Appendix

Appendix 1: Sources of Environmental Information in the Philippines and Japan

1. In the Philippines

(1) Philippine government agencies

1) Implementing agency of pollution control in Metro Manila

・Department of Environmental & Natural Resources

Aaronn II Building, 20 G. Araneta Ave. Extension
Quezon City, Metro Manila Philippines
phone(63-2)712-5278,743-1597
fax(63-2)731-3746

2) Implementing agency of pollution control around the Laguna Lake

・Laguna Lake Development Authority

3rd Floor, Rizal Provincial Capitol Bldg., Shaw Blvd.
Pasig City, Metro Manila Philippines
phone(63-2)635-6680, 631-2587,631-2552
fax(63-2)631-2595

3) Environmental issues in general

・Department of Environment and Natural Resources

Visayas Ave., Diliman
Quezon City, Metro Manila Philippines
phone(63-2)929-6626 to 29, 929-6633 to 35

4) Pollution control in general

・Environmental Management Bureau, DENR

99-101 Topaz Bldg., Kamias Road
Quezon City, Metro Manila Philippines
phone(63-2)926-8745

(2) Japanese government agencies and other institutions

1) Embassy of Japan

2627 Roxas Blvd., Pasay City, Metro Manila 1300 Philippines
（mailing address）P.O. Box 414 Pasay Central Post Office,
Pasay City, MM Philippines
phone(63-2)551-5710
fax(63-2)551-5780

2) JETRO, Manila

23rd Floor, Pacific Star Bldg.,
Sen. Gil J. Puyat Ave. Extension Corner, Makati Ave.
Makati City, Metro Manila, Philippines
phone(63-2)817-6431
fax(63-2)818-7490

3) JICA, Japan International Cooperation Agency Philippines Office

12th Floor, Pacific Star Bldg.,
Sen Gil J. Puyat Ave. Extension Corner, Makati Ave.,
Makati City, Metro Manila Philippines
（mailing address）P.O.Box 1026 Makati Central Post Office,
Makati City, MM Philippines
phone(63-2)893-3081
fax(63-2)816-4222

4) Japanese Chamber of Commerce & Industry in the Philippines, Inc.

6th Fl., Jaycem Bldg., 104 Rada St., Legaspi Village
Makati City, Metro Manila, Philippines
phone(63-2)892-3233
fax(63-2)815-0317

5) Overseas Economic Cooperation Fund, office in Manila

25th Fl., Pacific Star Bldg.,
Sen. Gil J. Puyat Ave. Extension Corner,Makati Ave.,
Makati City, Metro Manila, Philippines
phone(63-2)810-4826
fax(63-2)815-1799

6) Export- Import Bank of Japan, Office in Manila

14th Floor, Pacific Star Bldg.,
Sen. Gil J. Puyat Ave., Extension Corner, Makati Ave.,
Makati City, Metro Manila Philippines
phone(63-2)810-1295 / 1297
fax(63-2)817-3202

2. In Japan

(1) Japanese government agencies and other institutions

1) Office of Overseas Environmental Cooperation, Global Environment Department, Environment Agency of Japan

1-2-2 Kasumigaseki, Chiyoda-ku Tokyo 100 Japan
phone(03)3581-3351
fax(03)3581-3423

2) JETRO

2-2-5 Toranomon, Minato-ku Tokyo 105 Japan
phone(03)3582-5522（PR Division）

3) Overseas Economic Cooperation Fund

1-4-1 Otemachi Chiyoda-ku Tokyo 100 Japan
phone(03)3215-1304

4) Export- Import Bank of Japan

1-4-1 Otemachi, Chiyoda-ku Tokyo 100 Japan

phone(03)3287-9108

5) JICA, Japan International Cooperation Agency

Shinjuku Maynds Tower Bldg., 1-1-2 Yoyogi, Shibuya-ku Tokyo 151 Japan

phone(03)5352-5311～4

6) Institute of Developing Economies

42 Ichigayahonmuracho, Shinjuku-ku Tokyo 162 Japan

phone(03)3353-4231

7) Keidanren, Japan Federation of Economic Organizations

1-9-4 Otemachi, Chiyoda-ku Tokyo 100

phone(03)3279-1411

8) International Division, Japan Chamber of Commerce & Industry

3-2-2 Marunouchi, Chiyoda-ku Tokyo 100 Japan

phone(03)3283-7851

fax(03)3216-6497

9) Tokyo Chamber of Commerce and Industry

3-2-2 Marunouchi, Chiyoda-ku Tokyo 100 Japan

phone(03)3283-7657

fax(03)3283-7633

(2) Philippine government agencies

1) Embassy of the Philippines

11-24 Nanpeidaimachi, Shibuya-ku Tokyo 150 Japan

phone(03)3462-1216

Appendix 2: Environment-related Legislation in the Philippines

PRESIDENTIAL DECREE NO. 1151
PHILIPPINE ENVIRONMENTAL POLICY

Date of promulgation: June 6 1977

WHEREAS, the individual and, at times, conflicting demands of population growth, urbanization, industrial expansion, rapid natural resources utilization and increasing technological advances have resulted in a piece meal approach concept of environmental protection;

WHEREAS, such tunnel-vision concept is not conducive to the attainment of an ideal environmental situation where man and nature can thrive in harmony with one another; and

WHEREAS, there is now an urgent need to formulate an intensive, integrated program of environmental protection that will bring about a concerted effort towards the protection of the entire spectrum of the environment through a requirement of environmental impact assessments and statements;

NOW, THEREFORE, I, FERDINAND E. MARCOS, President of the Philippines, by virtue of the powers vested in me by the Constitution, do hereby order and decree :

SEC. 1. Policy — It is hereby declared as continuing policy of the State (a) to create, develop, maintain and improve conditions under which man and nature can thrive in productive and enjoyable harmony with each other, (b) to fulfill the social, economic and other requirements of present and future generations of Filipino, and (c) to insure the attainment of an environmental quality that is conductive to a life of dignity and well-being.

SEC. 2. Goal — In pursuing this policy, it shall be the responsibility of the Government, in cooperation with concerned private organizations and entities, to use all practicable means, consistent with other essential considerations of national policy, in promoting the general welfare to the end that the Nation may (a) recognize, discharge and fulfill the responsibilities of each generation as trustee and guardian of the environment for succeeding generations, (b) to assure the people of a safe, decent, healthful, productive and aesthetic environment, (c) encourage the widest exploitation of the environment without degrading it, or endangering human life, health and safety or creating conditions adverse to agriculture, commerce and industry, (d) preserve important historic and cultural aspects of the Philippine heritage, (e) attain a rational and orderly balance between population and resource use, and (f) improve the utilization of renewable and non-renewable resources.

SEC. 3. Right to a Healthy Environment — In furtherance of these goals and policies, the Government recognizes the right of the people to a healthy environment. It shall be the duty and responsibility of each individual to contribute to the preservation and enhancement of the Philippine environment.

SEC. 4. Environmental Impact Statement — Pursuant to the above enunciated policies and goals, all agencies and instrumentalities of the national government, including government-owned of controlled corporations, as well as private corporations, firms and entities shall prepare, file and include in every action, project or undertaking which significantly affects the quality of the environment a detailed statement on :

a) the environmental impact of the proposed action, project or undertaking;
b) any adverse environmental effect which cannot be avoided should the proposal be implemented ;
c) alternative to the proposed action;
d) a determination that the short-term uses of the resources of the environment are consistent with the maintenance and enhancement of the long-term productivity of the same; and
e) whenever a proposal involves the use of depletable or nonrenewable resources, a finding must be made that such use and commitment are warranted.

Before an environmental impact statement is issued by a lead agency, all agencies having jurisdiction over, or special expertise on, the subject matter involved shall comment on the draft environmental impact statement made by the lead agency within thirty (30) days from the receipt of the same.

SEC. 5. Agency Guidelines — The different agencies charged with environmental protection as enumerated in Letter of Instruction No. 422 shall sixty (60) days from the effectivity of this Decree, submit to the National Environmental Protection Council (NEPC) , their respective guidelines, rules and regulations to carry out the provisions of Sec. 4 hereof on environmental impact assessments and statements.

SEC. 6. Repealing Clause — All Acts, Presidential Decrees, executive orders, rules and regulations or parts thereof which are inconsistent with the provisions of this Decree are hereby repealed, amended or modified accordingly.

SEC. 7. Effectivity — This Decree shall take effect immediately.

Done in the City of Manila this 6th June in the year of Our Lord, nineteen hundred and seventy-seven.

PRESIDENTIAL DECREE NO. 1152
PHILIPPINE ENVIRONMENT CODE

Date of promulgation: June 6 1977

WHEREAS, the broad spectrum of environment has become a matter of vital concern to the government;

WHEREAS, the national leadership has taken a step towards this direction by creating the National Environment Protection Council under Presidential Decree No. 1121;

WHEREAS, it is necessary that the creation of the Council be complemented with the launching of a comprehensive program of environmental protection and management;

WHEREAS, such a program can assume tangible and meaningful significance only by establishing specific environment management policies and prescribing environment quality standards in a Philippine Environment Code.

NOW, THEREFORE, I, FERDINAND E. MARCOS, President of the Republic of the Philippines, by virtue of the powers vested in me by the Constitution, do hereby order and decree :

SEC. 1. Short Title — This decree shall be known and cited as the "Philippine Environment Code."

TITLE I AIR QUALITY MANAGEMENT

SEC. 2. Purposes — The purposes of this Title are :

a) to achieve and maintain such levels of air quality as to protect public health; and
b) to prevent to the greatest extent practicable, injury and / or damage to plant and animal life and property, and promote the social economic development of the country.

CHAPTER I — STANDARDS

SEC. 3. Ambient Air Quality Standards — There shall be established ambient air quality standards which shall prescribe the maximum concentration of air pollutants permissible in the atmosphere consistent with public health, safety and general welfare.

In the establishment of ambient air quality standards, factors such as local atmospheric conditions, location and land use, and available technology, shall be considered among others.

SEC. 4. National Emission Standards — There shall be established national emission standards for new and existing stationary and mobile sources of pollution which shall

consider among others such factors as type of industry, practicable control technology available, location and land use, and the nature of pollutants emitted.

SEC. 5. Community Noise Standards — Appropriate standards for community noise levels shall be established considering, among others, location, zoning and land use classification.

SEC. 6. Standards for Noise-Producing Equipment — There shall be established a standard for noise-producing equipment such as construction equipment, transportation equipment, stationary engines, and electrical or electronic equipment and such similar equipment or contrivances. The standard shall set a limit on the acceptable level of noise emitted from a given equipment for the protection of public health and welfare, considering among others, the magnitude and condition of use, the degree of noise reduction achievable through the application of best available technology and the cost of compliance.

The installation of any noise-producing equipment shall conform with the requirements of Presidential Decree No. 1096 and other applicable laws as well as their implementing rules and regulations.

SEC. 7. Aircraft Emission and Sonic Booms — Appropriate government agencies shall encourage research studies on the harmful effects of aircraft emissions in the environment in order to establish permissible emission standards.

Research and studies shall also be undertaken to mitigate and / or minimize the effects of sonic booms in the environment.

CHAPTER II — REGULATION AND ENFORCEMENT

SEC. 8. Air Quality and Noise Standards — National Pollution Control Commission in coordination with appropriate government agencies shall be responsible for the enforcement of ambient air quality emission and noise standards, including the monitoring and surveillance of air pollutants, licensing and permitting of air pollution control facilities, and the promulgation of appropriate rules and regulations.

Existing air quality emission and noise standards may be revised and / or modified consistent with new development and technology.

SEC. 9. Aircraft Noise — Community noise standards around airports shall be implemented by the Civil Aeronautics Administration in coordination with the National Pollution Control Commission.

SEC. 10. Vehicular Emission — The Land Transportation Commission, in coordination with the National Pollution Control Commission, shall implement emission standards for vehicles and may deputize other appropriate law enforcement agencies for the purpose.

