in Asia (ASCA). The scientific community has already established ways in which to address the general public and deal with sustainable development. The scientific and technological community plays a major role in the movement toward sustainable development. Of particular significance is its role in the development of environmentally-friendly technology and the establishment of information systems.

Farmers: Status: The role played by farmers is of great significance to sustainable agriculture, forestry and fisheries. Farmers created an independent Agricultural Cooperation, which decided at its 1991 Conference to promote environmentally-friendly agriculture. In this regard, it has undertaken a campaign to develop appropriate agricultural methods and to reduce the use of chemicals and fertilizers.

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CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Decision-Making: In fiscal 1998, the Government of Japan decided to establish and expand special tax measures relating to the automobile acquisition tax, with the creation of special taxation criteria for high fuel efficiency vehicles/low fuel consumption vehicles and special lower tax rates on low-emission vehicles. Japan recognizes that actions of the private sector are important, including funding, the transfer of technology, and development of human resources. In these areas, private businesses and NGOs play a major role. For this purpose, the Japan Fund for Global Environment, based on contributions from the national government and the private sector, was established to provide assistance for the activities of NGOs for global environmental conservation. In addition, at the Council of Ministers for Global Environment Conservation in June 1997, the government of Japan agreed to continue its efforts to encourage further environmental consideration in businesses expanding overseas, given increasing investment by the private sector in developing countries. Moreover, the Japan Federation of Economic Organizations (Keidanren) formulated the Keidanren Charter on the Global Environment in April 1991. The Keidanren Charter is a voluntary statement related to environment considerations that member companies should implement when they expand their businesses overseas.

Programmes and Projects: No information available.

Status: In September 1997, the government of Japan applied reduced interest rates to ODA loans for certain environmental projects dealing with pollution and global environmental problems. The interest rate was down to the most concessional terms internationally (0.75%) and had a repayment period of 40 years (including a ten-year grace period). In addition, Japan announced the Kyoto Initiative" at the 3rd Conference of the Parties to the UNFCCC held in Kyoto in December 1997, which expanded the areas of application of the most concessional terms. The following fields are among the main target areas to which these loans are applicable: Energy saving technologies; New and renewable energy sources; Forest conservation and afforestation; Measures against air pollution.

Capacity-Building, Education, Training and Awareness-Raising: The government is planning to have environmental guidelines for official export credit operations. As part of the measures concerning Japanese direct investment abroad, the Japanese government has laid down activities guidelines (10 guidelines in total), which the government expects Japanese firms abroad to observe. "Awareness and diligence in tackling environmental problems" is defined in these guidelines.

Information: Many financial measures for sustainable development are provided by various entities. Those entities provide related information to potential users through such means as official gazette, the mass media, info-shop, printed materials, as well as the Internet. For example, information on the Japan Fund for Global Environment for supporting NGOs' sustainable development activities is available at the following URL: <http://www.jec.or.jp/>. Since 1996, the Ministry of the Environment has carried out a survey on trends in environmental considerations related to overseas activities of Japanese private companies in Southeast Asia. The purpose of the survey is to provide information on which can encourage Japanese companies to undertake appropriate environmental measures.

Research and Technologies: No information available.

Cooperation: Japan expanded its bilateral and multilateral environment-related ODA to reach somewhere between 900 billion and one trillion yen in total over the five-year period beginning FY1992. The total amount of environment-related ODA totaled about 1.44 trillion yen during the five-year period from 1992 to 1996, more than 40% above the target amount. In addition, the "Funds for Development" Initiative was established, providing untied official financial cooperation to developing countries to the amount of approximately US\$120 billion over a five-year period. Japan contributed US\$415 million to the Global Environment Facility (GEF) in the four-year period from July 1994 to June 1998, which amounted to 20.5% of GEF capital. Japan has pledged to contribute 20.0% of total GEF capital over the four-year period from July 1998 to June 2002. Japan also contributed 2.6 billion SDR over a three-year period (1993-1996) to the International Development Association (IDA), which accounts for 20% of the total amount of the IDA's tenth replenishment. Japan highly values the roles played by UNEP, UNDP and UNU in particular, and provides financial support to these organizations. Japan has been contributing to debt relief through various measures. For example, over the past 21 years, Japan has provided grant aid, totaling approximately 340 billion yen (US\$3 billion), to 27 countries in order to reduce their bilateral ODA debts. Furthermore Japan intends to play a leading role in the international community's efforts to implement the Cologne Debt Initiative, which will provide" faster, broader, and deeper" debt relief as a substantial contribution to the solution of Heavily Indebted Poor Countries' (HIPC's) debt problems. Japan will appropriate resources to allow 100% reduction of its bilateral ODA credits to HIPC's and believes that this will promote the goals of poverty alleviation, sustainable development and good governance.

CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

Decision-Making: The Council for Science and Technology Policy, the Ministry of Education, Culture, Sports, Science and Technology and the Ministry of Economy, Trade and Industry are the institutions primarily responsible for Natural and Social Sciences and related legislation and policies. Both representatives of the science sector (Natural and Social Sciences) and some individual scientists are represented in the National Coordination Mechanism for Sustainable Development. The following national legislation has been established, reviewed and modified to meet the requirements for sustainable development as described in chapter 35 of Agenda 21: The Science and Technology Basic Law (15 November 1995); The Science and Technology Basic Plan (the first plan decided on 20 August 1990; the second plan decided on 30 March 2001); The Comprehensive Promotion Program for Global Environment Research, Monitoring and Technology Development (13 Sep. 1994).

The Science and Technology Basic Law was established in 1995. Its objectives are to achieve a higher standard of science and technology ("S&T"), to contribute to the development of the economy and society in Japan and to the improvement of the welfare of the nation, as well as to contribute to the progress of S&T in the world and the sustainable development of human society, through prescribing the basic policy requirements for the promotion of S&T and comprehensively and systematically promoting policies for the progress of S&T. The First Science and Technology Basic Plan was established in 1996 to promote S&T policies comprehensively, systematically, and positively from a new view point with the aim of S&T system reforms, and also to provide concrete science and technology promotion policies for five years from the 1996 fiscal year to the 2000 fiscal year. The Second Science and Technology Basic Plan was established in 2001 and went effect for a five-year period beginning 1 April 2001, which strategically focuses the government's R & D resources four key fields; life science, information technology, environmental science and technology, and Nan technology and material science.

Programmes and Projects: The most important post-Rio projects related to natural, social, and engineering sciences are: The New Sunshine Project, initiated by the Agency of Industrial Science and Technology in June 1992; Studies for the Production of a Fundamental Data set for Earth Science and Technology Researches, Global Research Network System initiated by the Ministry of Education, Culture, Sports, Science and Technology; Toward the Realization of Global Change Prediction (9 July, 1996); and, Special Collaboration Study with Developing Countries, Global Environmental Research Program initiated by the Ministry of the Environment.

Status: No information available.

Capacity-Building, Education, Training and Awareness-Raising: Japan also works to improve public awareness of policies related to sustainable development and to transfer scientific knowledge to developing countries.

Information: No information available.

Research and Technologies: The Government is also involved in the establishment of the Asia-Pacific Network for Global Change Research to provide necessary governmental support to the scientific process of reducing uncertainties related to global change; and activities related to various bilateral environment or science and technology agreements. (As of November 1996, there were four bilateral environmental cooperation agreements and seventeen bilateral science and technology agreements). Having experienced serious pollution in the past, Japan has actively promoted scientific research to address the problems of domestic pollution. It actively participates in worldwide research projects, including the International Geosphere-Biosphere Programme (IGBP), the World Climate Research Programme (WCRP) and the Human Dimensions of Global Environmental Change Programme (HDP), and the Technology Renaissance for Environment and Energy, as well as in such scientific assessment activities as those of the Intergovernmental Panel on Climate Change (IPCC). It also carries out related interdisciplinary research. Furthermore, Japan contributes to regional development, including the construction of a research network for the promotion of effective research in the Asia-Pacific region.

