THE FIRST NATIONAL REPORT

UNDER

THE CONVENTION ON BIOLOGICAL DIVERSITY

THE GOVERNMENT OF JAPAN

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Chapter 1 Preface

1.1 Summary of Report

Facing the current status of global environment, we recognize various environmental problems of global scale. We need to make further efforts to cope with such problems for the well-being of both current and future generations.

In such circumstances, under participation of many countries and regions of the world at the United Nations Conference on Environment and Development (Earth Summit) held in June 1992, the Convention on Biological Diversity (hereinafter referred to "CBD") was signed by 157 countries. Since then, biological diversity has been accepted as one of the most important environmental issues in the mainstream.

The humankind, who shares the global environment with other species, depends their existence on biological diversity. In addition, the biological diversity is the source which provides us with various blessings. It is urgent to seek its conservation and sustainable use. We have to tackle it earnestly.

This report includes the contents of National Strategy of Japan on Biological Diversity (hereinafter referred to “National Strategy”) and its execution system, among others, regarding the Annex to the Decision II/17 adopted in the 2nd meeting of the Conference of the Parties to the CBD, and we hereby present it in compliance with Article 26 of the CBD.

The report consists of seven chapters, each of which is briefly described as follows:

In ‘the initial chapter, the recognition of the significance and value of the biological diversity, and the preparation for the enforcement of the CBD are mentioned. In the second chapter, the current status on the biological diversity in Japan, which is the background of the measures relating to the biological diversity, is given as an overview. In accordance with the National Survey on Natural Environment, each of the three levels of the biological diversity is described. The first level is the current state of ecosystem diversity, which consists of the forests, grasslands, wetlands, rivers and lakes, and coastal areas. The second level is the current status of species diversity based on various survey results such as the Red Data Book. The third level is the current status of genetic diversity, of which the knowledge is not yet sufficient. In the third chapter, major legislation, guidelines, and the like which are the basis of measures for the conservation of biological diversity and the sustainable use of its components, the framework of administrative organization for the enforcement of the CBD, the purpose of the National Strategy, its character and subjects and the history of planning and establishing the National Strategy are described. In the fourth chapter, the objectives and the items to be considered of the National Strategy are described as the basic policy for promoting the National Strategy. In the fifth chapter, the preparation for materializing the objectives of the National Strategy and the basic directions of measures for each field, such as the guidelines for executing the National Strategy and the cooperation with various plans are described. In the sixth chapter, the fundamental concepts of measures in respective field and the major measures based on such concepts which promote the conservation of the biological diversity and the sustainable use of its components are described. In the last chapter, the execution system of the National Strategy and the check and review of the National Strategy are described.

Japan seriously recognizes it indispensable to conserve the biological diversity and use it sustainably for the current and future generations as preamble of the CBD stated, and will faithfully promote the execution of the National Strategy that is the fundamental framework for the intended measures.

1.2 Significance and Value of Biological Diversity in Japan

Japanese archipelago consists of various topography and climate conditions and has rich biota corresponding to the variety of habitats. Living organisms are indispensable component of ecosystem on which the humankind depend on for their existence. The existence of diverse biota has a significant role for conserving the sound natural enviromnent of the national land where the nationals

inhabit. The contact with abundant animals and plants as well as natural landscape brings taste and comforts to the life of the nationals. The biological diversity has a significance from the viewpoints of education, culture, recreation, arts, and so on.

Japan has a tradition of sustainable use of biological resources, for example, wetland paddy farming, which has continuously been carried out for two thousands and several hundred years. Nowadays, biological resources and their habitats are utilized for more various purposes, from agriculture, forestry and fisheries, to industrial utilization through biotechnology.

Wildlife and its habitat have irreplaceable value as the resources bringing significant benefit to humankind through various utilization. Especially by the advancement of biotechnology, its potential value as genetic resources have become higher.

On the other hand, in Japan, the natural forests or tidal flats have decreased nationwide because the alteration of natural environment due to development activities has been carried out especially during the era of rapid growth of Japanese economy after the World War Ⅱ. Also, the habitat for wildlife has been deteriorated by the contamination and pollution caused through urbanization, etc. The rare species such as plants have increasingly been over-exploited. Furthermore, the decrease of utilization of products in woody hills nearby cities is threatening the living and growing of wildlife which depends on such environment.

As a result, the existence of many species comes into the threatened status at present in Japan. From the worldwide view, the decrease of species due to deforestation in tropical areas, etc. is prevailing rapidly at the global scale.

The ecosystems in respective regions correlate each other and form the global ecosystem as a whole; therefore, the conservation of the biological diversity shall be executed with keeping such regional or global correlation in mind.

From this viewpoint, promotion of conservation of biological diversity and sustainable use of its components is an extremely important matter for Japan to preserve the possible resources which future generation may enjoy as well as to bear responsibility of Japan from the worldwide perspective.

1.3 Japanese Preparation for the Convention on Biological Diversity

Japan actively participated in negotiations for the preparing of the Convention together with other countries from the planning stage. The CBD was signed by 1.57 countries including Japan at the United Nations Conference on Environment and Development (Earth Summit) held in June 1992 and entered into force on December 1993. Japan concluded it on May 1993 and became its 18th Party.

In parallel to this scheme formation, Japan legislated "the Basic. Environment Law" in 1993; in which we have positioned the "Security of Biological Diversity" as one of the items to be considered in both planning and execution of measures for the conservation of environment. Further, we have provided for the intention to plan and establish the National Strategy based on the CBD in the Basic Environment Plan formulated under the provisions of the Basic Environment Law in December 1994.

Following the entry into force of the CBD, Japan established, "the Inter-ministerial Coordinating Committee to the CBD" among Ministries which enforce various measures relating to the CBD, and got ready for an intra-governmental system to execute the promotion on the conservation of biological diversity and the sustainable use of its components.

Then; the Inter-ministerial Coordinating Committee to the CBD took a role to make a plan of the National Strategy which was adopted in October 1995 at the Council of Ministers for Global Environment Conservation.

At present, various measures based on the National Strategy are being promoted under the leading role of the relevant Ministries and Agencies together with various bodies.

Chapter 2 Background of Measures for Biological Diversity - Present Status of Biological Diversity in Japan -

2.1 Features of Natural Environment

Japan is located at the east end of the Eurasian Continent, is formed as an arcuate islands of around 3000km long with mountains of 3000m-class above sea level, and is occupied by undulatory mountainous areas for around three-fourth of whole national land.

Climate of Japan extends across subtropical through subarctic zones, is temperate and humid, and has clear difference among four seasons due to the influence. of seasonal monsoon wind. Steep topography with mountains and valleys contributes to the variety of climate in Japan, especially the climates in Honshu is distinctively divided by central ridge of mountains.

Japan consists of four main islands and over 3000 small islands and is surrounded by sea; therefore, from the viewpoint of biota, it can be characterized strongly by the insular nature. Among those islands, there are some islands having very unique biota.

Such varied climate and topographical conditions of the Japanese archipelago as well as geological history of repeated contacts with and separations from the Continent during the process of the Japanese archipelago formation have largely influenced making up of the biological diversity in Japan.

2.2 Ecosystem Diversity

Japan continuously undertakes the National Survey on the Natural Environment in order to obtain knowledge of the present status of natural environment nationwide. As a result of the survey, we have made and continuously revised actual vegetation maps (scale 1:50,000) covering the entire national land.