SEC. 11. Radioactive Emissions — The release and emission of radioactivity into the environment incident to the establishment or possession of nuclear energy facilities and radioactive materials, handling, transport, production, storage, use and disposal of radioactive materials shall be regulated by the Philippine Atomic Energy Commission in coordination with other appropriate government agencies.

CHAPTER III — MONITORING

SEC. 12. Air Quality Monitoring — The National Pollution Control Commission in coordination with appropriate government agencies, shall establish to the greatest extent practicable an air quality monitoring network. Such air quality monitoring network shall put to maximum use the capabilities of these agencies.

The National Environmental Protection Council shall be furnished with the results of air quality monitoring activities.

SEC. 13. Weather Modification — The Philippine Atmospheric, Geophysical and Astronomical Services Administration shall monitor regularly meteorological factors affecting environmental conditions in order to effectively guide air pollution monitoring activities.

Activities relating to weather modification such as rainfall stimulation and storm seeding experiments shall be undertaken in consultation or coordination with the Philippine Atmospheric, Geophysical and Astronomical Services Administration.

TITLE II WATER QUALITY MANAGEMENT

SEC. 14. Purpose — It is the purpose of this Title to prescribe management guidelines aimed to protect and improve the quality of Philippine water resources through :

a) classification of Philippine waters;
b) establishment of water quality standards;
c) protection and improvement of the quality of Philippine water resources; and
d) responsibilities for surveillance and mitigation of pollution incidents.

CHAPTER I — CLASSIFICATION STANDARDS

SEC. 15. Classification of Philippine Waters — The National Pollution Control Commission, in coordination with appropriate government agencies, shall classify Philippine waters, according to their best usage. In classifying said waters, the National Pollution Control Commission shall take into account, among others, the following :

a) the existing quality of the body of water at the time of classification;
b) the size, depth, surface area covered, volume, direction, rate of flow, gradient of stream; and

c) the most beneficial uses of said bodies of water and lands bordering them for residential, agricultural, commercial, industrial, navigational, recreational, and aesthetic purposes.

SEC. 16. Reclassification of Waters Based on Intended Beneficial Use — Where the public interest so requires, the National Pollution Control Commission, in coordination with appropriate government agencies, shall reclassify a body of water based on the intended beneficial use and take such steps as may be necessary to upgrade the quality of said water. Other government agencies may adopt higher standards for a particular body of water, subject to the approval of the National Pollution Control Commission.

SEC. 17. Upgrading of Water Quality — Where the quality of water has deteriorated to a degree where its state will adversely affect its best usage, the government agencies concerned shall take such measures as may be necessary to upgrade the quality of such water to meet the prescribed water quality standards.

SEC. 18. Water Quality Standards — The National Pollution Control Commission shall prescribe quality and effluent standards consistent with the guidelines by the National Environmental Protection Council and the classification of waters prescribed in the preceding sections, taking into consideration, among others, the following :

a) the standard of water quality or purity may vary according to beneficial uses; and
b) the technology relating to water pollution control.

CHAPTER II — PROTECTION AND IMPROVEMENT OF WATER QUALITY

SEC. 19. Enforcement and Coordination — The production, utilization, storage and distribution of hazardous, toxic and other substances such as radioactive materials, heavy metals, pesticides, fertilizers, and oils, and disposals, discharge and dumping of untreated wastewater, mine- tailings and other substances that may pollute any body of water of the Philippines resulting from normal operations of industries, water-borne sources, and other human activities, as well as those resulting from accidental spills and discharges shall be regulated by appropriate government agencies pursuant to their respective charters and enabling legislations. In the performance of the above functions, the government agencies concerned shall coordinate with the National Environmental Protection Council and furnish the latter with such information as may be necessary to enable it to attain its objectives under Presidential Decree 1121.

SEC. 20. Clean-up Operations — It shall be the responsibility of the polluter to contain, remove and clean-up water pollution incidents at his own expense. In case of his failure to do so, the government agencies concerned shall undertake containment, removal and clean-up operations and expenses incurred in said operations shall be charged against the persons and/or entities responsible for such pollution.

SEC. 21. Water Quality Monitoring and Surveillance — The various government agencies concerned with environmental protection shall establish to the greatest extent

practicable a water quality surveillance and monitoring network with sufficient stations and sampling schedules to meet the needs of country. Said water quality surveillance network shall put to maximum use the capabilities of such government agencies. Each agencies involved in such network shall report to the National Environment Protection Council the results of these monitoring activities as the need arises.

TITLE III LAND USE MANAGEMENT

SEC. 22. Purposes — The purposes of this Title are :

a) to provide a rational, orderly and efficient acquisition, utilization and disposition of land and its resources in order to derive therefrom maximum benefits; and
b) to encourage the prudent use and conservation of land resources in order to prevent an imbalance between the nation's needs and such resources.

SEC. 23. National Land Use Scheme — The Human Settlements Commission, in coordination with the appropriate agencies of the government, shall formulate and recommend to the National Environmental Protection Council a land use scheme consistent with the purpose of this Title.

The Land Use Scheme shall include, among others, the following :

a) a science-based and technology-oriented land inventory and classification system;
b) a determination of present land uses, the extent to which they are utilized, under-utilized, rendered idle or abandoned;
c) a comprehensive and accurate determination of the adaptability of the land for community development, agriculture, industry, commerce, and other fields of endeavor;
d) a method of identification of areas where uncontrolled development could result in irreparable damage to important historic, or aesthetic values, or nature systems or processes of national significance;
e) a method for exercising control by the appropriate government agencies over the use of land in area of critical environmental concern and areas impacted by public facilities including, but not limited to, airports, highways, bridges, ports and wharves, buildings and other infrastructure projects;
f) a method to ensure the consideration of regional development and land use in local regulations;
g) a policy for influencing the location of new communities and methods for assuring appropriate controls over the use of land around new communities;
h) a system of controls and regulations pertaining to areas and development activities designed to ensure that any source of pollution will not be located where it would result in a violation of any applicable environmental pollution control regulations; and
i) a recommended method for the periodic revisions and updating of the national land use scheme to meet changing conditions.

SEC. 24. Location of Industries — In the location of industries, factories, plants, depots and similar industrial establishments, the regulating or enforcing agencies of the government shall take into consideration the social, economic, geographic and significant environmental impact of said establishments.

TITLE IV NATURAL RESOURCES MANAGEMENT AND CONSERVATION

SEC. 25. Purposes — The purposes of this Title are :

a) to provide the basics on the management and conservation of the country's natural resources to obtain the optimum benefits therefrom and to preserve the same for the future generations; and
b) to provide general measures through which the aforesaid policy may be carried out effectively.

CHAPTER I — FISHERY AND AQUATIC RESOURCES

SEC. 26. Management Policy — The National government, through the Department of Natural Resources, shall establish a system of rational exploitation of fisheries and aquatic resources within the Philippine territory and shall encourage citizen participation therein to maintain and/or enhance the optimum and continuous productivity of the same.

SEC. 27. Measures for Rational Exploitation — Measures for the rational exploitation of fisheries and other aquatic resources may include, but shall not be limited to, the following :

a) undertaking manpower and expertise development ;
b) acquiring the necessary facilities and equipment ;
c) regulating the marketing of threatened species of fish or other aquatic resources;
d) reviewing all existing rules and regulations on the exploitation of fisheries and aquatic resources with a view to formulating guidelines for the systematic and effective enforcement thereof ; and
e) conserving the vanishing species of fish and aquatic resources such as turtles, sea snakes, crocodiles, corals, as well as maintaining the mangrove areas, marshes and inland areas, coral reef areas and islands serving as sanctuaries for fish and other aquatic life.

CHAPTER II — WILDLIFE

SEC. 28. Management Policy — The National government, through the Department of Natural Resources, shall establish a system of rational exploitation and conservation of wildlife resources and shall encourage citizen participation in the maintenance and / or enhancement of their continuous productivity.

SEC. 29. Measures for Rational Exploitation — Measures for rational exploitation of wildlife resources may include, but shall not be limited to, the following :

a) regulating the marketing of threatened wildlife resources;
b) reviewing all existing rules and regulations on the exploitation of wildlife resources with a view of formulating guidelines for the systematic and effective enforcement thereof; and
c) conserving the threatened species of fauna, increasing their rate of production, maintaining their original habitat, habitat manipulation, determining limits, population control in relation to the carrying capacity of any given area, banning of indiscriminate and/or destructive means of catching or hunting them.

CHAPTER III — FORESTRY AND SOIL CONSERVATION

SEC. 30. Management Policy for Forestry — The National government, through the Department of Natural Resources shall undertake a system of rational exploitation of forest resources and shall encourage citizen participation therein to keep the country's forest resources at maximum productivity at all times.

SEC. 31. Measures for Rational Exploitation of Forest Resources — Measures for the rational exploitation of forest resources may include, but shall not be limited to, the following :

a) regulating the marketing of threatened forest resources;
b) reviewing all existing rules and regulations on the exploitation of forest resources with a view of formulating guidelines for the systematic and efficient enforcement thereof;
c) conserving threatened species of flora as well as increasing their rate of propagation; the banning of destructive modes of exploitation, kaingin making or shifting cultivation, indiscriminate harvesting of minor forest products, the recycling methods of waste materials; and
d) carrying out a continuing effort on reforestation; timber stand improvement; forest protection; land classification; forest occupancy management; agri-silviculture; range management; agri-silvicultural / kaingin management; multiple use forest; timber management; and forest research.

SEC. 32. Management Policy on Soil Conservation — The National government, through the Department of Natural Resources and the Department of Agriculture, shall likewise undertake a soil conservation program including therein the identification and protection of critical watershed areas, encouragement of scientific farming techniques, physical and biological means of soil conservation, and short-term and long-term researches and technology for effective soil conservation.

SEC. 33. Use of Fertilizers and Pesticides — The use of fertilizers and pesticides in agriculture shall be regulated, prescribing therefor a tolerance level in their use. Their

use shall be monitored by appropriate government agencies to provide empirical data for effective regulation.

CHAPTER IV — FLOOD CONTROL AND NATURAL CALAMITIES

SEC. 34. Measures in Flood Control Program — In addition to the pertinent provisions of existing laws, the following shall be included in a soil erosion, sediment and flood control program :

a) the control of soil erosion on the banks of rivers, the shores of lakes and the sea-shores;
b) the control of flow and flooding in and from rivers and lakes;
c) the conservation of water which, for purposes of this Section shall mean forms of water, but shall not include captive water;
d) the needs of fisheries and wildlife and all other recreational uses of natural water ;
e) measures to control the damming, diversion, taking, and use of natural water, so far as any such act may affect the quality and availability of natural water for other purposes; and
f) measures to stimulate research in matters relating to natural water and soil conservation and the application of knowledge thereby acquired.

SEC. 35. Measures to Mitigate Destructive Effects of Calamities — The national government, through the Philippine Atmospheric, Geophysical and Astronomical Services Administration, shall promote intensified and concerted research efforts on weather modification, typhoon, earthquake, tsunami, storm surge, and other tropical natural phenomena in order to bring about any significant effect to mitigate or prevent their destructive effects.

CHAPTER V — ENERGY DEVELOPMENT

SEC. 36. Policy — Consistent with the environmental protection policies, the national government, through the Energy Development Board, shall undertake an energy development program encouraging therein the utilization of invariant sources such as solar, wind and tidal energy.

SEC. 37. Measures for Energy Development — Measures for energy development program may include, but shall not be limited to, the following :

a) setting up pilot plants utilizing invariant sources of energy;
b) training of technical personnel for purposes of energy development; and
c) conducting researches aimed at developing technology for energy development.

SEC. 38. Safety Measures on Energy Development — Rules and regulations shall be promulgated to prevent or mitigate the adverse effects of energy development on the environment. For this purpose, all nuclear powered plants and plants exploring and

utilizing geothermal energy, whether owned or controlled by private or government entities shall:

a) observe internationally accepted standards of safety; and
b) provide safety devises to ensure the health and welfare of their personnel as well as the surrounding community.

CHAPTER VI — CONSERVATION AND UTILIZATION OF SURFACE GROUND WATERS

SEC. 39. Management Policy — In addition to existing laws, the national government through the National Water Resources Council in coordination with other appropriate government agencies, shall prescribe measures for the conservation and improvement of the quality of Philippine water resources and provide for the prevention, control and abatement of water pollution.