Promotion of observation and scientific research is beneficial to developing countries in their efforts to improve the prediction of climate change and to mitigate the impact of natural disasters. With this in mind, Japan is co-operating with various countries and international organizations in the following fields; i) ocean observation, including the North East Asia Region GOOS, the ARGO project, deployment of the TRITON buoys and Ocean Drilling, ii) terrestrial observation, including observations of the Asian monsoon jointly with meteorological communities in other countries; iii) observation of the environment from Space.

Financing: No information available.

Cooperation: Japan carries out long-term assessments of the state of the environment in a socio-economic

context, and assists efforts to improve the capacity-building in developing countries, through various means, including official development assistance.

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CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

Decision-Making: The new Basic Environment Plan was formulated by the Government in 2000 and remains the national strategy for Sustainable Development. The Plan outlines overall, long-term national policies (Sound Material Cycle, Harmonious Coexistence, Participation, International Activities) toward sustainable development. Under the Plan, the Government has been promoting Environmental Education and Learning, Providing Information, Educational Materials and Methods to encourage voluntary actions by individuals.

Programmes and Projects: The Ministry of the Environment prepares and provides various materials and programmes to help people understand the current state of the environment and to give them incentives to participate in environmental conservation in their daily lives. Furthermore, the Ministry provides various opportunities such as Junior Eco Club to help children voluntarily participate in environmental conservation activities for their communities. To promote activities for communication with nature, the Ministry also establishes networks among the many nature lovers and institution/organizations that offer a wide range of opportunities to communicate with nature, and provides information on their events ("Nature Loves Club"). The Ministry of Land, Infrastructure and Transport also provides opportunities to utilize rivers as play fields in cooperation with local communities. There are a number of programmes or campaigns geared toward raising the awareness of the public with regard to issues of sustainable consumption and production patterns. Some of these are: The Eco Mark Programme: Since 1989, and under the authority of the Ministry of the Environment, the Japan Environment Association has implemented the Eco Mark Programme to raise public awareness. The Eco Mark is a label which is given to products that play leading roles in reducing environmental burdens. As of 31 July, 1997, 2,045 products in 71 categories were permitted to use this Mark; The Green Purchasing Network: This network was established in February 1996. Its objectives include promoting the concept and the practice of green purchasing at all levels of government, and among companies and consumers; providing useful information about green purchasing in practice and venues for exchanges of experience and information among GPN members. It is intended to assist consumers, enterprises, the National Government, local governments, and other organizations to give more serious considerations on environment when purchasing goods and services (not just price, function, and quality) and to assign a higher priority to such goods and services as are helpful in reducing environmental burdens. As of the end of October 1997, 964 organizations had joined the GPN.

Status: In Japan, education at the primary and the second levels is compulsory and accessible to all. Furthermore, various services and programmes are offered free of charge by the administration. School curricula on environmental education have been prepared for every level of schooling. Environmental education will be further promoted through the drafting and distribution of teaching materials and holding of education symposia and conferences aimed at improving the teaching abilities of educators. Education provided by NGOs will continue to be supported. The following capacities need to be developed among decision-makers and governmental officers : understanding concept of sustainable development, knowledge about environmental situation and environmentally sound technology, recognition of the bad effect caused by environmental destruction. To strengthen human resources in this area Japan will undertake the following activities: training in administration and technology for authorities at the local and national levels; cooperation by training people from developing countries; and cooperation among the national government, local authorities and relevant NGOs to conduct training for instructors to lead activities promoting environmental knowledge among the general public. Japan will continue to promote the following activities to increase public awareness: Providing information through various media from television, video and pamphlets to posters and commemorative stamps; Creating opportunities for the general public to take part in events such as an environment month, campaigns for communicate with nature and the recognition of persons who undertake meritorious activities in environmental conservation; Studying measures for the promotion of eco-tourism, both in Japan and abroad; Carrying out campaigns for conservation of resources and energy throughout the country, mostly during Energy Conservation Month and Recycling Month; Making improvements in the network among local authorities to strengthen the work done in the regions. In this context, World Environment Day (June 5) will be used to promote a series of activities by both the national government and local authorities.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: In order to develop partnerships among educators, scientists, Governments, NGOs, business and industry, youth, the media and other major groups so as to communicate the key messages of sustainable development, the Ministry of the Environment, in cooperation with the United Nations University, opened the Global Environment Information Center in October 1996 as the base for intercommunication. It provides

information on environmental education and environmental conservation activities conducted by various organizations including enterprises, NGOs and local governments.