According to the results of the Fourth Survey (1988 to 1992), our national land consists of forests (67.0%), of paddies and fields (22.8%), of grasslands (4.4%), and of urban or developed areas (4.2%). Also, classifying by the degree of artificial influences, the vegetation in Japan consists of the vegetation keeping intact nature (natural forests, etc.), the vegetation receiving artificial influences (secondary forests and secondary grasslands), the planted forests, and the paddies and fields, and urban and developed lands, each of which occupies about one fourth respectively.

Forests]
Forests occupy 67.0% of the national land, and take an important role as a habitat of wildlife. Forests in Japan consist of natural forests (26.9%), of secondary forests including woody hills nearby cities (35.9%), and of remaining of the planted forests such as Japanese Cedar or Japanese Cypress (37.2%).

Natural forests in Japan include various types of forests; coniferous forests or coniferous and broad-leaved mixing forests in the boreal or alpine zone, deciduous broad-leaved forests in the temperate zone, evergreen forests in warm temperate zone or subtropical zone. The large-scale natural forests exist only in Hokkaido region where occupy 59.5% of total natural forests in Japan, and there are some natural forests of nearly the same scale in the mountain sides of the Northeastern and Central region of Honshu and in the Southwest Islands. In other parts of Japan, natural forests are only remaining distributed in alpine areas or solitary islands as smaller scale and fragmentarily.

Secondary forests are located near human habitation and have been utilized for production of wood used as firewood or charcoal and gathering of fallen leaves, etc. At the same time, they have taken a role as the habitats of various animals and plants which depend on such environment.

Recent state of the forest area in Japan has been decreasing only slightly as a whole. Detailed data show that the secondary and natural forests have been decreasing and the planted forests have been slightly increasing. There are also some secondary. forests that the vegetation succession has proceeded due to the decrease of human intervention and the various conditions which have been conserved through human activities such as gathering fuel are being diminished in such forests.

[Grasslands]
Grasslands occupy only 4.4% of the whole

vegetation in Japan. But it is scattering nationwide in the mountain side as pastures, grazing lands, and so on. Grasslands are important as the habitats for wildlife which are peculiar to grasslands such as the continental relic species.

However, recently, due to the decline of grassland utilization caused by various factors such as the difficulty to keep human activities like weed burning to maintain its vegetation, succession has been proceeding, and a rapid decline of those species depending on grasslands is feared.

wetlands]
Though wetlands occupy very small percentages of the whole vegetation in Japan, there are important ecosystem as the habitats for wildlife. The wetlands in Japan are basically categorized into two types: one is the moorland mainly composed of aquatic mosses cultivated only by rainfall, and the other is the moorland mainly composed of ditch reeds and is distributed in the middle and lower reaches of rivers. These moorlands are distributed in the wide regions from Hokkaido to Okinawa. The latter type of moorlands have been affected by human activities such as development because those are adjacent to the living sphere of people.

[Rivers and **Lakes]**
In rivers and lakes, ecosystems are formed with the combination of the water areas, riverside and lakeside. Those have an important role as the habitats not only for aquatic species such as fish but also for vegetation peculiar to riverside and small animals or aquatic birds, which depend on such vegetation.

On the other hand, land has been utilized very densely in Japan, many rivers have suffered modification of their environment caused by human activities. According to the survey of artificial modification of shore lines of rivers from the river-mouth up to the end of upper reaches for main streams of 113 rivers such as the main streams of the lst-class rivers (total 11,412km long) under the Third National Survey (1985), the artificial structure of shore lines was 21.4%. Also, according to the survey of artificial modification for 153 rivers such as the major 2nd-class rivers and the tributary streams of the lst-class rivers flowing through the areas of good natural condition (total 6,249km long) under the Fourth National Survey (1992), the artificial structure of shore lines was 26.6%. Regarding the status of the swimming conditions for fishes, fishes were able to swim up to the most upper reaches in the 27 of 74 main streams, or to swim up to over 80% of total length in the 37 streams under that survey. And also within 50 of 79 tributary streams where the upstream-swimming has been recognized, fishes were' able to swim from the river-mouth of main stream up to the most upper reaches in 7 rivers, or to swim over 80% of total length from the river-mouth in 22 rivers.

Similarly, at the brooks and waterways in the plains, disappearance or fragmentation of the habitats for aquatic species are found due to separation from the main streams by installing dams or artificiality of waterways by installing structures.

[Coastal **Areas]**
Natural coast maintaining the natural intertidal zones, are important as the habitat or the cradles for reproduction of wildlife. In Japan, however, coastlines have been artificially modified mainly in the era of rapid growth of Japanese economy. According to the results of the National Survey of 1993, 38.0% of the 19,134km coastlines of four main islands were artificial coastlines, which have been installed with structures for shore protection at the intertidal zones. Also, the decrease of natural coastlines is continuing.

The tidal flats are the environment where the benthos are especially abundant in the coastal areas and serve important habitat for various coastal fishes and migratory birds such as snipes or plovers. **In** Japan, many of tidal flats are located along inland seas and inner bays where a high concentration of population and economic activities are evident. Thus, the tidal flats are disappearing due to development projects such as reclamation or other reasons. According to the results of the National Survey undertaken between 1989 and 1991, the existing tidal flats in Japan were 51,433ha and the area of 3,857ha has been disappeared since 1978.

In the Southwestern Islands of Japan, the coral reefs mainly composed of fringing reefs have been growing. Although the coral reefs in Japan are on the northern limit of coral reef distribution in the world, the hermatypic corals keep high diversity

under the blessing of the warm Kuroshio Current along the Pacific Ocean side of Japan.

However, in the sea areas of the Southwestern Islands, the habitats of corals degraded due to the damage caused by the predation of crown starfish and sedimentation of red clay. They haven't been restored except some cases. According to the results of the National Survey on coral reefs undertaken for three years from 1989 within coral reefs in the sea areas of the Southwestern Islands, coral communities in sound living condition was observed only in 8% of the area where corals are originally capable of inhabiting.

2.3 Species Diversity

In Japan, many kinds of animals and plants such as 188 species of mammals (number including subspecies hereinafter), 665 species of birds, 97 species of reptiles, 64 species of amphibia, and 7,087 species of vascular plants and so forth are inhabiting, which means that there is rich biota in this rather narrower land. Further, those fauna and flora include many endemic species. For example, about 35% of gymnosperms plants and angiosperms are native species.

Such biota in Japan was formed by the various topographical and climate conditions as well as the history of repeated contacts with and separations from the Continent during the process of the formation of the Japanese archipelago, and such rich conditions had been kept through long history of Japan up to the modem times. However, since the process for modernization has started, especially after the World War Ⅱ, the natural environment in the national land has been rapidly changed, due to the disappearance of habitat for wildlife caused by the development in the era of rapid growth of Japanese economy and deterioration of habitats due to its subdivision or pollution. Also, because of over exploitation of rare animals or plants among others, the existence of many species is threatened in Japan at present.