CHAPTER VII — MINERAL RESOURCES

SEC. 40. Management Policy — The national government, through the Department of Natural Resources, shall undertake a system of gainful exploitation and rational and efficient utilization of mineral resources and shall encourage citizen participation in this endeavor.

SEC. 41. Measures for Exploitation and Utilization of Mineral Resources — Measures for the gainful exploitation and rational and efficient utilization of such mineral resources may include, but shall not be limited to, the following :

a) increasing research and development in mineral resources technology;
b) training of additional technical manpower needed in geology, geophysics, mining engineering, and related fields;
c) regulating the exploitation of identified mineral reserves;
d) accelerating the exploitation of undiscovered mineral deposits; and
e) encouraging the establishment of processing plants for refined metal.

TITLE V WASTE MANAGEMENT

SEC. 42. Purposes — The purposes of this Title are :

a) to set guidelines for waste management with a view to ensuring its effectiveness;
b) to encourage, promote and stimulate technological, educational, economic and social efforts to prevent environmental damage and unnecessary loss of valuable resources of the nation through recovery, recycling and reuse of wastes and waste products; and
c) to provide measures to guide and encourage appropriate government agencies in establishing sound, efficient, comprehensive and effective waste management.

CHAPTER I — ENFORCEMENT AND GUIDELINES

SEC. 43. Waste Management Programs — Preparation and implementation of waste management programs shall be required for all provinces, cities and municipalities. The Department of Local Government and Community Development shall promulgate guidelines for the formulation and establishment of waste management program.

Every waste management program shall include the following :

a) an orderly system of operation consistent with the needs of the area concerned;
b) a provision that the operation will not create pollution of any kind or will constitute public nuisance;
c) a system for safe and sanitary disposal of waste;
d) a provision that existing plans affecting the development, use and protection of air, water or natural resources shall be considered;
e) schedules and methods of implementing the development, construction and operation of the plan together with the estimated costs; and
f) a provision for the periodic revision of the program to ensure its effective implementation.

SEC. 44. Responsibility of Local Government — Each province, city or municipality shall provide measures to facilitate collection, transportation, processing and disposal of waste within its jurisdiction in coordination with other government agencies concerned. For this purpose, the national government shall provide the necessary subsidy to local governments upon request made through the National Environmental Protection Council and subject to such terms and conditions as the latter may provide.

CHAPTER II - METHODS OF SOLID WASTE DISPOSAL

SEC. 45. Solid Waste Disposal — Solid waste disposal shall be by sanitary landfill, incineration, composting, and other methods as may be approved by competent government authority.

SEC. 46. Sanitary Landfills — Local governments, including private individuals, corporations or organizations may operate or propose to operate one or more sanitary landfills. An entity proposing to operate a sanitary landfill shall submit to the appropriate government agency an operational work plan showing, among other things, a map of the proposed work location, disposal areas for rubbish, garbage, refuse and other waste matter; and the equipment or machinery needed to accomplish its operations. In no case shall land-fill or work locations under this Section be located along any shore or coast-line, or along the banks of rivers and streams, lakes, throughout their entire length, in violation of any existing rules and regulations.

SEC. 47. Incineration and Composting Plants — The installation and establishment of incineration or composting plants, or the alteration/modification of any part thereof shall

be regulated by the local governments concerned in coordination with the National Pollution Control Commission.

SEC. 48. Disposal Sites — The location of solid waste disposal sites shall conform with existing zoning, land use standards, and pollution control regulations.

SEC. 49. Dumping into the Sea and Other Navigable Waters — The dumping or disposal of solid wastes into the sea and any body of water in the Philippines, including shore-lines and river banks, where the wastes are likely to be washed into the water is prohibited. However, dumping of solid wastes or other materials into the sea or any navigable waters shall be permitted in case of immediate or imminent danger to life and property, subject to the rules and regulations of the Philippine Coast Guard and the National Pollution Control Commission.

Government agencies and private entities which are undertaking solid waste management programs shall make consultations with the government agencies concerned with respect to the effects of such dumping to the marine environment and navigation.

CHAPTER III — METHODS OF LIQUID WASTE DISPOSAL

SEC. 50. Liquid Waste Disposal — Wastewater from manufacturing plants, industries, community, or domestic sources shall be treated either physically, biologically or chemically prior to disposal in accordance with the rules and regulations promulgated by proper government authority.

SEC. 51. Applicability of Sec. 49 — The provisions of Sec. 49 hereof shall likewise apply to the dumping or disposal of liquid waste into the sea and other bodies of water.

TITLE VI MISCELLANEOUS PROVISIONS

SEC. 52. Population Environment Balance — In the assessment of development projects, the National Environmental Protection Council, hereinafter referred to in this Title as the Council, shall take into consideration their effect on population with a view to achieving a rational and orderly balance between man and his environment.

SEC. 53. Environment Education — The Department of Education and Culture shall integrate subjects on environmental education in its school curricula at all levels. It shall also endeavor to conduct special community education emphasizing the relationship of man and nature as well as environmental sanitation and practices.

The Council and other government agencies implementing environmental protection laws in coordination with public information agencies of the government shall undertake public information activities for the purpose of stimulating awareness and encouraging involvement in environmental protection.

SEC. 54. Environmental Research — The Council shall undertake and/or promote continuing studies and research programs on environmental management and shall, from time to time, determine priority areas of environmental research.

SEC. 55. Monitoring and Dissemination of Environmental Information of Foreign Origin — The Council shall keep itself informed of current environmental developments by obtaining information and literature from foreign sources through the Department of Foreign Affairs, government agencies and other entities, both domestic and foreign. Such information and literature shall be given the widest dissemination possible.

SEC. 56. Incentive — To operate the installation and the utilization of pollution control facilities, the following incentives are hereby granted :

a) exemption to the extent of fifty (50) percent of tariff duties and compensating tax for importation of pollution control equipment, devices, spare parts and accessories for a period of five (5) years from the effectivity of this Decree subject to the conditions that will be imposed by the Council.
b) a tax credit equivalent of fifty (50) percent of the value of the compensating tax and tariff duties that would have been paid on the pollution control equipment, devices, spare parts and accessories had these items been imported shall, within a period of seven (7) years from the effectivity of this Decree, be given to the person or firm who or which purchases them from a domestic manufacturer, and another tax credit equivalent to twenty-five (25) percent thereof shall be given to said manufacturer, subject to such conditions as may be imposed by the Council; and
c) deductions equivalent to fifty (50) percent of the expenses actually incurred on research projects undertaken to develop technologies for the manufacture of pollution control equivalent which have been proven effective and commercially reproducible, from the taxable income of the person or firm actually undertaking such projects subject to the conditions that may be imposed by the Council.

The pollution control equipment, devices, spare parts and accessories acquired under this Section shall not be sold, transferred or disposed within five (5) years from the date of acquisition without the prior approval of the Council otherwise the importer or purchaser shall pay twice the amount of the tax exemption or tax credit granted.

SEC. 57. Financial Assistance/Grant — Financial assistance/grant for the study, design and construction of environmental protection facilities especially for waste disposal in favor of cities, municipalities, small and medium scale industries may be granted on a case-to-case basis subject to such conditions as may be imposed by the Council.

SEC. 58. Participation of Local Government Units and Private Individuals — It shall be the responsibility of local government units as well as private individuals to actively participate in the environmental management and protection programs of the government.

SEC. 59. Preservation of Historic and Cultural Resources and Heritage — It shall be the duty of every person to help preserve the historic and cultural resources of the country such as sites, structures, artifacts, documents, objects, memorials, and priceless trees.

SEC. 60. Government Offices Performing Environmental Protection Functions — Government agencies vested by laws to exercise environmental management powers, shall continue to function as such within their respective jurisdictions. The Council may, however, in the exercise of its powers and functions under Presidential Decree No. 1121, inquire into any action or issue of environmental significance.

SEC. 61. Public Hearings — The Council may, whenever it deems necessary, conduct public hearings on issue of environmental significance.

SEC. 62. Definition of Terms — As used in this Code.

a) Ambient Air Quality means the average atmospheric purity as distinguished from discharge measurements taken at the source of pollution. It is the general amount of pollution present in a broad area.
b) Emission means the act of passing into the atmosphere an air contaminant, pollutant, gas stream and unwanted sound from a known source.
c) Water Quality means the characteristics of water which define its use in terms of physical, chemical, and biological contents; hence, the quality of water for domestic use is different from industrial use.
d) Water Quality Surveillance means a close and continuous supervision of the water quality to detect development, movement, or charges in the characteristics of the water.
e) Water Quality Standard means a plan that is established by governmental authority as a program for water pollution prevention and abatement. Such standard may include water classification and the criteria to support the uses of the water.
f) Effluent Standards means restrictions established to limit levels of concentration of physical, chemical, and biological constituents which are discharged from point sources.
g) Clean-Up Operations refers to activities conducted in removing the pollutants discharged or spilled in water to restore it to pre-spill condition.
h) Accidental Spills refers to spills of oil or other hazardous substances in water that result from accidents such as collisions and groundings.
i) Areas of Critical Environmental Concern are areas where uncontrolled development could result in irreparable damage to important historic, cultural, or aesthetic values or natural systems or processes of national significance.
j) Hazardous Substances means elements or compounds which when discharged in any quantity present imminent or substantial danger to public health and welfare.
k) Areas Impacted by Public Facilities refers to areas where the introduction of public facilities may tend to induce development and urbanization of more than local significance or impact.

l) Environmental Impact is the alteration, to any degree, of environmental conditions or the creation of a new set of environmental conditions, adverse or beneficial, to be induced or caused by a proposed project.

m) Government Agencies refers to national, local and regional agencies and instrumentalities including government-owned or controlled corporations.

TITLE VII FINAL PROVISIONS

SEC. 63. Separability of Provisions — If any provision of this Code, or the application of such provisions to any person or circumstance, is declared unconstitutional, the remainder of the Code or the application of such provisions to other persons or circumstances shall not be affected by such declaration.

SEC. 64. Effectivity — This Code shall take effect upon its approval.

Done in the City of Manila, this 6th day of June in the year of Our Lord, Nineteen hundred and seventy-seven.

Appendix 3: Current Status of Environmental Policies of Japanese Companies in Asia, including the Philippines

1. Overview of the Survey

In 1995, questionnaire and interview surveys were conducted on Japanese companies doing business in four Asian countries (the Philippines, Thailand, Indonesia and Malaysia) with the cooperation of Japanese Chamber of Commerce and Industry in the respective countries. The purpose of the surveys was to gather information on what environmental considerations were being taken by Japanese companies overseas.

Based on membership lists, the questionnaire was sent out to corporate members (excluding individual and organizational members) of the Japanese Chamber of Commerce and Industry in the four nations, which totaled 2,070 companies, including non-manufacturing companies and small-scale local representative offices. Of them, 425 replies were returned (return rate of 20.5%).

In the survey, questionnaires were sent to 274 companies in the Philippines, and replies were received from 75. The return rate was 27.4%.

The results of the survey are summarized below, while comparing the status of environmental policies of Japanese companies in the Philippines with average data for the other three Asian countries (350 replies).

The breakdown of replies by business sector is as follows: manufacturing - 57.3% (67.1% in the other three Asian countries; hereafter, figures in parentheses refer to average data for these countries) and non-manufacturing (construction, retail, finance, insurance, etc.) - 38.7% (29.7%). As for the number of employees, 48.0% (27.7%) had fewer than 100, 26.7% (33.1%) had 100 or more employees but less than 500 and 17.3% (20.6%) had 1,000 employees or over. More than 70% (60%) of the total were companies with fewer than 500 employees. This percentage was especially high in the Philippines.

2. Survey Results

(1) Environmental measures taken when initially locating business

In preparation for starting business operation in the host country, only 33.3% (27.7%) of the companies were legally obliged to conduct environmental assessment (Fig. 1) but 45.4% (46.3%) had actually conducted environmental assessment (Fig. 2), meaning that a far larger number than compulsory took this action. (34.7% (29.7%) had conducted environmental assessment in accordance with local legislation, etc.; 10.7% (16.6%) had voluntarily conducted independent assessment.)