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CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY- BUILDING IN DEVELOPING COUNTRIES

This issue has been covered under the heading Capacity-Building, Education, Training and Awareness-Raising in the various chapters of this Profile.

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CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

This issue deals mainly with activities undertaken by the UN System.

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CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

This issue has been covered under Cooperation in the various chapters of this Profile. However, you will find below a list of International Legal Instruments. It is very significant that frameworks to deal with a wide spectrum of environment and development issues were the result of negotiation at UNCED over a relatively short period of time. In addition to implementing the existing legal frameworks, it will be important for the international community to study the possibility of establishing additional frameworks as necessary. Japan will continue to positively participate in the formulation of related international law, as well as in the process of implementing such laws. Given the relationship between the various environment-related conventions, and trade-related problems, it is anticipated that there will be many issues which will require resolution. In this respect, Japan is in favor of strengthening all mechanisms for the settlement of disputes. Japan is of the view that the involvement of NGOs is essential in the realization of sustainable development. In this context Japan reaffirms the importance of the continued participation of NGOs, the scientific community, the private sector as well as local groups. International cooperation for the safe management of nuclear energy should be enhanced and Japan takes great pleasure in noting that the Convention on Nuclear Safety finally entered into force, with the understanding that nuclear safety should primarily be the responsibility of countries with nuclear installations.

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CHAPTER 40: INFORMATION FOR DECISION-MAKING

Decision-Making: The Ministry of the Environment, the National Institute for Environment Studies, and the Ministry of Education, Culture, Sports, Science and Technology are the institutions primarily responsible for information for decision-making. There is no one government institution which has centralized responsibility for decision-making. Each relevant ministry and agency collects and disseminates information and data in the field of sustainable development within its mandatory (e.g. population data by Ministry of Health, Labour and Welfare.) In addition to these relevant ministries /agencies, it is noted that Ministry of Public Management, Home Affairs, Posts and Telecommunications and Ministry of land, Infrastructure and Transport are mainly responsible in terms of development of communication infrastructure and development of GIS, respectively. There have been no mechanism for coordinating information management related to sustainable development within the government so far. In order for promoting policy for GIS development, inter-ministry co-ordination meetings have been convened jointly by Ministry of land, Infrastructure and Transport, Geographical Survey Institute and Cabinet Secretariat with the participation of relevant ministries/agencies. Law Concerning Access to Information Held by Administrative Organs was adopted in 1999 in order to strive for greater disclosure of information archived by administrative organs. The Law will be effective from April 2001. Japan has developed a System of National Accounts (SNA) that includes the Satellite System for Integrated Environmental and Economic Accounting (SEEA), drawing upon the standards contained in the SNA Handbook on Integrated Environmental and Economic Accounting of the United Nations. The work being undertaken will clarify the whole scope of environmental information through the development of the inventories of sources of environment-related information.

The Ministry of the Environment conducted a study, which was published in 1999, on identification and applicability of indicators for the purpose of effective monitoring of the implementation of Basic Environment Plan. The identified indicators is expected to be utilized in monitoring the new Basic Environment Plan revised in December 2000. Among major groups, scientist and local authorities are particularly active in information collection, analyses and dissemination. In addition to them, business sector has become active in disseminating environmental information concerning their operation by publishing corporation environmental report and establishing websites in recent years. While both national and local governments has requested the private sector to provide information for decision making in environmental protection policy and considerably utilized it for decades, private sector has become conscious about disclosing information on their environmental activity on voluntary basis to highlight their social responsibility.