In 1991, the Environment Agency of Japan issued the Red Data Book of Japan for animals. Since then, it is being reviewed as every taxonomical groups, and the review of the Red List for amphibia and reptiles (list of species as a basis for the Red Data Book) was completed in August, 1997. Also, regarding the plants, the Environment Agency arranged its Red List in August, 1997. According to these, about 7% of mammals, about 8% of birds, about 19% of reptiles, about 22% of amphibia, 11% of brackish and freshwater fishes are listed up as threatened species, and about 20% of vascular plants species are deemed as similarly threatened.

Also, regarding the diversity of entire species in Japan, there still remain not small fields where the whole images are not yet clear. For example, it is estimated that the insects has 70,000 to 100,000 species but the named species are only about 30,000. Also, it is difficult to know the distribution of each species over the entire national land, since there still remain areas where no information is available. Therefore, it becomes urgent matter to prepare the basic information for grasping the current status of the biological diversity.

2.4 Genetic Diversity

All species have genetic diversity within respective species; therefore the conservation of diversity at genetic level is important issue to conserve the biological diversity. To conserve the genetic diversity within species, it is important to promote the conservation of local populations which are groups within the same species separated geographically by islands or water systems.

According to the Red Data Book (1991) issued by the Environment Agency, at present, the existence is highly threatened for 32 local populations such as mammals, amphibias, freshwater fishes or snails in Japan.

Also, generic disturbance of local populations is being widely observed by artificial transportation or introduction of individuals to other populations. There is a concern that the genetic diversity kept in respective regions may disappear.

In Japan, the current status of structure and disturbance for genetic diversity of wildlife has not sufficiently been grasped. Exact grasping of current status and extracting of problems has become urgent matters, taking into account the disappearing of many local populations.

Chapter 3 Basis of Measures for Conservation and Sustainable Use

3.1 Major Legislation or Guidelines Concerned

One of the purposes for planning the National Strategy is to promote relevant measures and organize mutual cooperation. In Japan, there are many existing law systems relating to the conservation of biological diversity and its sustainable use and various measures are being executed based on them. For example, there are the Basic Environmental Law regarding comprehensively and systematically promoting of policies for environmental conservation, the Nature Conservation Law regarding comprehensive promotion of natural environment conservation, the Natural Parks Law regarding conservation and utilization of natural parks, the Law for the Conservation of Endangered Species of Wild Fauna and Flora as well as the Law for the Protection of Birds and Mammals and Hunting regarding protection of wild animals and plants and appropriation of hunting, the Law for the Protection of Culture Properties regarding designation, preservation and management of natural monuments, the Forest Law and the Forestry Basic Law regarding conservation and utilization of forests, the Fishery Law and the Preservation of Fisheries Resources Law regarding conservation and utilization of aquatic life, the Urban Green Space Conservation Law regarding conservation and creation of green spaces in urban areas and the City Parks Law regarding installation and management of urban parks.

Also, along with these laws, the Basic Environment Plan, the Basic Policy for Natural Environment Conservation, the Basic Policy for Rare Wild Animals and Plants Species Conservation and the Basic Plan for Forest Resources have been formulated. All of these are national basic policies or plans closely relating to the conservation of biological diversity and the sustainable use of its components.

3.2 Organizational Framework for Promoting of Measures

For the purpose of promoting the execution of the CBD, the Inter-ministerial Coordinating Committee to the CBD was established in January 1994. This Committee consists of the Director-Generals and equivalents. of Ministries and Agencies especially relating to the conservation of biological diversity and the sustainable use of its components. The chairman is the Head of Nature Conservation Bureau of the Environment Agency. The member of Ministries and Agencies as of July 1997 are the Environment Agency, the Ministry of Foreign Affairs, the Cabinet Department of Domestic Consultation, the Science and Technology Agency, the Ministry of Finance, the Ministry of Education, the Ministry of Health and Welfare, the Ministry of Agriculture, Forestry and Fisheries, the Ministry of International Trade and Industry, the Ministry of Transport, the Ministry of Construction, and the National Land Agency, i.e. total 12 Ministries and Agencies. Drafting work of the National Strategy and related public hearings were performed mainly by this Committee. From now, this organization intends to check the current status for respective measures exercised based mainly on the National Strategy.

3.3 Development of the National Strategy

3.3.1 Purpose of Developing the National Strategy

On the earth, 3 million to 30 million or more species are living and growing, which form the diverse ecosystem. Such ecosystem is the base for the existence of humankind, and also provides various kinds of indispensable blessing for . human. At present, there is a fear for remarkable and worldwide decrease of biological diversity due to human activities. Its conservation has become an emerging issue to be handled through international cooperation for protecting global environment.

As stated above, Japan is blessed with natural environment of much variety and diverse kinds of wildlife. On the other hand, decrease or disappearance of habitat for wildlife has been prevailing due to the development, and the existence of many species is being threatened. It is our responsibility under the CBD to certainly preserve the fertility of Japanese biological diversity for future, which, at the same time, contributes to the

conservation of biological diversity around the world and the sustainable use of its components.

Japan concluded the CBD in 1993 and then execute the activities to promote the conservation of biological diversity and the sustainable use of its components.

In Japan, the measures relating to the conservation of biological diversity and the sustainable use of its components are under the jurisdiction of various organizations of the Government. Not only national government but also other wide-spread entities such as local public entities, enterprises and private organizations are executing related activities as well.

Therefore, to efficiently execute various activities based on the CBD in Japan, it is firstly necessary for respective national governmental organizations to comprehensively and systematically promote those measures under mutual cooperation. It is also important for not only national government but also local public entities, enterprises and each of the nationals to act with mutual cooperation under common -recognition for the conservation of biological diversity and the sustainable use of its components.

For this purpose, it is indispensable for Japanese Government to make clear the basic policy for handling this issue and the basic directions of developing the measures in respective fields. Therefore, Japanese Government has developed the National Strategy subject to Article 6 of the CBD. Based on this, Japanese Government decided to encourage the promotion of related measures and organized mutual cooperation by relevant Ministries and Agencies to deepen the interest and understanding of individual national to the conservation of biological diversity, and to encourage entities such as local ‘public entities, enterprises and private organizations other than the state organization for related activities.

3.3.2 Character and Target of the National Strategy

The National Strategy was made by systematically gathering various related measures from the viewpoint of the conservation of biological diversity and the sustainable use of its components based on the CBD. It also shows Japanese basic policy for handling this issue and basic direction of developing the measures in future in respective fields. It constitutes the basic framework of policy for comprehensively and systematically executing activities based on the CBD under cooperation among relevant Ministries and Agencies.

The National Strategy basically covers governmental measures relating to the conservation of biological diversity and the sustainable use of its components. In addition, it clearly introduces the direction for cooperation and support for respective entities such as local public entities or private organizations in order to promote the activities of these entities.

3.3.3 History of Planning and Development of the National Strategy

The planning and development National Strategy was carry out by the Inter-ministerial Coordinating Committee to the CBD as a main body.

The Committee commenced the drafting of the first text in February 1995, and the original draft was finalized at the end of July through adjustments by relevant Ministries and Agencies. The original draft was made known to the public and the public hearing was held. After reviewing the proposed 230 opinions from the public, the original draft was revised and’ the final draft was adopted by the Council of’ Ministers for Global Environment Conservation held on 31 October 1995.