Figure 1 Was Environmental Assessment Legally Obligatory?

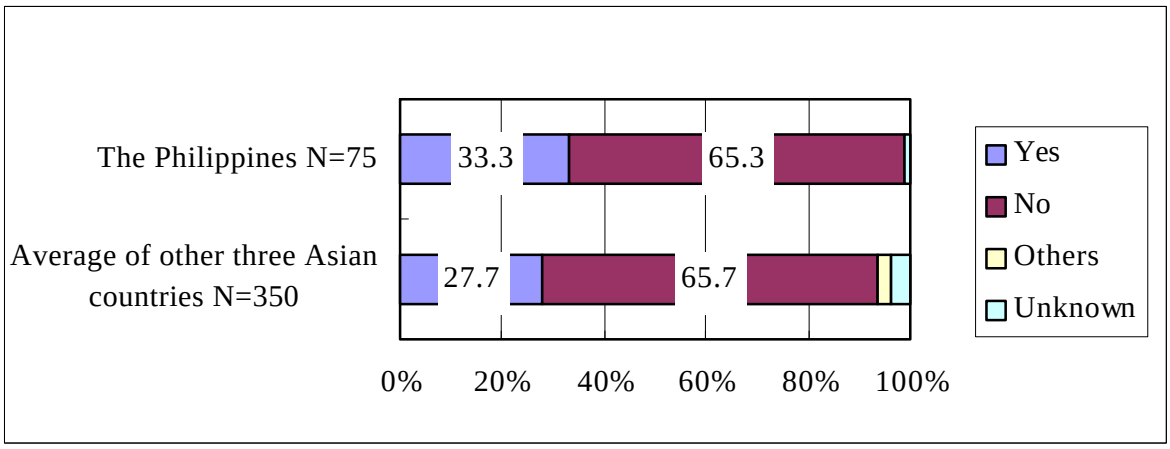
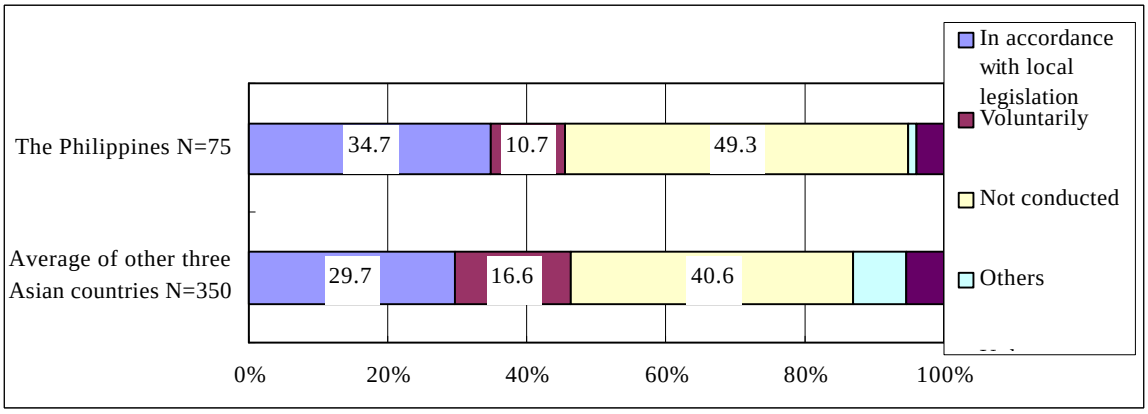


Figure 2 How Environment Assessment Is Conducted?



(2) Systems and organizations for promoting environmental measures

26.7% (30.6%) of the companies were familiar with the Japanese Environment Agency's Environment Friendly Corporate Activities Guideline; 29.3% (26.9%) were familiar with the Keidanren Global Environment Charter (Fig. 3, multiple answers); 52.0% (53.4%) already have instituted or are preparing to institute a total in-house management policy on environmental issues (Fig. 4).

48.0% (52.0%) of the companies have sections or personnel responsible for environmental issues (Fig. 5). (14.7% (10.3%) had specialist sections; 4.0% (4.3%) had specialist staff; 29.3% (37.4%) had staff with combined responsibilities.)

Figure 3 Percentage of Recognition of Guidelines and Charters (Each Company Replies to All Items)

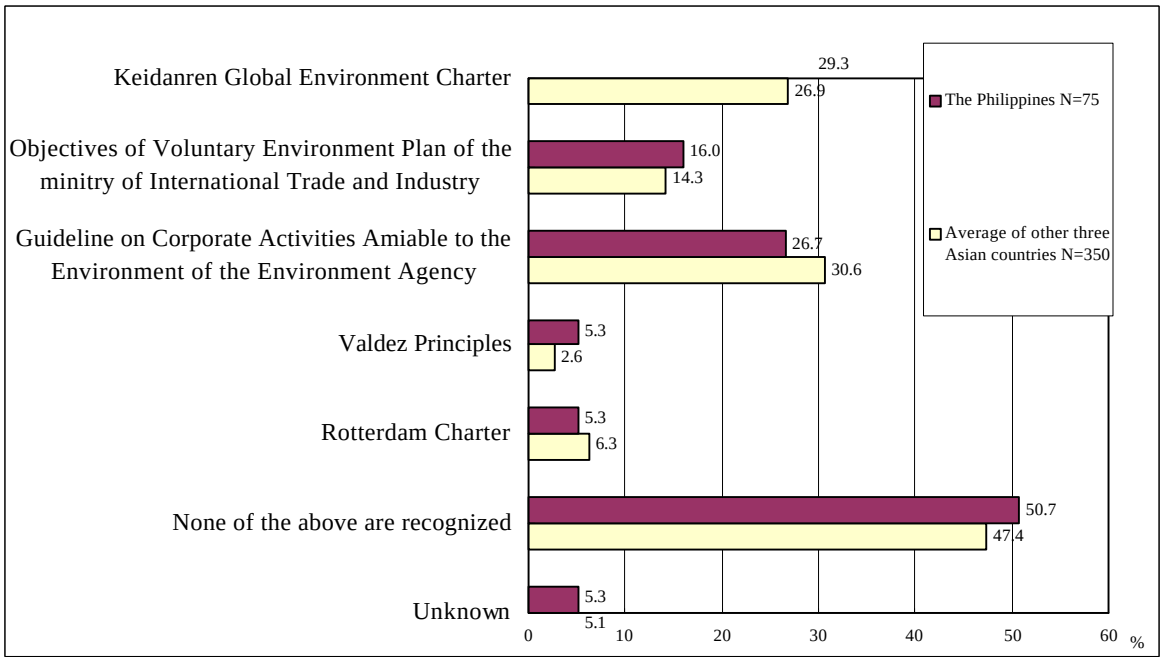


Figure 4 Is Management Policy on Environmental Issues Instituted?

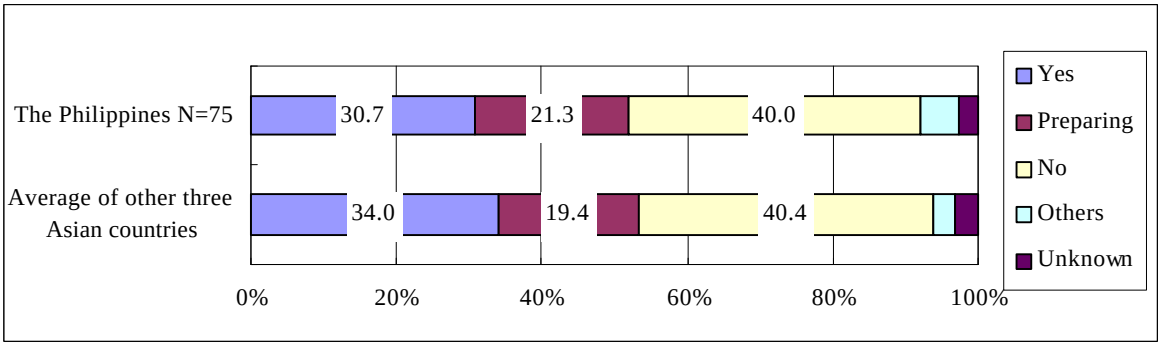
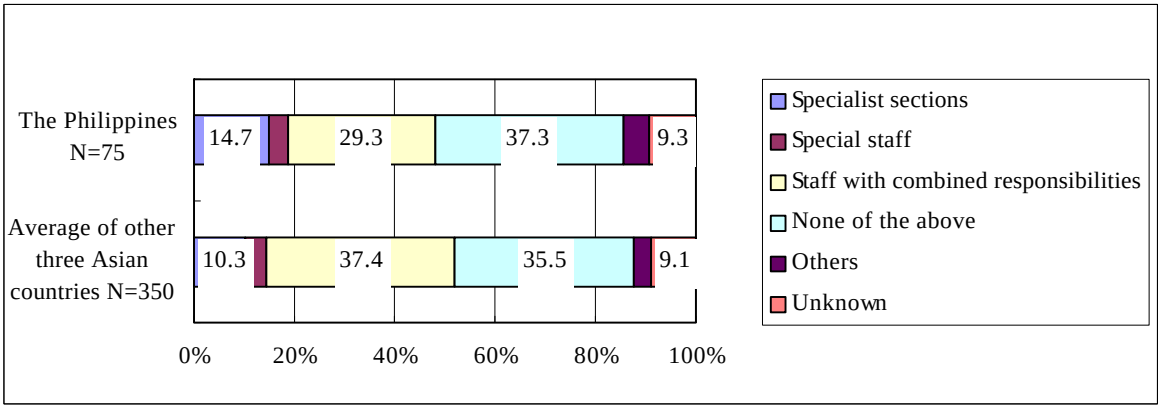


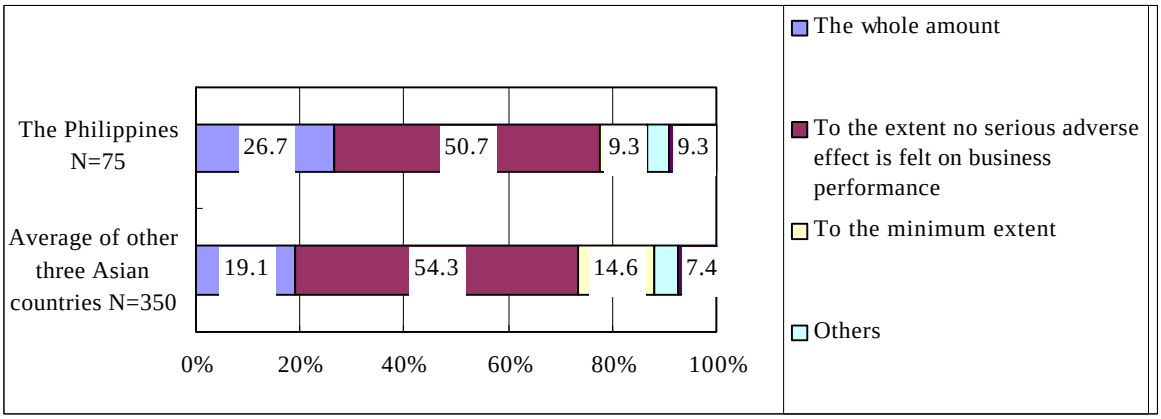
Figure 5 Sections or Personnel Responsible for Environmental Issues



(3) Environmentally conscious business activities

77.4% (73.4%) of the companies are willing to spend money or make investments in order to protect the environment, over and above the minimum necessary to observe existing regulations (Fig. 6). (26.7% (19.1%) intend to bear costs regardless of business performance; 50.7% (54.3%) intend to make expenditure as much as possible so long as no serious adverse effect is felt on business performance.)

Figure 6 Extent of Environmental Conservation Expense to be Born



(4) Environment-related issues arising at the time of start-up in the host country

32.0% (37.1%) of the companies were subject to local government regulations concerning air pollution, water pollution, etc. (Fig. 7).