Programmes and Projects: The Japanese Government has 1) connected local networks of ministries and agencies to the Internet; 2) provided every officials at headquarters of ministries and agency with an Internet connected computer; and 3) established websites of each ministry/agency. These programmes have improved the government officials' literacy on electric information and the condition of access to the information by general public including sustainable development information.

Status: Although information for sustainable development has been collected, analyzed and provided by relevant government bodies respectively, no particular mechanism of information network related sustainable development has been established. However, availability and accessibility of the information are not sufficient because the information is not compiled and configured with sustainable development perspective. It is expected to establish a meta-database for sustainable development information and national data clearinghouse for sustainable development. Governments at both national and local level once had been very reluctant to disclose administrative information and this attitude have been criticized. However citizens' demand for ensuring transparency and accountability of government operation have grown so large that administrative information disclosure becomes one of the biggest national political agenda in 1990s. As the result, preceded by the establishment of information disclosure ordinances in many local government, Law Concerning Access to Information Held by Administrative Organs was adopted in 1999 at the national level. Since administrative information more open to the public is a continuing trend, the access to information including sustainable development information will be improved and the participation into the decision-making process by the public is expected to be enhanced. Although the lack of political will and the lack of policy dialogues among stakeholders are consider to be major challenges defined above, the vagueness of the conception of sustainable development is also a major obstacle to promote measures in a persuasive manner at the national level. To make the measures more operative, specific guidelines regarding indicators and national information system to be adopted at the international level are expected. Such guidelines would help countries implement the promotion of indicators and national information systems more effectively.

Capacity-Building, Education, Training and Awareness-Raising: In general, the Japanese Government has been disseminating the information on major environmental issues including relevant international negotiations, through the Internet and mass media. Ministry of the Environment's website is taking a role of portal site of information on sustainable development. Its URL is <http://www.env.go.jp/> Governments at both national and local level has provided their officials with training courses for information analysis and

management. Examples of the theme of those courses are, utilization of remote-sensing data, computer operation, statistical data analysis and handling. The programmes have an emphasis on so-called hardware aspects like mechanical operation and lack of software aspects such as communication theory and interaction with general public etc. Some of local governments have implemented measures such as establishing websites for disseminating environmental information to their citizens and training their citizens how to connect the internet and acquire information through it.

Information: The Ministry of Land, Infrastructure and Transport and the Geographical Survey Institute of Japan are promoting the Global Mapping project. The Global Map consists of digital geographic information in standardized specifications covering all aspects of the land, such as land use, vegetation, land cover, elevation, population centers, transportation, drainage and boundaries. Global Map Data are available to anyone at marginal cost. International Steering Committee for Global Mapping (ISCGM) was established with the aim of realizing Global Map and expanding its benefits through international co-operation among national mapping organizations worldwide. Currently 79 UN member countries have joined the activities of ISCGM and 9 countries, including Japan, have completed development of Global Maps and offered the data to the general public through the Internet. Japan plays a leading role as the secretariat of ISCGM.

Research and Technologies: Various kinds of remote sensing sensors are being tested and utilized in Japan. Especially as for the oceanographic sensor, a real-time differential absorption LIDAR (DIAL) has been developing for detecting various impurities in the atmosphere. As the pulse repetition rate of the wavelength tunable laser used is 1000 Hz, the transient behavior of the impurities in the atmosphere can be measured within a second. A high repetition rate and all-solid-state wavelength tunable laser with wider wavelength range has also been developing. And the DIAL becomes much more useful tool for watching the atmosphere in the near future. Atmospheric Environmental Regional Observation System (AEROS) is a system to offers a real time distribution of atmospheric pollutants such as Nox, Sox and Ox concentration in and around Tokyo area through the internet. This system is a combination of existing atmospheric observation network system and the recently developing information technology. This system, starting from 2000, has greatly enhanced the people's accessibility to the information of atmospheric pollution on realtime basis. Realtime predictions of environmental impacts due to accidental releases of pollutant materials, e.g., radionuclides, are realized by using a combination of atmospheric and air pollution numerical models with geographical and meteorological database. A couple of computer-based real-time prediction systems, named SPEEDI and WSPEEDI, are now operated for domestic and world-wide nuclear accidents with accidental releases of radionuclides into the atmosphere.