Chapter 4 Basic Policy for the Conservation of Biological Diversity and Sustainable Use of Its Components in the National Strategy

4.1 Objectives and Achievement Schedule of the National Strategy

In Part *2* of the National Strategy, entitled Basic Policy, the following two points are listed as the long-term objectives. Also, the target date for achieving these long-term objectives is middle of the 21st century.

i. At the nationwide level as well as respective typical biogeographic regions, various ecosystem and animals and plants shall be conserved and sustainably utilized.

ii. The various mutual relations among wildlife including possibility of future changes shall be conserved, and relatively larger areas shall be properly managed as protected areas as well as mutually and organically inter-connected.

In addition, the following three points are listed as current objectives accomplishing the long-term objectives.

i. Any fear of extinction shall not occur on animals and plants living and growing in Japan.

ii. The regions important for the conservation of biological diversity shall be properly conserved.

iii. The components of the biological diversity shall be used in a sustainable manner.

Also, because the conservation of biological diversity and the sustainable use of its components are the agenda for coping with in a global scale, when the activities toward these objectives are executed, not only domestic activities but also international activities which utilize our unique skill. under international cooperation with other countries shall be actively undertaken.

4.2 Matters for Consideration

In Part 2 of the National Strategy, entitled Basic Policy, the following items are listed as items to be considered for the conservation of biological diversity and the sustainable use of its components.

[Conservation of Biological Diversity]
Upon requirement of conserving the biological diversity, we should implement the activities suitable for the characteristics of each region's natural environment because it is necessary to take different measures such as exclusion of artificiality, maintenance of artificiality, or positive, reproduction or creation of habitat, in order to correspond to properties of natural environment in such respective regions where nature is highly preserved, where secondary nature mainly exists or where nature is largely altered.

Lacking scientific knowledge and information shall be supplemented as much as possible in undertaking the activities for conservation of biological diversity.

[Sustainable Use of Components of Biological Diversity]
When the sustainable use of components of the biological diversity is executed, it is necessary to precisely grasp whether the utilization pressure (degree of utilization) is within the capacity limit of natural reproducibility. Scientific knowledge for that purpose should be accumulated. Also, if any unknown portion exists, it shall be executed with sufficient margin.

The traditional way of utilization shall be properly assessed, and such new technologies such as biotechnology should be used in an environmentally sound manner.

[Items Common to Both Conservation and Sustainable Use]
As it is required to execute with fine care of the conservation of biological diversity and of the sustainable use of its components so as to meet the natural and social characteristics of the regions, it is necessary to study the development of plan at regional level as well.

Because various measures relating to the conservation of biological diversity and the sustainable use of its components are mutually and closely related each other, it is necessary to comprehensively and deliberately execute them through systematic implementation.

Because the status of the conservation of biological diversity and the sustainable use of its components affects every aspects of social and economic life of nationals, respective entities should actively and voluntarily participate in the conservation and the sustainable use of them.

Taking account of the fact that Japanese economic activities could largely influence the biological diversity of the world, it is necessary to make efforts not to cause adverse effects, and also to promote international cooperation for the conservation of the biological diversity and the sustainable use of its components of the world.

Chapter 5 Preparation of Guidelines or Indexes for Implementation of the National Strategy, Cooperation with Various Plans Related to Implementation of the National. Strategy, and Support and Cooperation with Local Level for Activities

In order to promote respective measures based on the National Strategy, it is necessary to prepare guidelines and indexes further materializing the objectives and the basic directions of measures in respective fields listed in the National Strategy.

For materializing of the conservation and sustainable use of various ecosystems and animals and plants in each of typical biogeographical regions shown in the long-term objectives, it is necessary at first to establish the biogeographical regions of entire land of Japan, then identify the typical ecosystems in respective regions and make clear the guidelines for their conservation. A study is being done from this viewpoint at present.

Also, when the conservation of habitat or ecosystems is executed, an assessment of the biological diversity is required for relevant regions. Now, a study is being made to establish the assessment method for the current status of biological diversity at the local level.

With regard to promotion of the conservation of biological diversity and the sustainable use of its components based on the National Strategy, it is important to harmonize the basic directions of various national plans relating to the conservation of biological diversity' and the sustainable use of its components with the National Strategy, and to enforce those plans hand in hand with the National Strategy.

In these respects, viewpoint from the conservation of biological diversity and the sustainable use of its components is being reflected in the National Land Use Plan providing the basic policy for national land use, in the Basic Plan for Forest Resources directing the long-term management of forest resources in Japan, and in 5-year Plan for Coast Projects, among others.

Furthermore, so as to promote the conservation of biological diversity and the sustainable use of its components, it is important to practice such activities at the local level. The guidelines for promoting the regional program for the conservation of biological diversity are being formulated.

Chapter 6 Guidelines for Execution of Measures

. In Part 3 of the National Strategy, basic directions for the respective governmental organizations to execute the measures relating to the conservation of biological diversity and the sustainable use of its components in future are described for major fields of measures.

The outline of the directions and relevant activities relating to the conservation of biological diversity and the sustainable use of its components in Japan is as follows.

6.1 Establishment and Management of Protected Areas

The basis of the conservation of biological diversity is in-situ conservation, which is the conservation of wildlife in their natural habitat. The primary measure for the conservation is to designate them as protected areas. In Japan, based on various laws and regulations relating to the conservation of natural environment, various protected areas are designated from each particular purpose, and development activities are controlled as shown below.

It is intended to properly manage these protected areas with the viewpoint for conserving biological diversity. Conserving the biological diversity by taking account of the correlation among the protected areas, such as the continuity of habitats for wild animals, is also intended.

There are some protected areas in Japan which do not have sufficient areas for conserving their ecosystems. At the same time large-scale development in the area surrounding protected ecosystems such as marshland (areas of mainly the upper reaches) may cause significant influence. In developing the property which may cause influence to the protected areas nearby, it is necessary to adopt proper way under the understanding and cooperation of people concerned.

The current status of major protected areas systems and future directions of the related policies are shown below;

#Wilderness Areas, Nature Conservation **Areas** Based on the **Nature Conservation Law**

This is to designate the areas having excellent natural environment such as intact nature, alpine vegetation and valuable natural forests. In the designated areas, activities such as construction of stmctures or felling of trees are strictly restricted. Within these, 5 Wilderness Areas and 10 Nature Conservation Areas have been designated as national ones, total about 27,200ha. At the prefectural level, the Prefectural Nature Conservation Areas are designated based on their ordinances. 517 places, about 73,500ha, are designated. (as of March 1997)

It is intended to study continuously for designating these protected areas to secure the diversity of ecosystems nationwide.

#National Parks, Quasi-National Parks Based on the Natural Parks Law

This is to designate excellent natural landscapes which represent Japan or are close to such level, for conserving of those landscapes and promoting its use. In those areas, wildlife and their habitat are treated as the element of natural landscape. For the purpose of protecting them, various activities such as construction of structures or felling of trees are restricted. At present, 28 National .Parks and 55 Quasi-National Parks are designated and the total area is about 3,390,000ha. Also, the Prefectural Natural Parks are designated under the ordinances. (as of March 1997)

Natural Parks consisting of the National and Quasi-National Parks and the Prefectural Natural Parks, are diverse including various ecosystems from the subarctic to subtropical zones or from the alpine zone to mangrove forests and coral reefs, characterizing of each park. The Natural Parks cover ‘14.1% of the national land area.