21.3% (28.3%) submit measurement results on air or water quality to local administrative bodies, etc. (Fig. 8). (17.3% (22.3%) report readings as required by law; 4.0% (6.0%) report voluntarily; 17.3% (24.0%) are inspected regularly as required by law.)

13.4% (21.2%) of the companies experienced some types of environmental problems at the time of start-up of local operation, including problems that did not affect anything outside the company (Fig. 9).

Of them, 33.3% (50.6%) experienced problems of:- discharge of water pollutants, and 16.7% (18.4%) problems with treatment, disposal, and malodor of waste products. The same percentage, 16.7% (2.3%), experienced problems related to procedures with administrative offices, and 16.7% (3.4%) also experienced problems with startup of business itself. In comparison with averages for the other three Asian countries, there were few reports from the Philippines about problems with malodor, noise, or vibration; most replies were about procedural problems with administrative organs and problems with establishment of business operations. (Fig. 10,multiple answers).)

An interview survey revealed that in all four Asian countries treatment of effluent arising from operational processes was handled with the best measures available in the host country; however, some companies seemed not to be properly treating non-commercial domestic effluent that arises within the company. The survey also revealed that some companies, unable to find disposal sites for waste products, are storing these within their premises. Such a situation, unless appropriate control methods are adopted, may lead to environmental problems, and in this respect, are examples of issues that need tackling in the future.

17.3% (25.7%) of the companies think that environmental problems may arise in the future. Of them, 53.8% (24.4%) have concerns about vibration and noise problems, 38.5% (55.6%) consider treatment and disposal of waste products as potential problems, 30.8% (42.2%) fear discharge of water pollutants, and 30.8% (25.6%) fear discharge of air pollutants (Fig. 11, multiple answers).

Figure 7 Is Your Company Subject to Environment-related Regulations?

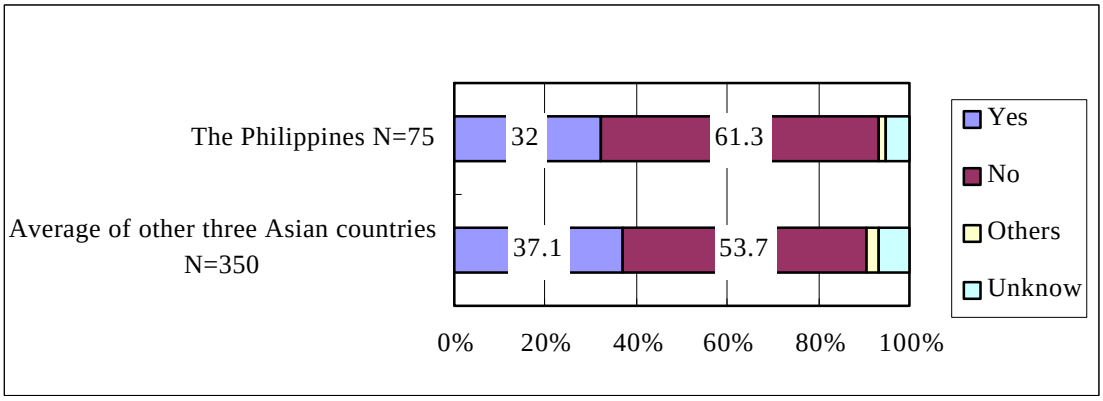


Figure 8 Does Your Company Submit Measurement Results on Air and Water Quality? (multiple answers)

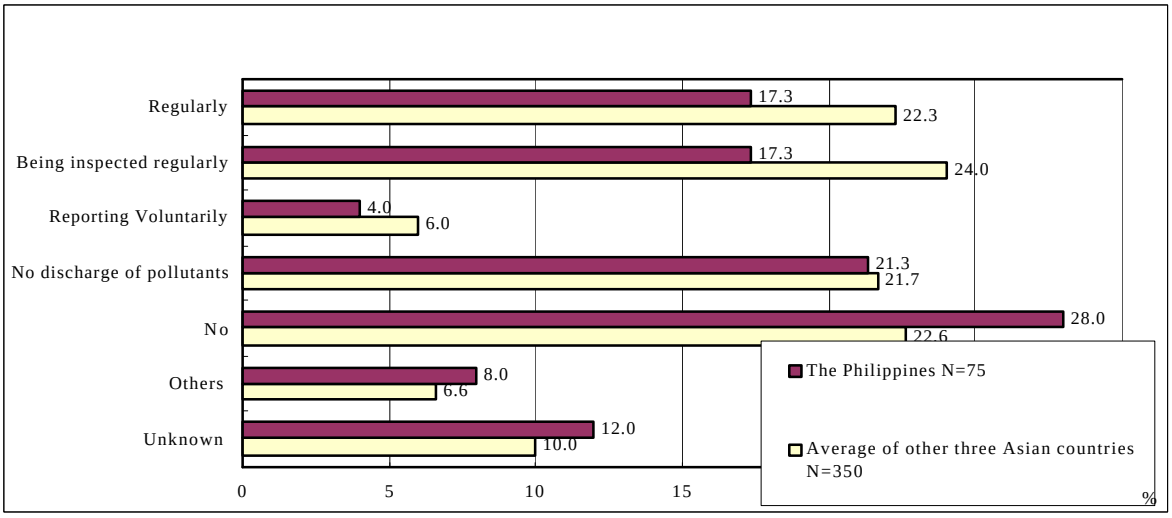


Figure 9 Have Your Company Experienced any Environmental Problems?

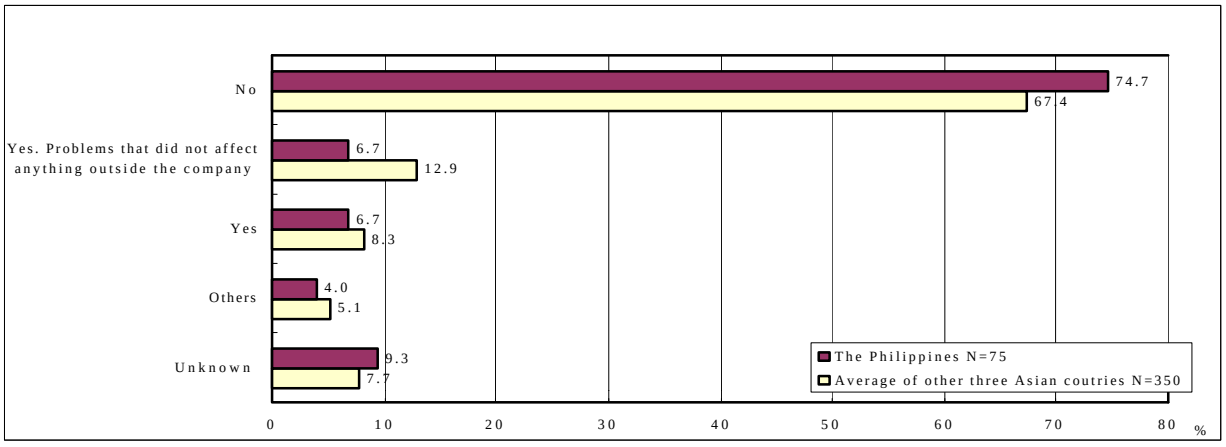


Figure 10 Problems in the Past (multiple answer)

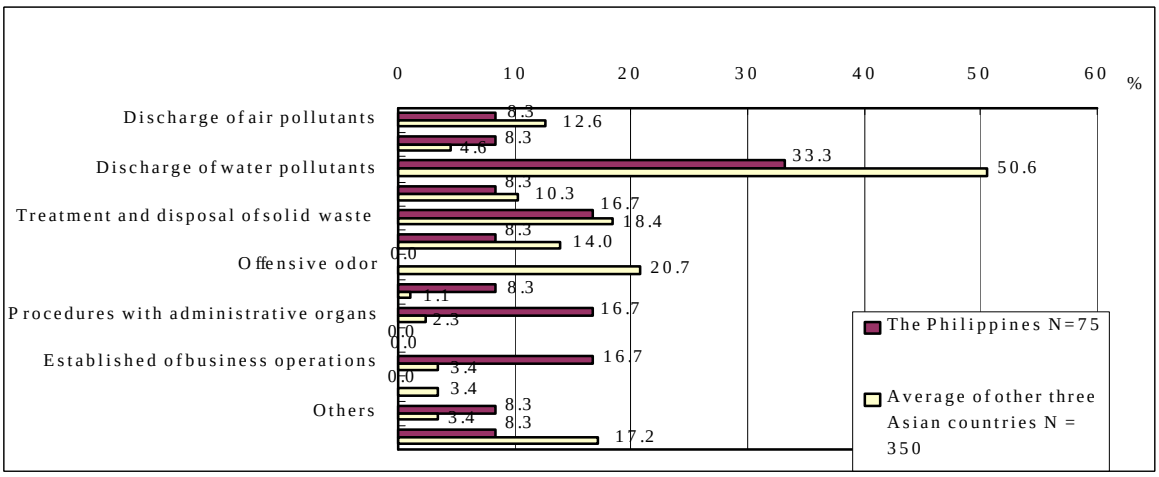
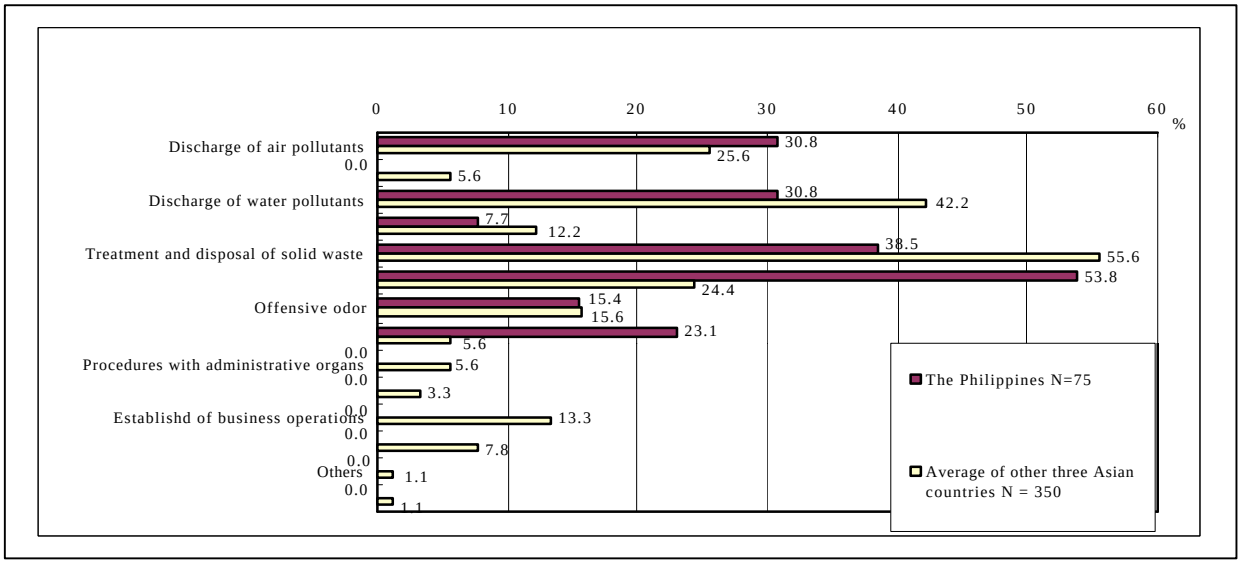


Figure 11 Problem in the Future (multiple answer)