Financing: The Ministry of the Environment, one of the government bodies responsible for environmental policy, spends about 150 million yen per year to maintain its website. This includes cost of leased computer equipment and preparing contents for the website.

Cooperation: The representative examples of cooperation in gathering and sharing information on sustainable development are: Asia-Pacific Network for Global Change Research (APN):The APN is an inter-governmental network whose primary purposes are to foster global environmental change research in the Asia-Pacific region, increase developing country participation in the research, and to strengthen links between the science community and policy makers. It promotes, encourages and supports research activities on long-term global changes in climate, ocean and terrestrial; Environmental Information Network in Asia and the Pacific (ECO ASIA NET): The Ministry of the Environment has implemented it since 1995. The purpose of the network is to establish an environmental information network in the Region. Two meetings were convened in order to identify the set of information to be registered at a clearing website with the participation of a dozen of Asia-Pacific Countries. A pilot web-site ("<http://www.ecoasia.net>") is available. Environmental centers, established in 6 countries with support of Japan International Cooperation Agency (JICA), has been playing pivotal roles as national bases for gathering and sharing environmental information.

In addition, Japan has provided assistance for the establishment of Environmental Information Network in China, which supports the Chinese government to gather and share environmental information. Japan has decided to extent a grant aid up to 940 million yen for the network. Furthermore, the new training course for the usage of this network has been set up in Beijing in cooperation with Japan International Cooperation Agency (JICA). Japan also intends to improve and expand the data network of observation data from Earth observation satellites including the expansion of this network into the Asia-Pacific region. In order to promote the integration of environmental information and its use in decision-making, Japan will further support and improve the organizations which carry out the main functions of collection and analysis of environmental information. Improvements in the collection and assessment of accurate scientific data are prerequisite for taking appropriate measures to protect the atmosphere. In this regard, Japan plays a leading role in the Integrated Global Observing Strategy Partnership, the international framework for the strategic integration of remote sensed and in-situ observations by both research and operational programmes. Japan is promoting the use of the Geographic Information System (GIS) and remote sensing by satellite. Both are extremely effective tools for monitoring agriculture and resource management, as well as mitigating natural disasters. Because of

the significance of these innovative technologies in helping to achieve sustainable development, Japan is active in encouraging: i) the use of GIS, including for global mapping, ii) earth observation, iii) development of internet applications to share satellite data, and iv) capacity building in the use of observational data.

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CHAPTER: INDUSTRY

Decision-Making: The Basic Environment Plan, which was adopted by the Cabinet in December 1994, identifies outlines of the roles of each entity of the society including industry in order to realize sustainable development. It describes eco-business as an essential ingredient for reaching a state of sustainable development with little environmental burden. Based on this Plan, the Action Plan for Economic Structure Reform was adopted in May 1997 in the form of a Cabinet decision. This Plan outlines concrete measures and the schedule, for the promotion of environmental industries. The targets in the Plan are supposed to be met by around 2001.

Programmes and Projects: No information available.

Status: Air pollution: An environmental quality standard (EQS) for SO₂ is satisfied in almost all areas of Japan. However, compliance with EQS for NO₂ and SPM (Suspended Particulate Matters) is very low in urban areas. In addition, it is imperative to take measures of hazardous air pollutants such as benzene and Dioxins. Water pollution: EQSs for surface water (23 substances) are satisfied in most areas. However, it is imperative to take measures of other hazardous water pollutants.

Capacity-Building, Education, Training and Awareness-Raising: No information available.

Information: No information available.

Research and Technologies: No information available.

Financing: No information available.

Cooperation: No information available.