For the National and Quasi-National Parks, it is intended to periodically review and assess the park areas and park plans and conserve the biological diversity through constructing facilities or providing information for contacting with nature, and promoting their utilization.

#Natural Habitat Conservation Areas Based on the Law for the Conservation of Endangered Species of Wild Fauna and Flora

In order to protect national designated endangered species, their habitat of native species to Japan are designated as these areas. In the areas, activities such as construction of structures or felling of trees are restricted. 5 areas, total of about 260ha, have been designated for habitats of 4 species. (as of March 1997)

Establishment of Natural Habitat Conservation Areas will continuously be promoted in the future to conserve those species, currently in danger of extinction by fully taking account of coexistence with agriculture, forestry and fisheries. The importance of species should be promoted at the same time.

#Wildlife Protection Areas Based on the Law for the Protection of Birds and Mammals and Hunting

The areas are designated to, protect birds and mammals (with some exceptions) including such areas as Habitat for Forest Birds and Mammals, Habitat for Large-scale Frocks of Migratory Birds, Birds Breeding Habitat. In these areas, capturing and hunting are prohibited, and in Special Protection Zones designated within these areas, activities such as construction of structures or felling of trees are also restricted. The total area of National Wildlife Protection Areas is about 484,000ha and, within these areas, the area of Special Protection Zones is about 112,000ha. The total area of Prefectural Wildlife Protection Areas is about 2,923,000ha and, within these areas, the area of Special Protection Zones is about 145,000ha. (as of March 1997)

Establishment of Wildlife Protection Areas will be continuously promoted in the future. For establishing such areas, appropriate distribution taking into account the mobility of migratory birds as well as the maintenance of habitats for various type of birds and mammals should be intended.

#Natural Monuments Based on the Law for the Protection of Culture Properties

The objective of this designation is to conserve the nature with high scientific value and to commemorate the nature rich in diversity as well as contributive- to cultural developments. The designated items are 959 including those with designated areas which are about 370,000ha in total. (as of *September 1997)

As for natural monuments, the conservation of their habitats through protection management are being executed. It is intended to systematically designate new items in the future and implement their appropriate protection management by taking account of comprehensive conservation of species in Japan.

#Nature Conservation Forests Based on the Categorization of Forest Functions in National Forests

The National Forests which cover about 30% of total forest area, are categorized into four types by their principal function; i.e. Land Conservation Forest, Nature Conservation Forest, Recreation and Welfare Forest and Timber Production Forest, and the appropriate management suitable for each forest function is performed. And, management priority of Nature Conservation Forest is given to conservation of natural environment leaning as they are, in principle, without any forestry work. About 19% of the total national forests, about 1,410,000ha, are designated as the Nature Conservation Forest. (as of April 1997)

#Protected Forests

Among Nature Conservation Forest mentioned above, those that have especially important role in the protection of natural environment are designated as Protected Forests in accordance with the National Forest Management Bylaw and the Guidelines for Establishing Protected Forests, and intensive efforts are made to conserve natural environment. Protected Forests are classified into seven categories in accordance with the objectives of protection, i.e. Forest Biosphere Reserve, Forest Genetic Resource Reserve, etc. and total about 490,000ha are designated (as of April, 1997). Establishment of Protected Forests will be continuously promoted in the future.

#Protected Waters Based on the Fishery Resources Protection Law

Aquatic areas suitable for breeding of fishery animals, growing of fry, etc. are designated as Protect Waters by the state, totally 2,200km long of rivers, 240ha of lakes and 3,000ha of sea surface. (as of April 1997)

Also in the future, it is intended to positively designate aquatic areas, which are required to be

protected or cultivated for fishery animals and plants as Protected Waters.

#Protected Areas Registered or Authorized in Accordance with International Treaty or Other International Measures

World Heritage (Natural Heritage)

Shiragami-sanchi and Yakushima are listed in the World Heritage List and total area is about 28,000ha. (as of April 1997)

Wetlands Registered in the Ramsar List'of the Ramsar Convention

Ten areas, such as Kushiro-shitsugen, Izu-numa and Uchinuma, and Biwa-ko have been registered and total area is about 83,500ha. (as of April 1997)

UNESCO Biosphere Reserves Areas

Four areas of Yakushima, Oodaigahara and Mt.Oomine, Mt. Hakusan and Shiga Highland have been designated as Biosphere Reserves and total area is about 116,000ha. (as of April 1997)

The conservation of habitats for wildlife in above-mentioned areas is executed in connection with various protected areas systems such as Nature Conservation Areas, National Parks, National Wildlife Protection Areas, Protected Forests or Natural Monuments.

6.2 Conservation of Biological Diversity Suitable to Characteristics of National Land Space

It is desirable to conserve ecosystems and habitats as much as possible throughout nationwide for conservation of the biological diversity. And proper conservation measures for ecosystems and natural habitats other than protected areas corresponding to characteristics of land space are also important.

From this viewpoint, each development projects and other industrial activities are required full consideration to the biological diversity at the each stages of planning and implementation.

Furthermore, by assessing various ecosystems and habitats from the viewpoint of conserving the biological diversity and then making it public, the biological diversity in ecosystems and habitats is expected to be conserved properly.

Above all the natural environment, secondary natural environment such as secondary forests, paddies and fields, etc. which have been brought about through the relationship between human and nature, and which comprise about 75% of whole vegetation, is the component that characterizes the nature setting in Japan. These secondary natural environment made up a variety of habitat such. as wetland paddies, irrigation channels, copses and irrigation ponds. And they have had an important role for the diversifying biota providing various type of habitat to many kinds of animals and plants relying on those environment.

However, these secondary natural environment are gradually disappearing owing to the development of golf courses or residential lands from vicinities of urban areas. Also, diverse environment of copses are being lost by insufficient use due to changes of farming system among others. As a result, many species which used to be commonly observed like giant water bugs (*Lethocelus deyrollei*) or pasqueflowers (*Pulsatilla cernua*), have been sharply decreased in number nationwide and become rare ones.

In order to promote the conservation of biological diversity in Japan, conserving these secondary nature properly has become important issue by taking account of natural and social properties of regions.

Since the population of Japan is concentrated in urban areas, it is important to conserve the biological diversity in such urban areas in which they spend their life. In the urban areas, the habitats for wildlife such as green areas or water fronts have been decreasing and being fragmented. In those areas, it is necessary to conserve the remaining nature, to create the habitats positively, and to make them into ecological network.

Based on the recognition stated above, the Japanese government protects and conserves major types of ecosystem in such ways as shown below;

Forests]

The forests themselves are terrestrial ecosystems important as' habitats for wildlife, and also they have

an important role such as supplying nourishment for the conservation and production of aquatic life in coastal areas.

To meet various demands of the people made on forests as environment assets, it is important to promote the management of diverse and rich forests while focusing on their ecosystems.

For this purpose, the conservation of important forests for the biological diversity are proceeding under various protected areas systems. In others, forests necessary for protection of precious animals and plants are designated and appropriate forestry operations are implemented for protection of those forests under the Regional Forest Plans based on the Forest Law. Especially the forests which have great public benefit are designated as Protection Forests based on the Forest Protection System, which comprise about one third of the whole forest areas, and various regulations are underway to enhance such functions. Furthermore in those of other forests the efforts based on the Forest-Land Development Control System are being made to prevent disorderly development.