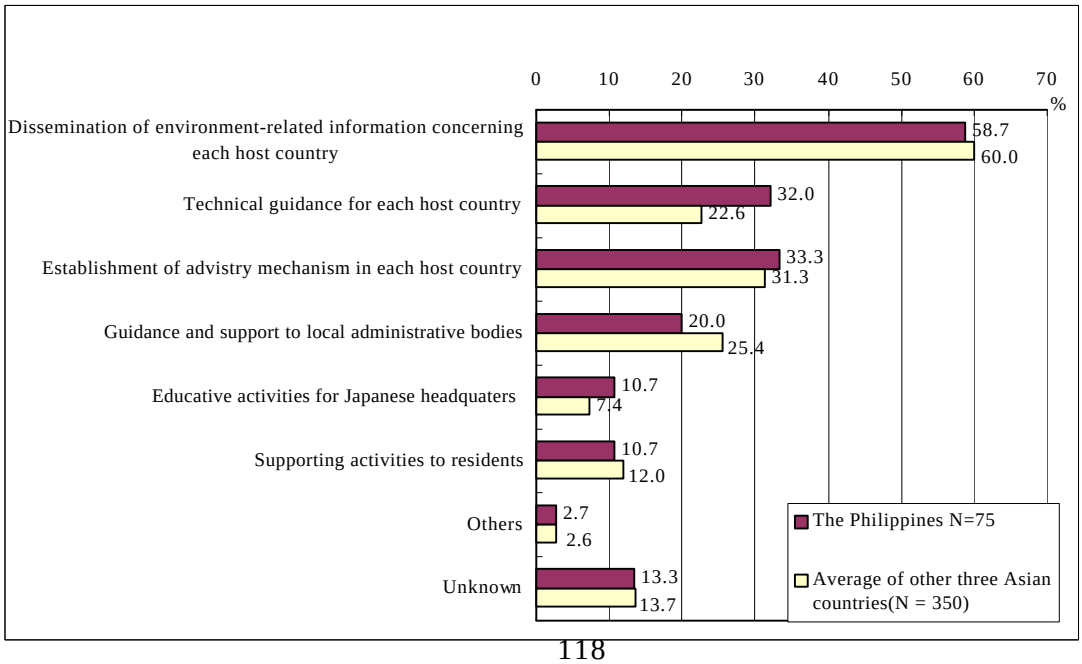


(5) What companies expect from the Japanese Government

The actions or measures these companies expect from the Japanese Government, so that Japanese companies overseas may further improve their environmental activities, include:- provision of environment-related information on each host country, i.e. compilation of handbooks 58.7% (60.0%); establishment of advisory mechanism in host country 33.3% (31.1%); ［guidance and support of local governments and training in Japan of host country's administrative personnel in order to improve environmental protection technology, measurement technology, etc. 20.0% (25.4%);］ [technical guidance on environmental technology with respect to measurement methods, etc. employed in host country 32.0% (22.6%)] (Fig. 12, multiple answers).

Requests were heard in the interview survey for the compilation of handbooks that give details of environmental regulations and status of environmental problems in each country and of case studies of actions taken by companies already operating in the relevant host countries.

Figure 12　What Companies Expect from the Japanese Government (multiple answers)



Appendix 4: Global Environmental Issues Today

1. Introduction

Global environmental problems are notably characterized by the global geographical scope of their impact, as opposed to conventional environmental problems such as industrial pollution, and by the temporal scope of their effects, which may well extend to future generations. Much is still to be discovered about their mechanisms and effects; also, once damage is done, it is too late. Because of the nature of global environmental problems, therefore, it is important to eliminate uncertainties about their mechanisms and effects as quickly as possible and to take suitable countermeasures. However, global environmental problems relate to manifold areas, and as such, call for an interdisciplinary approach that goes beyond traditional bounds and necessitates cooperation among wide-ranging sectors.

Despite the diversity of tasks confronting us, we have managed to build up rapidly in recent years knowledge about global environmental issues. International efforts at addressing the problems have greatly changed in nature. The Appendix 4 will discuss global environmental issues as classified into nine major areas, ranging from global warming to environmental problems of developing nations, and will comment on these in the light of the most up-to-date information on the status of the respective issue and international action being taken. In addition, the Appendix 4 will review the latest moves being made by the international community to tackle global environmental issues, mainly with respect to action in readiness for the UN Special General Assembly on the Environment, the first such conference to be held in five years since the Earth Summit in Brazil in June 1992 (UN Conference on Environment and Development), and also in readiness for the 3rd Session of the Conference of the Parties to the UN Framework Convention on Climate Change (Kyoto Conference on the Prevention of Global Warming: COP3) to be held in Kyoto in December 1997.

2. Global Warming

The earth's temperature is determined by the balance between the solar energy radiating from the sun and the heat that the earth as a whole emits into space. The earth is surrounded by "greenhouse gases" which absorb the heat radiating from the earth's surface. The higher the concentration of these gases becomes, the more the radiant heat is prevented from escaping into space, with the result that in the earth's temperature rises. This is what is known as global warming.

Possible consequences of global warming include rises in sea levels due to increases in the volume of the oceans and outbreaks of weather abnormalities due to changes in climatic mechanisms. Global warming, then, is an extremely important problem that is expected to have grave consequences, in the near future, on the living environment of human beings all over the world.

The foremost example of a greenhouse gas is carbon dioxide (CO_2), which is produced by combustion. Besides CO_2, there is methane, nitrous oxide (N_2O), and chlorofluorocarbon (CFC). The concentration level of carbon dioxide in the atmosphere is said to have been 260 to 280 ppm on average before the Industrial Revolution (latter half of 18th century), but levels have risen dramatically since then, nearing 360 ppm today.

Global warming has a wide impact on our lives. The 2nd Assessment Report published

in December 1995 by the Intergovernmental Panel on Climate Change (IPCC) states that there is considerable evidence that global warming occasioned by human activity is already taking place and predicts that there will be roughly a 2-degree rise in average temperatures and a rise of some 50 cm in sea levels by the year 2100, unless we take policy measures to prevent warming.

A higher sea level entails the danger of loss of land by many people in small islands and river delta areas, which are extremely sensitive to rises in water levels. Temperature increases will entail a big impact on the ecosystem and agriculture, as well as desertification and water shortages.

It will be too late if we start introducing measures after the effects of global warming become clearly felt. Thus, in May 1992, the Framework Convention on Climate Change was signed so that all countries of the world may cooperate in taking appropriate steps at prevention. The convention took effect from March 1994, and the first signatories conference was held in Berlin in March 1995 and the second conference in Geneva in July 1996. The third conference is to be held in Kyoto in December 1997.

In Japan, the Action Plan to Prevent Global Warming was drawn up in 1990. Diverse measures are being adopted in line with the Plan.

3. Depletion of the Ozone Layer

The ozone layer is found in the stratosphere, at the height of over 10,000 meters. It plays an important role in protecting humans, animals and plants from harmful ultraviolet rays by absorbing most of these short-wavelength rays that emanate from the sun. However, it has been discovered that this important ozone layer is being destroyed by man-made chemicals such as CFCs.

CFC is a name given to many different chemical substances which are made by replacing the hydrogen in hydrocarbons with chlorine or fluoride. These CFCs have useful properties. They are virtually harmless in themselves. They do not react with other substances. They easily gasify or liquefy repeatedly, according to the pressure applied. Some CFCs are able to dissolve oil well. Because of their usefulness, CFCs were widely used, as refrigerants in refrigerators and air conditioners, as cleaning agents of precision components such as electronic circuits, as foaming agents of cushions and polyurethane, and as spraying agents in aerosol spray cans.

Certain CFCs are chemically stable, therefore, if released into the atmosphere, they do not break up at all and reach the stratosphere. In the stratosphere, they absorb the strong ultraviolet from the sun and decompose, emitting chlorine atoms. These chlorine atoms break up ozone into oxygen molecules. In this reaction, one chlorine atom breaks up several tens of thousands of ozone molecules in a chain reaction. Thus, an immense number of ozone molecules are destroyed one after another.

Other similar destroyers of the ozone layer include halon, used in fire extinguishing agents, trichloroethane, used in detergents, and carbon tetrachloride, used to make solvents and fluorocarbon.

When the ozone layer is destroyed, the irradiation level of harmful ultraviolet rays

reaching the earth increases, and fears are that environmental impact will be felt, such as greater incidence of skin cancer and damage to the ecosystem.

In order to prevent these adverse consequences, an international framework, the Vienna Convention on Ozone Layer Protection and the Montreal Protocol on Destructive Substances of Ozone Layer were signed in 1985 and 1987, respectively. The Montreal Protocol became effective in 1989. After this, amendments were made three times, in 1990, November 1992, and December 1995, in order to make stricter regulatory standards. As a result, production of specified CFCs and carbon tetrachloride was stopped in developed countries at the end of 1995. As for developing nations, agreement has been reached for these substances to be totally banned in the year 2010. Nevertheless, the effect of the regulatory action will only start to be evident after the year 2000. Meanwhile, the ozone hole over the South Pole is reported to be growing larger year by year.

In Japan, in response to these international moves, the Law on the Protection of Ozone Layer by Control of Specified Substances (Ozone Layer Protection Law) was passed in May 1988. Controls and monitoring are conducted in accordance with this law.

4. Acid Rain

Acid rain is caused by fossil fuels such as petroleum and coal being burned and sulfur oxides and nitrogen oxides being released into the atmosphere. These chemicals rise into the clouds and repeat complex chemical reactions and ultimately turn into sulfuric acid ions and nitric acid ions, resulting in the phenomenon that highly acidic rain or dry granular substances fall to the ground. Acid rain normally refers to precipitation of pH (hydrogen ion concentration) 5.6 or below. In Europe and America, acid rain is seriously damaging the ecosystems of lakes and forests and it has become an international environmental problem, one which is transported across borders.

Monitoring results of acid rain over the 3 years between 1993 and 1995 recently published by the Environment Agency of Japan show that the annual average of pH levels of rainwater is 4.8 to 4.9 in Japan. Some trees have been found to have died and lakes with high acidity have been found. The Environment Agency has concluded that "acid rain in Japan has reached the level of adverse ecological impact." In a simulation study using as model the Kamakita Lake in Saitama Prefecture, it is predicted that if present levels of acid rain continue, the acidification of lakes will start to take place as early as thirty years from now.

Acid rain needs to be tackled on a wide geographic level. In order to discuss how best to conduct the monitoring of acid rain in the East Asian region, the Environment Agency has been holding a workshop annually since 1993, comprising experts from government and international organizations. In the experts' conference held in Niigata in November 1995, it was agreed that an East Asia Acid Rain Monitoring Network should be formed as early as possible, before the year 2000.

The Japan-China Joint Committee on Environmental Protection held in accordance with the Japan-China Environmental Protection Cooperation Agreement concluded in March 1994 regards acid rain as an important area of Japan-China cooperation in the field of environmental affairs.

5. Marine Pollution

Pollutants are entering the oceans through various channels. Nutrient salts and toxic substances enter the sea from the land, via rivers and the atmosphere; oil is leaked from ships and as a result of offshore extraction; waste materials are dumped or incinerated at sea.

Closer to home, our coastal waters are contaminated by numerous empty glass and plastic bottles that get washed ashore, and the red tides and blue tides have become common occurrences. As for marine pollution created by heavy metals and other toxic substances, developed countries are suffering from localized pollution and from high concentration levels of toxins in fish and shellfish.

In the open sea, pollution is deteriorating markedly in recent years. Ballast water and tank cleaning water that contain oil discharged from tankers have become causes of marine pollution by turning into oil films and waste oil clots that float on the surface. What is more, if vessels have accidents involving large-scale spillage of oil near coasts, fishing, industry, and shipping all suffer, posing grave economic consequences. However, over and above these, what is graver is the consequence on the marine environment.

In March 1989 when the oil tanker Exxon Valdez ran aground off Alaska, USA, and 42,000 kiloliters of petroleum spilled out into the ocean, a major disaster of the kind, local fishery activities and tourism industry suffered tremendous economic damage. Above all, because the accident took place in a part of Alaska near the Columbia Glacier, the ecological damage, including that to marine wildlife, was extremely serious.

Still fresh in the Japanese memory is the accident in January 1997, when the Russian registered tanker Nakhodka sank in the middle of the Japan Sea, discharging heavy oil and causing pollution over a wide area of Japanese coastal waters, disastrously affecting fishing and tourism as well as birds and the entire ecological system.

In order to pursue effectively the prevention of marine pollution, international cooperation is imperative. The IMO (International Maritime Organization) has been active in international action, including the drawing up of the London Anti-Dumping Treaty, the Malpole Treaty, and the UN Convention on the Maritime Law.