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CHAPTER: SUSTAINABLE TOURISM

Decision-Making: At the national level, the Ministry of the Environment, the Ministry of Agriculture, Forestry and Fisheries, and the Ministry of Land, Infrastructure and Transport are responsible for sustainable tourism. At the local level, it is the Division in charge of nature conservation in prefectural government and the Division in charge of tourism in prefectural and municipal government which have responsibility. There is a Natural Parks Law which seeks to set aside specific areas or preserves for park utilization. There are no governmental guidelines, but there are several guidelines developed by the private sector, such as the guidelines for whale-watching in Ogasawara Islands and Kerama Islands. They are voluntary. Strategies and plans of relevance to sustainable tourism include the following: The Basic Environment Plan, which describes the roles of developers/tourism industries, tourists, and central and local governments in promoting eco-tourism; The National Strategy on Biological Diversity, which identifies issues to be addressed in order to promote eco-tourism; The Basic Plan on Forest Resources, which defines multiple-use of forests including the use for forest-based tourism as one of the most basic policy directions to be sought; and, The Seven-year Programme for Coastal Protection and Management, which includes conservation of natural beauty and eco-system at seacoasts and promotion of recreation.

Programmes and Projects: No information available.

Status: The survey by the Ministry of Land, Infrastructure and Transport in 1994 shows the extended income effect of tourism as 24.5 trillion yen (GDP by tourism industry) and the extended employment effect, at 4.1 million persons. On a more negative side, tourism also causes littering, and increase in environmental pollution load around tourists' spots caused by effluent and garbage discharged from facilities including tourist establishment located in tourism areas; traffic congestion, and nuisance to local communities in tourism areas. The term "eco-tourism" covers sustainable tourism, eco-tourism and nature-based tourism. Since there is no clear distinction among those three terms in Japan, it is difficult to identify activities according to those three categories. The followings are some examples of activities conducted as eco-tourism: Observation of mangrove forests in Iriomotejima Island; Whale watching in Ogasawara Islands and Kerama Islands; and, Benefits from the sale of "Hida Eco-passport", a guidebook to Hida region of Gifu Prefecture, is used to conserve nature and cultural resource conservation of the region.

Capacity-Building, Education, Training and Awareness-Raising: The following organizations have been established to promote eco-tourism and nature-based tourism at national or local levels: Japan Eco-tourism Society (national); Iriomote Eco-tourism Association (local); and Whale Watching Association (local, in Ogasawara Islands and Kerama Islands). Printed materials aimed at raising awareness on eco-tourism and nature-based tourism are produced and disseminated. These include an Eco-tourism Guidebook (in Iriomotejima Island, Yakushima Island, and "Hida Eco-passport", a guidebook to Hida region in Gifu Prefecture. Some travel agencies provide travel products related to eco-tourism. Probably, travel products like those tend to increase reflecting the change of tourists' consciousness and interests.

Information: In Iriomotejima Island a map of natural and cultural resources was produced for guiding the eco-tourism activities. The Ministry of the Environment provides information on facilities and activities for nature interpretation provided by the national and local governments via the Internet. Its Web address is <http://www.nats.jeef.or.jp/>. The Ministry of Land, Infrastructure and Transport is considering to build a database on tourism. And the Japan Eco-tourism Society provides information via the Internet at <http://www.tabicom.com/eco>.

Research and Technologies: Technology-related issues that need to be or are being addressed include (1) replacement of conventional vehicles in the traffic control areas in national parks with low-emission vehicles and (2) supply of electricity generated by the solar system. Solar power generation is currently applied in hotels and other tourist establishments.

Financing: Financing is provided as follows: National Budget Survey on Development of Eco-tourism 5 million yen; and, Nature Conservation Bureau, Ministry of the Environment. Total budget of the Ministry of Land, Infrastructure and Transport for FY1998: 3 trillion yen.

Cooperation: A Model sustainable tourism destination at home is Iriomotejima Island. Many surveys on tourism resources in the island have been carried out. An economical benefit to the local community from the eco-tourism can be expected. Abroad, Fiji is a model sustainable tourism destination. There is an economical benefit to the local community from the eco-tourism. And there exists development pressure on the natural environment. Consequently, preparation of conservation measures is urgently needed. Local authorities develop a system to promote eco-tourism by conducting surveys of tourism resources, providing information to the public and preparing lectures as a style of study meeting. The private sector conducts eco-tours.