In the National Forests, appropriate forestry operations taking account of maintenance and formation of natural environment are to be promoted, and the efforts are being made for protection of ecosystems and habitats for wildlife by monitoring the current status of forests with patrol.

Also, the artificial forests and, in particular, the secondary forests which are formed by natural restoration and have rich ecosystem with various species of trees, are to be conserved and maintained corresponding to the status of forests.

wetlands]

Wetlands, such as lakes, marshes and tidal flats form the unique ecosystems where various animals and plants live and are especially important for waterbirds. On the other hand, in Japan, most of these wetlands are located near residential areas. Therefore, wetland conservation has had highly priority to protect and manage the biological diversity since wetlands has been easily affected by human activities.

As the countermeasure, establishment of more protected areas have been promoted in order to maintain ecosystems of the wetlands. Additionally, internationally important wetlands have been registered into the Ramsar List of the Ramsar Convention while appropriate management of the wetlands are investigated.

[Rivers]

Rivers are habitats for various aquatic life and also are places for various vegetation such as ditch reeds or willows and habitats for small animals such as insects depending on such vegetation; the regional biota has been made fertile by them.

Therefore, from the viewpoint of taking care of the habitats, following measures have been taken; periodical and systematic surveys of living and growing status of animals and plants are being performed, the basic plans for conservation, preparation and management of river environment such as zoning of precious nature are being developed, and the river formation such as preservation and restoration of deep pools in respect of structural variety of natural rivers and preserve various environment originally existing in rivers are being promoted.

Also, regarding dammed lakes, the installation projects of biotope and fishways for maintaining good habitat for wildlife are being performed and the projects which takes care of ecosystems such as restoring of ecosystems in denuded torrents, formation of breeding places for maintaining and creating good habitats for fishes or preparation of fishways are to be enforced.

The "Preparation and Conservation of River Environment" had been provided, as the additional purpose in the River Act (amended on July 1997), and the river projects are to be performed under harmonization with environment also in future.

[Coastal Areas]

The shores and shallow seas among the coastal areas are the environment where biological productions are especially active. Especially in the tidal flats, seaweed beds and coral reefs, various animals and plants such as benthos or fishes are living and growing. Also, the tidal flats and shores are important places for snipes, plovers, etc. and also have important function for water purification.

In the shores of Japan, artificial alterations such as reclamation are being prevailed and, therefore, the ecosystems and habitats such as tidal flats, shores, etc. are intended to properly be preserved. Also, in the coastal areas where the artificiality has been already carried out, it is important to promote the restoration of environment be capable of living and growing for various wildlife.

Therefore, when the fishing ports and harbors are prepared, various activities useful for conservation of coastal ecosystems, such as securing of exchange and purification function of sea water and of functions as the habitats for marine wildlife or of preservation and restoration of seaweed beds, tidal flats, etc. in the periphery, are to be performed. Also, at the harbors, measures for creating suitable coastal environment such as the development of harbor environment plans, dredging of sludge, sand-turning or preparation of artificial shores are to be executed.

[Secondary Natural Environments in Rural Areas]

The traditional rural areas of Japan are made up of a variety of environment such as residential forests, hedges, irrigation channels and ponds, providing various types of habitats adaptable to them. Especially, wetland paddies fields have the aspects as habitats of some migratory birds and various aquatic life.

Based on such recognition, in the case of establishing, maintainiig and managing agricultural facilities, it is promoted to attend to the conservation of ecosystems and habitats for rare wild animals and plants living in the agricultural facilities, and to make projects devoting themselves to the conservation of biotopes of wildlife in the spaces such as irrigation ponds. Also, the Sustainable Agriculture which helps to save chemical fertilizer or pesticides is to be promoted.

[Urban Areas]

In the urban areas where the natural environment has been decreased, it is necessary to conserve and restore the biological diversity, by conserving present green spaces, establishing habitats for wildlife (biotopes), and forming them into ecological network.

For this purpose, the green spaces which are forming good natural environment in urban areas should be conserved as present condition, by designating them as Conservation Area of Urban Green Space or the Special Suburban Green Zone Conservation Area based on laws and regulations such as Urban Greenspace Conservation Law. About 3,900ha are designated as those areas all over Japan (as of March 1997). Urban parks are the primary facilities as permanent green space in urban area. The establishment of urban forests for reserving forests in urban area, and the parks for securing habitats 'for wildlife and providing fields for environmental education, should be promoted. Also, improvement of rivers, channels, parks and green spaces in urban area should be executed with tight relation to form ecological network.

In order to comprehensively promote the activities mentioned above, formulating master plans concerning conservation and establishment of green spaces are being executed in municipalities all over Japan.

6.3 Protection and Management of Wildlife in Japan

The Japanese archipelago locates at the eastern end of the Asia Continent has various species of wildlife in spite of relatively narrow national land, because island chain has been repeatedly 'contacted with and separated from the Continent many times since the Pleistocene and the topography and climates are widely varied.

However, many wildlife species have been currently in danger of extinction due to loss or degradation of their habitats and the overexploitation under the nationwide development particularly after World War II. Therefore, protection of threatened wildlife species is urgent task in Japan.

In order to maintain the entire biological diversity in Japan, comprehensive protection measures for various wildlife including not only threatened species but also common species which can be found there is necessary for each region of the country.

In Japan, under such recognition, following measures concerning wildlife protection have been taken;

#Conservation of Endangered **Species of Wild** Fauna and Flora

Based on the Law for the Conservation of Endangered Species of Wild Fauna and Flora, 53 species such as Iriomote wild cat, Japanese crested ibis, Short-tailed albatrosse, Miyako bitterling, Bekkou dragonfly, **Rebun** lady-slippers, have been designated as the national endangered species of wild fauna and flora (as of September 1997) and hunting, transfer and the like of their individuals are restricted. Their habitats has been designated as Natural Habitat Conservation Areas to conserve the environment of habitats.

Furthermore, for these species, Programmes for Rehabilitation of Natural Habitats and Maintenance of Viable Populations have been formulated to promote maintenance and improvement of their habitats and breeding of individuals. Up to now, the programmes for such wildlife as **Iriomote** wild cat, Japanese crested ibis, Japanese crane, Short-tailed albatrosses or Blakistons fish-owls, have been formulated. The programmes such as feeding, installation of nest boxes, introduction to new nesting places, breeding, have been executed.

In future, such species recognized as under the threat of . extinction by deteriorating their habitats, will continuously be designated as the National Endangered Species of Wild Fauna and Flora under the Law for the Conservation of Endangered Species of Wild Fauna and Flora.

##Protection **and** Management of Birds and Mammals

Mammals and birds living in Japan, except some mammals, are' subject to the protection under the Law for the Protection of Birds and Mammals and Hunting. And the **Law** allowed only 47 species for hunting. Regarding hunting, furthermore, the restriction on the seasons (hunting seasons), places (prohibition of hunting based on designation as Wildlife Protection Areas and Restoration Areas), authorization (hunting license), etc. are provided for. The protection of birds and mammals is being executed under these regulations.

Also, regarding specially important areas as habitats for birds and **mammals** within Wildlife Protection Areas, the habitats for birds and mammals has been preserved by designating the Special Protection Zones where activities such as development are restricted. Regarding these Wildlife Protection Areas, also in future, by taking account of appropriate distribution for migratory birds based on their mobility and securing various kinds of birds and mammals and also by making efforts for including various types of biotic communities, the promotion of establishment of those areas are to be executed.