In order to prevent pollution of the Japan Sea and the Yellow Sea, the four nations of Japan, South Korea, China and Russia adopted the Northwest Pacific Regional Waters Action Plan (NOWPAP) in 1994. Monitoring and other practical measures are now being discussed.

6. Transboundary Movements of Toxic Waste

Recent years have seen the export of toxic waste from developed nations of Europe and America to countries in Africa and South America, resulting sometimes in inappropriate disposal or illegal dumping leading to environmental pollution. There have also been many incidents of ships carrying such exported toxic waste being refused unloading of cargo, forcing them to wander the seas without destination. The issue of toxic waste has thus become an international problem.

Because of this situation, UNEP (United Nations Environment Programme) initiated actions aimed at preventing environmental pollution created by cross-border removal of toxic waste and their disposal. Accordingly, the Basel Convention on the Control of the Removal of Toxic Waste Across National Borders and Their Disposal was adopted in March 1989. This convention took effect in May 1992. In March 1995, in the 2nd international conference of signatories to this convention, it was decided to ban the export of waste from OECD countries to non-OECD countries.

Japan signed the Basel Convention, and accordingly, in its domestic context, it passed the "Legislation on the Control of Export of Specified Toxic Waste" in December 1992. In order to make this legislation take smooth effect, the government is promoting international cooperation in order to implement environmentally appropriate management of toxic waste.

7. Biodiversity

The extinction of living species is progressing at the fastest ever rate since the earth began. The reason for this dramatic decrease in the number of species is not due to the process of nature but mainly due to human activity. Therefore, the issue of biodiversity is drawing attention as a global environmental problem.

On this planet, there is an extremely wide variety of life forms, from huge living things such as the blue whale and giant fir trees to small creatures such as plankton in water and microorganisms in the soil. These organisms live in diverse environments, interacting with each other and constituting the ecosystem of the whole earth.

About 3 to 4 billion years ago, life emerged on the planet. Ever since, in the process of evolution, many species appeared and many also disappeared, due to factors such as environmental change such as climate and topography or competition among species. Our ecosystem today is part of the earth's history. It is but one stage in the evolving world, which developed from the Paleozoic Era to the Mesozoic Era, then through to the Neozoic Era. Change will continue in the future. The extinction of species is something that always occurred in the process of nature. The issue at stake today is the rapid change effected by the expansion of human activity.

The reasons for the extinction of wildlife include:- destruction or deterioration of habitat, indiscriminate hunting, impact of invading species, food shortage, trapping to prevent damage to agricultural crops and livestock, and accidental capture. Of these, with respect to the destruction or deterioration of habitat, there are the serious problems of environmental destruction in tropical forests, coral reefs, and wetlands.

In order to maximally conserve the diversity of life on earth together with their habitats and to realize their sustainable use, the Convention on Biodiversity was concluded in June 1992, aimed at the fair distribution of benefits to be obtained from the genetic resources of living organisms. This convention took effect in 1993. The signatories have the responsibility to draw up a national strategy that includes concrete measures to achieve the protection of biodiversity. Japan adopted its national strategy on biodiversity in October 1995 after a cabinet conference of ministers with portfolio relating to global environmental conservation was held to approve the strategy.

8. Diminution of Forests (Especially Tropical Forests)

Concern is mounting on the destruction of tropical forests, the last remaining vast natural ecosystem in the world. As the domains of human activities expanded, the world's forests have continually diminished. This is because the use of timber increased and the area of land for development had enlarged. However, it only used to be in developed regions of the temperate zones where advanced urban civilizations sprang up and population increase was rapid that the large-scale destruction of forests occurred. Yet, in recent years, what is alarming is the rapid loss or deterioration of forests in developing nations of the tropics.

The final report of the forest resources assessment project conducted by the FAO (Food and Agriculture Organization of the United Nations) found that in the decade between 1981 and 1990, tropical forests decreased in area by an annual average of about 15.4 million hectares. This is a vast area equivalent to about 40% of Japan's surface area.

The immediate reasons for the loss of tropical forests are said to include:- excessive slash-and-burn farming, excessive harvesting of timber for firewood and charcoal, alteration of use to grazing or farming, etc., and inappropriate commercial logging. What lie behind these reasons are social problems in developing nations, namely poverty and population explosion.

In the Earth Summit held in 1992, the depletion of forests was taken up as one of the most pressing issues. Agenda 21 pointed to methods of protecting tropical forests and other forests of the world. Also in the Earth Summit, the Forest Principles Declaration was adopted.

This declaration is the world's first accord on forest issues. Although it has no binding power like a convention, it is considered to be an authoritative document that must be referred to in future international conferences and negotiations concerning forests and in all types of planning and implementation of forest improvements. In view of this declaration, a new International Tropical Timber Agreement controlling the import and export of timber was signed in 1994.

9. Desertification

The phenomenon of desertification is spreading all over the world. It is a crisis that the entire globe is now confronting. Desertification is defined as the "deterioration of the land caused by diverse factors including climatic change and human activity in arid, semi-arid, and arid semi-wet regions".

There are thought to be two major causes of desertification. One is the "climatic factor", the movement of arid areas due to changes in the global atmospheric environment. The other is the "human factor", the impact of human activity that goes beyond what the fragile ecosystem can accommodate in the arid and semi-arid regions of the earth.

These "human factors" include grazing of cattle over and above the grass's capacity of regrowth (overgrazing), decline of soil fertility due to shortened fallow periods (over cultivation), and the excessive cutting of trees for firewood and charcoal. Besides these, there is the problem of the accumulation of salts in irrigated agricultural land leading to the deterioration and barrenness of soil. Land that once becomes barren because of desertification is exceedingly difficult to restore to its former state, unless vast amounts of labor and money are expended for this purpose.

According to a UN survey, desertification is affecting 3.6 billion hectares of land or a quarter of the earth's total land area, and 900 million people, or a sixth of the world's entire population.

To combat the problems created by desertification, the so-called "Desertification Prevention Convention" was adopted in June 1994 and took effect in December 1996. This is a convention intended to mobilize the entire international community into taking cooperative action to counter this desertification problem which is becoming particularly grave in developing nations (especially Africa).

10. Environmental Problems in Developing Nations

In developing nations, such as those in Asia, provision of public services such as transport, sewerage, waste disposal and other urban infrastructures cannot keep pace with the rapid increase and congregation of population in cities. Consequently, problems including poor sanitation and air pollution due to automobile exhaust are worsening.

In countries where industrialization is underway, industrial pollution is becoming apparent, as pollution control of factories is inadequate. The result is that air quality in cities of the developing world is deteriorating. Especially, in cities where heating is necessary in winter, in cities which are located on plateaus, or in cities where car traffic is profuse, the problem of pollution is serious indeed.

In rivers which flow through cities or industrial areas, serious water pollution is evident due to industrial and domestic effluent. In addition, pollution created by toxic substances such as heavy metals is on the rise. Moreover, soil and food contamination is occurring because of the use of highly residue-prone agricultural chemicals. There is also increasing subsidence due to excessive drawing of underground water.

In Central and Eastern Europe and in the countries of the former Soviet Union, pollution control was inadequate and inefficient production activity had been allowed to take place under their planned economic system. The end of the Cold War clearly revealed the truth about the severity of environmental pollution there. Above all, very grave are the problems of air pollution caused by power plants and heat supply facilities and of water pollution of rivers and ground water due to mining effluent and overuse of agricultural chemicals and fertilizers.

Needless to say, developing countries are taking measures to curb pollution; however, financial resources, technology, personnel, and experience are all in short supply, and there is a limit to what each country can do on its own. In view of this, international aid from developed nations and international organizations are essential. Japan has valuable experience and advanced pollution control technology and know-how accumulated in the process of its surmounting of severe pollution problems during its period of high economic growth. Thus, world expectation is high for Japan to play an important role in this respect. Japan thus has launched many cooperative programs in the direction of solving pollution problems in developing nations, through bodies such as the Japan International Cooperation Agency (JICA) and the Overseas Economic Cooperation Fund (OECF).

11. Actions of the International Community

(1) Action in preparation for the UN Special General Assembly on the Environment

In June 1997, exactly five years after the United Nations Environment and Development Conference (Earth Summit) of 1992, a UN special general assembly was held for the purpose of reviewing Agenda 21, which was adopted at the Earth Summit. In readiness for this special general assembly, international organizations and governments conducted follow-up studies of Agenda 21. The Commission on Sustainable Development (CSD), established in February 1993 as subsidiary body to the UN's Economic and Social Council, has been meeting each year in order to deliberate on how Agenda 21 was being implemented. The 5th meeting to be held in April 1997 will conduct comprehensive discussions in preparation for the forthcoming UN special general assembly.

The UNEP (United Nations Environment Programme) deliberated follow-ups on the Earth Summit in its 1993 Management Council. It was agreed that priority areas of each UNEP program were to be determined, in view of the limited financial resources available, and that liaison with CSD and other organizations was to be strengthened.

The Management Council held between January and February 1997 discussed the UNEP's actions in preparation for the UN special general assembly.

UNDP (United Nations Development Programme), in addition to the individual national projects already in place, has a fund called Capacity 21, aimed at the improvement of policy forming framework/system, personnel development, and creation/reinforcement and support of policy implementation system in developing countries. This program is now being carried out.

ESCAP (United Nations Economic and Social Commission on Asia and the Pacific) in 1992 approved the establishment of the Commission on Environment and Sustainable Development. This commission aims at integrating environment into development in the Asia-Pacific region and to make effective use of energy and other natural resources for the maintenance and promotion of various conditions necessary for sustainable development. Every year, it discusses follow-up measures of Agenda 21.

The 3rd Environment Ministers' Conference was held in November 1995 and adopted the Declaration of Ministers on Environmentally Sound and Sustainable Development in the Asia-Pacific and the Regional Action Plan for Sustainable Development.

(2) Action in Preparation for COP3

In 1995 in Berlin, the First Session of the Conference of the Parties to the UN Framework Convention on Climate Change (COP1) was held and the following two major decisions were made.

First, it recognized that the stipulations made by the existing convention was inadequate and the Berlin Mandate was passed. This was a decision to start discussions to draw up a protocol or such documentary conclusion before COP3 in 1997 concerning policy measures for the realization of emission reduction targets of greenhouse gases within the specified period between 2000 and 2020.

The other important decision of this conference was that on AIJ, or Activities Implemented Jointly. This is an attempt to tackle the prevention of global warming by signatories in groups, and it was decided that a test period will run until the year 2000.

In July 1996, COP2 was held in Geneva, Switzerland. In the second half of this conference, ministerial-level meeting were held and a declaration of ministers were announced. This declaration held the IPCC (Intergovernmental Panel on Climate Change) the 2nd Assessment Report in high esteem as the most authoritative document at that point in time. Also, it again stated the necessity to activate political will in order to pass some legal document such as a protocol during COP3, in line with the Berlin Mandate. Its significance also lies in its assertion that future international pledges should be able to include legally binding targets. COP2 decided to hold COP3 in Kyoto in December 1997.

In contemplating future preventative measures against global warming, this COP3 in Kyoto in December 1997 has a tremendous significance. A protocol or other legal document is to be adopted to determine the international action to be taken beyond 2000. This means that COP3 will decide the direction of countermeasures against global warming in the 21st century. Numerous representatives of governments, international organizations, and NGOs will participate. World attention will focus on Kyoto. The conclusions reached in this conference will determine the future of mankind.

Appendix 5: Trends in International Standards for Environmental Management Systems

1. Background to Stipulation of Environmental Management Standards by the ISO

Various environmental problems have arisen in recent years, ranging from global issues, such as global warming, to urban domestic pollution, such as waste disposal and noise. What was needed in order to deal with these problems, it was said, was an earth-friendly lifestyle. Books were published on "how to be friendly to the earth" and "environmental account books" even appeared. It was claimed that a change in lifestyle was necessary so that we may create a society more oriented towards environmental conservation.

Meanwhile, in addition to changing the lifestyles of citizens, the notion that the other major player in society, the corporate sector that undertakes production activities, must also change has been rapidly gaining ground. The belief that the corporate sector must play an active role in dealing with environmental problems is held by the corporate sector itself. In 1991, the International Chamber of Commerce (ICC) drew up a Business Charter for Sustainable Development. The charter indicated 16 principles related to environmental management that are important for businesses to observe in order to achieve sustainable development, and declared that industry itself should take the lead in addressing environmental issues. The Japan Federation of Economic Organizations (Keidanren) issued the Keidanren Global Environment Charter in 1991, and appealed to industry to take a voluntary, active stance in dealing with environmental problems.

Demand for impartial, transparent environmental dealings and environmental cost assessment has been rising along with the globalization of the world economy.

Based on a study of various issues related to sustainable development, the Business Council for Sustainable Development (BCSD) concluded that the determination of international standards would be a most effective method of restraining environmental destruction due to corporate activities to a minimum and minimizing the load imposed on the environment. In May 1992, the council asked the ISO (International Organization for Standardization) to examine the possibility of setting international standards related to the environment.

At present, the ISO has the Technical Committee (TC) 207, with discussions going on under 6 subcommittees headed as follows:- EMS (Environmental Management System), environmental auditing, environmental labeling, environmental performance evaluation, life cycle assessment, and terms and definitions. Of these six areas, in EMS and environmental audit, the United Kingdom and the European Union's actions were ahead of others, and as mentioned above, standards were laid down and took effect in September 1996. With these international standards in place, export related industries at least are being required by their trading partners to obtain certification as one of the conditions of doing business. Thus, on a worldwide scale, especially in electrical industries, there are rapid moves being made to comply with these standards. In Japan, sectors such as automobiles, materials, large-sized chain stores, power generation and construction are hard at work to meet the standards. Some companies have already announced that actions along these lines are preconditions for business.

In order to create an environmental conservation-oriented society and a sustainable

society, a new framework and a new set of rules are steadily being created.

2. What is ISO?

The ISO (International Organization for Standardization), which has investigated the establishment of international standards on environmental management systems, is an international organization set up in 1946 with the aim of creating international standards for the purpose of promoting international exchange in the manufactured product and service sectors. At present, more than 90 countries are members. The ISO's original aim is to develop and standardize technical, manufacturing standards for all types of products. In other words, it is the international counterpart of JIS, the Japanese Industrial Standard.

To put it another way, as international transactions increase and trade expands, if there is no unified agreement on wide-ranging items such as the caliber of small screws, there will be immense trading problems. Thus ISO was born out of necessity. Today, not only industrial standards but many other things are also agreed through the ISO. For instance, the information desks at all the airports of the world bear the "!" mark for easy identification. Great though its influence, however, it must be remembered that the ISO is basically an NGO, and it is an organization that was set up voluntarily by industrial sectors of the world. In this respect, ISO is different from JIS. (However, the possibility of privatizing JIS is now under investigation in Japan.) Finally in Japan, the international standards adopted by the ISO is readopted as part of JIS, virtually in their original form. This is a point of distinction worthy of note.

ISO in recent years has not confined itself to manufactured products but have begun to undertake standardization work in more policymaking areas. The first such move was the establishment of the ISO quality control system standards (ISO 9000 Series). The latest environmental system standards come as the second batch of non-product standards. These are differentiated from general product standards, and are classified as systems standards.

The aim of ISO's establishing international standards for quality control systems was to internationally standardize the quality control system for commercial transactions, which had hitherto differed from country to country, and to ensure that a product is manufactured under an appropriate quality control system approved by a third party organization, even when a product is purchased from abroad.

At first, Japanese companies thought that since the Japanese quality control system was of the world's highest standard, there was no special need for them to obtain this ISO quality control standard and receive certification. In actuality, however, when trying to sell products to European government organizations and related companies, it became necessary for them to be employing a quality control system meeting the ISO standards. Faced with this situation, Japanese companies are now rushing to comply. To do so, they must obtain certification from a third-party organization with the relevant qualification.

What arrived after the quality control system standards is the ISO 14000 Series, now

being drawn up. It is a series of standards relating to environmental management systems of business enterprises. Standards regarding work safety and health are in the pipeline, after due deliberation is completed. All these standards, as with those on quality control systems, require auditing by third-party organizations before certification can be obtained.

The adoption of system standards is aimed at the standardization of quality control systems of the world and the simplification of their inspection so as to promote trade, at the combating of worsening environmental problems by giving companies a framework to systematically direct their effort at environmental conservation so that we may create a sustainable society, and also at the standardization of working conditions in order to improve the employment and welfare of workers.

3. Environmental Management Systems and Corporate Approaches to Environmental Issues

Environmental management in organizations including private companies need to be built on the four pillars listed below. These four pillars constitute the system itself and at the same time, should be considered as major assessment criteria for "evaluating the status of environmental action" of companies. The four pillars are namely:

(1) Construction of environmental management system;
(2) Environmental action being taken by offices, etc.;
(3) Environmental action being taken by each industry; and
(4) Information disclosure and social contribution with respect to environmental action.

(Within the definition of ISO standards, Environmental Management System means (1) only; (2), (3), and (4) are classified under environmental performance.)

When a company or similar organization incorporates into its corporate management system a management system that tackles environmental problems on a organization-wide scale, it is necessary firstly to work out how to construct the entire management system itself. This EMS is not something that can be constructed once and for all and can be forgotten about; it must be systematically operated in an orderly manner and must be continually reviewed. This EMS must create vitality and creative ingenuity in the organization as well as efficiently achieve environmental action.

Secondly, what is important is how to actually set about taking action. No matter how wonderful an EMS may be in place, there will be a problem if its action widely falls short of the level demanded by society or the level expected by consumers. Moreover, even if the range of actions is wide and wonderful, it will be meaningless if there is no clear indication of numerical targets or achievement deadlines. An empty shell of a program is no use at all. The actions to be actually implemented can be divided roughly into two, those that are common to businesses in their operations in offices, etc., and those that are carried out by each industry. Examples of the former would be measures taken in offices, automobile usage, and resources conservation, and includes the purchase and use of goods and services, construction and management of buildings, personnel training, and other activities that companies undertake as individual consumer entities. The latter would be, if it is a manufacturing industry, the purchase of raw materials and fuel, resources

and energy conservation in manufacturing processes, reduction of waste materials, environmental consideration in product design, and collection and recycling of used products.

Thirdly, it is important to widely disclose information about the actions taken on environmental issues like those listed above. Not only the company but individual employees must partake in activities that make social contributions in the environmental domain. It is no longer sufficient merely for the company to be doing things "properly." Then, information must be given on what kind of action with what aims are being implemented in what way and with what results. Were the initial targets achieved? If so, what were these targets, and if not, what was the reason for this failure, and what improvements are to be made? All these things need to be clearly conveyed to the consumer. Information must be accurately provided. Then, the disclosed information must be compared with that from other businesses and other industries, and it is important for the company to review in this way its own program with reference to the content and level achieved.

4. Requirements for Environmental Management System

In practical terms, how should a company embark on constructing its EMS? ISO standards require the following items. A company must construct an EMS in line with these standards and adopt an environmental policy and plan, implement and operate them, check the results and take remedial measures if there are problems, then review the entire system on the management level. This cycle must be in motion continually and efforts at improvement must be made. The suitability of the entire management system developed in this way will be audited by a certification organization. Then the company becomes certified.

In constructing the system, as set out in the requirements, all the responsibilities and authorities of all the staff concerned must be documented and the necessary manuals compiled. Daily records must be kept and stored. Thus a vast amount of labor is expected to be required for the implementation. Including the cost of certification, it is thought that the EMS will put a large burden on small and medium-sized enterprises.

Environmental Management Systems as Specified by the ISO

- ○ Environmental policy
- ○ Planning
  - • Environmental aspects
  - • Legal and other requirements
  - • Objectives and targets
  - • Environmental management programme(s)
- ○ Implementation and operation
  - • Structure and responsibility
  - • Training, awareness and competence
  - • Communication
  - • Environmental management system documentation

- Document control
- Operational control
- Emergency preparedness and response

○ Checking and corrective action
- Monitoring and measurement
- Nonconformance and corrective and preventive action
- Records
- Environmental management system audit

○ Management review
- Management review

There are five basic pillars to an Environmental Management System:
(1) Adoption of a management policy concerning environmental action;
(2) Having determined and assessed the environmental burden posed, setting of targets and drafting of an action plan concerning the company's environmental action;
(3) Construction of an organization and system concerning environmental action, operating these optimally;
(4) Self-assessment of results of environmental actions and review of policy, targets, plan, organization and system; and
(5) Review of all of the items (1) to (4) above by top management, aimed at making continual improvement on an organization-wide level.

The above-mentioned ISO's EMS standards were discussed by the world's experts as a set of standards that can be applied to all organizations. They are the world's unique standards agreed on by experts. To construct an EMS following the requirements of these standards is very useful for the business operator in terms of effectively operating environmental management. It is hoped that many businesses will construct their EMS in line with the ISO standards and take active initiatives in environmental management. As it is possible for a trading partner to require proof that there is an in-house EMS in place, a framework is now being created for a third party to vet and certify that an in-house system is in place in compliance with international standards.

To support efforts by companies that cannot immediately comply with the ISO standards, such as small-scale enterprises, Japan's Environment Agency has established an "Environmental Activities Evaluation Program." The environmental action assessment program is neither a guideline or a manual for the ISO standards on EMS. Still, it serves to facilitate the majority of business operators to "become aware of its involvement with the environment, set targets, and act" in a simple and voluntary manner, and thereby fulfill its duty as a global citizen and undertake concrete environmental action. It shows easy methods of determining the environmental burden arising from business activities and gives a check list of practical actions that will be expected from business concerns for the purpose of environmental conservation. It assists in the planning and promotion of action implementation. Participating in the program, business operators will acquire knowledge and experience which can be utilized in constructing an EMS that complies with the international standards.

The following standards have already been issued as ISO standards, and have been set as

JIS standards (as of March 1997).

ISO Standard No.	Name of Standard	Date of Issue
ISO 14001	Environmental management systems – Specification with guidance for use	September 1, 1996
ISO 14004	Environmental management systems – General guidelines on principles, systems and supporting techniques	September 1, 1996
ISO 14010	Guidelines for environmental auditing – General principles	October 1, 1996
ISO 14011	Guidelines for environmental auditing – Audit procedures – Auditing of environmental management systems	October 1, 1996
ISO 14012	Guidelines for environmental auditing – Qualification criteria for environmental auditors	October 1, 1996

Note: The above ISO standards have also been established as JIS standards. The numbers of the standards are the same; for example, ISO 14001 is numbered JIS Q14001. They were all established as JIS standards on October 20, 1996.

Appendix 6: Reference Documents

(1) In Japanese

・「国別環境情報整備調査報告書（フィリピン）」（1992 年３月、国際協力事業団企画部）
・「フィリピン環境プロファイル」(1993 年３月、海外経済協力基金）
・「発展途上国の環境法－東南・南アジア」（1996 年、アジア経済研究所）
・「アジア環境問題に貢献する企業活動」（1997 年、東京商工会議所）
・「平成５年度発展途上国環境問題総合研究報告書－海外共同研究」（フィリピン）～フィリピンにおける環境意識と公害紛争処理（1994 年３月、アジア経済研究所）
・「平成６年度発展途上国環境問題総合研究報告書－海外共同研究（フィリピン）～フィリピンにおける環境法の適用とその課題」（1995 年３月、アジア経済研究所）
・「アジアの環境の現状と課題～経済協力の視点から見た途上国の環境保全」（1997 年７月、通商産業調査会出版部）

(2) In English

- *Environmental Laws in the Philippines* (1992, Institute of International Legal Studies, University of the Philippines, Law Center、Manila , Philippines)
- *Philippine Environmental Quality Report 1990-1995* (November, 1996, Environmental Management Bureau, Department of Environment & Natural Resources, Manila, Philippines)
- *Metropolitan Manila Management Study* (1995, Housing and Urban Development Coordination Council, Local Government Development Foundation, Manila , Philippines)
- *Cavite-Laguna Urban Development and Environmental Management Study Volume IB Solid Waste Management Sector* (1997, Local Government Development Foundation, Manila , Philippines)