On the other hand, in the rural areas, damages by deers, monkeys, etc. to agriculture and forestry are spreading. Under these circumstances, it has become important issue to manage wild birds and mammals for coexistence between humankind and wild birds and mammals and, therefore, the survey of living conditions, measures for preventing damages, restoration of habitats, control of population by hunting, etc. are to be comprehensively executed.

#Wildlife Protection by Natural Monument System

Academically valuable wildlife such as endemic species of Japan have been designated as the natural monuments based on the Cultural Assets Protection Law. The subjects for designation include animals, various types of vegetation, and ecosystems which hunting or change of. current status such as alteration of habitats are restricted.

Also, to conserve precious animals and plants and their habitats, the projects such as preparation of environment, spreading edification, protection and breeding based on the project plans for protection and breeding, and the measures for protection such as public assets of designated areas are being executed. It is intended to promote proper. protection and management in the future.

#Wildlife Protection in National Forest

Conservation of natural habitats and maintenance of viable population of wildlife are promoted, through the proper management of Nature Conservation Forests and Protected Forests in the National Forests.

Especially for endangered wild species which are designated under the Law for Conservation of Endangered Species of Wild Fauna and Flora, the projects such as patrols for protection of individuals, maintenance and establishment of their habitats are being carried out.

#Protection and Management of Wild Aquatic Life

Based on the Fisheries Law and the Fishery Resources Protection Law, the protection and management of wild aquatic life are being implemented and the sustainable use of fisheries resources are being executed.

Also, based on the results of various surveys of wild aquatic life, the species which are significantly decreased or threatened their existence are designated in the Data Book, With reference to this book, regarding the fishery animals and plants which are remarkably deteriorated in their status as resources, its habitat area have been designated as Protection Water Surfaces by the central and local government so that these resource are being protected and enhanced by means of regulation, etc. At the same time, the measures such as restriction or prohibition of harvesting, holding or sales according to the extent of deterioration have been executed.

#Measures Taken Against the Influence of Alien Species

The immigration of animals and plants species from abroad or other regions in Japan is a factor to decrease the biological diversity due to the disturbance of ecosystems,. disturbance of ecosystems by predation of native species or occupation of habitats, and hybridization with native species. In Japan, such problems as disturbance of the fish biota in lakes by immigrated freshwater fish or pressure on pure line by hybridization have been proliferated. Especially isolated islands bearing many native species, immigrated small mammal species have become a serious fear against the protection of rare native species through threatening on-ground types of small animals.

Therefore, at Amami Ohshima where many native species exist, the project to study the methods for extermination and control of immigrated mongoose is being carried out. Capture and extermination of large mouse bass which are pressing Miyako bitterling are being executed as a part of the protection and breeding projects.

Also, regarding immigration of foreign fish, some Prefectures are executing the measurement for restricting such immigration in accordance with the regulation of inland water fisheries. Especially regarding the prevention of illegally releasing the black bass (including large mouth bass, small mouth bass, etc.), the edification of fishermen are being made against wide-spread illegal releasing and also the cooperative system is being strengthened.

6.4 Activities for Conservation and Restoration of Biological Diversity Accompanying with Preparation of Social Assets

The population of Japan is about 125millons inhabiting in the area of 370,000km2 of which land is utilized multi-purposely. Therefore, the preparation of social assets from various viewpoints such as national land maintenance, disaster prevention, preparation of transportation system, preparation of agriculture infrastructure, preparation of housings, are being executed all over the national land.

These projects for preparation of social assets respectively entail certain level of alteration of nature. To prevent irreversible influences to the biological diversity by their execution, it is important to take such proper cares as sufficient prior survey and study or avoidance or minimization of adverse influences which are appropriate in light of the properties of projects and the degree of their materialization.

Especially for the execution of projects which might have significant impact to the environment due to their large scale, proper environmental impact assessments have been carried out so far based on the Implementation Scheme for Environmental Impact Assessment (Cabinet decision) and individual laws or regulations. Their proper applications are to be promoted continuously. Also, the procedure for environmental impact assessment based on the Environmental Impact Assessment Law adopted in June 1997 (to be enforced within 2 years by June 1999) is expected to be fully entered into force and its proper application is to be made by taking account of conservation of the biological diversity.

Also, in the executing organizations for respective preparations of social assets and infrastructure, by indicating the guidance to promote the cares of conservation and restoration of the biological diversity, the activities for minimizing adverse

influences against the biological diversity due to execution of projects are being performed.

To be more precise, the respective organizations have been executing such activities as, in the case of preparation of roads, preparation of eco-roads including route selection for securing coexistence with nature as far as possible, adoption of road structure for avoiding large alteration of topography and vegetation, securing of roads for animal movement, preparation of alternative environment.
In the case of preparation of rivers, "fertile nature-type river preparation" including preservation of torrents and deep pools, installation of fishway, preservation and creation of shore environment suitable for living of aquatic life have been implemented. In the case of preparation of fishing ports, preparation of "environmental coexistence ports (eco-ports)" including preservation of shallow seas, tidal flats, selection of shape and structure having less influence to tidal currents and water quality, removal of sludge, creation of shores have been carried out. And in the case of preparation of fishing ports, preparation of "nature-harmonization oriented ports" including preparation of shore protection or shores where aquatic life can live and grow have been taken place. These activities shall positively be promoted also in the future.

6.5 Sustainable Use of Biological Diversity Components in Agriculture, Forestry and Fisheries

Because the agriculture, forestry and fisheries are utilizing biological resources of various ecosystems, they have intimate and indivisible relation with the biological diversity. In other words, the biological resources utilized by the agriculture, forestry and fisheries constitute biological diversity, with having various relations each other under the ecosystem.
Therefore, in the use of biological resources, it is necessary to promote the sustainable agriculture, forestry and fisheries while fully taking account of conservation of the biological diversity including ecosystems.

Forestry]
In the use of components of the biological diversity of forests, it is important to maintain the diverse roles and functions provided by forests and to ensure the sustainable use of its components in the future. To realize this, it is important that efforts are to be made not only to conserve primeval forests but also to maintain biological diversity in other forests while using forests and the components of their biological diversity. Proper forest management in accordance with forest situations is required for the conservation of the biological diversity in forests and for the sustainable use of its components. And it is essential to promote forestry production activities and to develop mountain villages which are foundations of these activities.

In transition of Japanese society placing more importance on the quality of life and spiritual value, various demands of people for forests as an environmental assets are growing. Therefore, to make multi-functions of forests fulfilled comprehensively and highly with assessing the status of forests in the long term view, appropriate forest management is to be promoted with consideration of the feature of biological diversity.

Based on the recognition stated above, the following priority measures on the sustainable use of forests have been implemented while considering the conservation of biological diversity.

#Maintenance of Diverse Roles and Functions of Forests
The following systems are to be appropriately implemented;
The Forest Plan System including "Basic Plan for Forest Resources" which provides the guidance and supervision of long term forestry operations.
The Forest Protection System which provides public benefits by conserving forests and promoting their functions.
The Forest-Land Development Control System which prevents disorderly development of private forests except for protection forests.

And training persons in charge of forestry production activities, enhancement of research and extension of knowledge and technology concerning forests, forestry and wood industry, and education activities, such as class for forestry, for understanding of forests and their roles, should be enhanced.

#Conservation and Management of Forests
Management of forest genetic resources and

development of techniques such as breeding technology, forest conservation projects and forest management project corresponding to the forest status by each region, and conservation measures for preventing forests from damages caused by diseases and insects, acid rain, etc. are to be promoted.

#Promotion of Use of Forest Resources

To promote use of forest resources and activate of rural mountain villages, comprehensive use of forest resources such as the improvement of timber supply system, promotion of effective use of timber, promotion of by-products from forests, and use as the area for clean-air refreshment and communing with the local and urban residents, etc. taking account of forest conservation, are to be promoted.

#Measures in National Forests

In the management of National Forests, in accordance with the categorized functions of forests, the appropriate forestry work are to be made to enhance their functions. To respond to various needs for forests, promotion of the natural forest management, appropriate implementation of artificial forest work, promotion of multi-storied forest management and promotion of prolonged cutting management, and active reforestation of the broad-leaved forest are being executed. Also, maintenance of healthy forest ecosystem and enhancement of the public beneficial functions are being promoted through the protection forests by preventing forest from damages and by providing of the communing area with forest.

[Agriculture]

Agriculture is an industry utilizing natural material cycle and has multi-functions, such as national land and environmental conservation, and stable food supply essential to national life. One of the remarkable characteristics of agriculture in Japan is continuation of wetland paddy farming accompanied with traditional culture for two thousands and several hundreds years under temperate monsoon climate with heavy rainfall and steep topography. Wetland paddy farming is regarded as sustainable farming system without injury by continuous cropping, salt accumulation and soil erosion. Irrigation channels and agricultural ponds for wetland paddy farming system provide various types of habitats and contribute to the conservation of ecosystems under the artificial management.

However, as a result of giving too much importance to productivity and economic efficiency, agricultural management without enough consideration for ecosystems, e.g. excessive continuous cropping, inappropriate application of pesticide and fertilizer, inappropriate treatment of livestock wastes has been recently seen. In addition, while the secondary nature such as arable lands and copses require continuous management to maintain their ecosystems, depopulation and advancing age in some rural areas have made it difficult to maintain ability of conserving environment.

Hence, considering these facts, the following activities are being promoted to properly maintain ability of conserving environment through appropriate agricultural activities.

#Promotion of Sustainable Agriculture

Sustainable Agriculture is defined as a farming system seeking reduction of environmental burden associated with agricultural activity, and utilization of natural material cycle in harmonization with maintenance of productivity level. To be more concrete, it is intended to promote farming methods based on reviewing threshold level for controlling plant diseases and pests by agricultural chemicals, appropriate use of chemical fertilizer,. soil improvement and recycling such as appropriate treatment and effective utilization of livestock wastes.

For this purpose, various technologies including the agricultural chemicals saving method are being developed and researched.

#Development of Sustainable Agriculture and Agricultural Villages

To preserve and restore the environmental conservation functions which the farm villages originally have, the agriculture and rural development is being promoted with attending to the conservation of environment. For instance, we promote conserving of natural ecosystems and landscape in the case of establishing agricultural channels and creating networks of “biotopes (spaces for habitats)” by establishing facilities for breeding animals and plants around irrigation ponds.

#Conservation and Use of Rural Environment

To encourage urban dwellers come and contact with

rural areas by making use of scenic landscapes, traditional cultures, etc. in those areas, Green Tourism (a new type of vacation which involves longer periods of stay in rural areas) are to be promoted.

#Protection of Rare Wild Species Available for Commercial propagation

In the case of commercially propagable species, it is effective for conservation of species to develop techniques of propagation, besides protecting of their natural habitats. Therefore, activities for establishing propagation technique& are to be promoted.

Fisheries]

Japan is surrounded by seas and has productive fishing grounds close to its main islands having fertile biological diversity where both cold and warm currents meet. Japan has developed fisheries as an industry by cultivating accumulated experiences and high technology and taking care of conserving environment of fishing grounds in good conditions.

About 40% of animal protein of Japan currently depends on aquatic products. Therefore it is important to continue effective utilization of fishery resources in the future and, also for that reason, various international and domestic activities are to be executed.

As the fishery resources are naturally equipped with huge natural reproductivity, if they are properly and effectively utilized, the blessing can be sustainably enjoyed. Also, the conservation of environment in fishing ground lkads to the conservation of environment in seas and in turn the conservation of biological diversity of the sea. Therefore, sound fisheries is to be developed by taking account of conservation of fishing grounds.

With these in mind, the following activities are to be executed for sustainable use.

#Sustainable Use and Conservation of International Marine Living Resources

Through the international framework such as international fisheries management bodies or international treaties, the measures for resource management are being executed based on well-grounded scientific evidence. We seek for the understanding of such policy, in parallel, the efforts for executing more appropriate management of fish resources are to be made. Additionally, other such measures as promotion of scientific research like the resource survey relating to marine living resources, and the execution of various regulations and various restrictions for resource management are to be done.

Further, in line with the policy made by international organizations such as Food and Agriculture Organization of the United Nations (FAO) and individual regional fishery management bodies, and appropriate application of related international treaties such as the Convention of International Trade in Endangered Species of Wild Fauna and Flora (CITES), the conservation and use of components of marine ecosystems are to be executed. Regarding the marine living resources which are not subject to fisheries, the efforts for the conservation of the resources are to be made through the development and practice of the technology to minimize their capture. With regard to whale resources, efforts should be strengthened for the worldwide recognition of the principle on appropriate conservation and sustainable use of whale resources, based on the scientific evidence accumulated through conducting of scientific researches.

#Sustainable Use and Conservation of Domestic Aquatic Living Resources

Through appropriate application of "the Fisheries Law" and "Fisheries Resource Protection Law", the protection and management of wild aquatic species are to be promoted and the execution of various regulations for resources management are to be done.

Also, the promotion of "resources management-oriented fishery" for maintenance, increase and rational utilization, of fisheries resources are to be enhanced. And such measures as the aquaculture or fish ranching are to be promoted, taking into account of the biological diversity. In addition, pròductivity enhancement by development and improvement of fishing grounds and protection and management of rare aquatic life are to be promoted.

#Conservation of Marine Environment

Through the measures such as the execution of environmental influence assessment on various developments of coastal areas or the conservation and restoration of environment influenced by the development projects, the efforts for conservation of oceanic environment and securing of good fishing

grounds are to be made. Also, the formation of fishing ports harmonizing with the environment through such measures as the preparation of shores is to be promoted, and the measures for maintaining water quality in the water areas around the fishing ports through removal of mud and sludge are to be strengthened. Furthermore, coping with the environmental deterioration of shores due to waste, the edification activities for cleaning seashore and the support for such activities should be more widely enforced.

6.6 Outdoor Recreation and Tourism

Japan is blessed with various nature and, through daily and close contact with it, its nationals are traditionally said to be nature-loving people. Today, national interest to the nature has further increased by the maturity of the society as well as the diversification of their favorite and taste.

Under such situation, various outdoor recreation and tourism activities in distinctive nature as well as ordinary ones have been actively taken in Japan. Among various activities of the utilization of the components of biological diversity, these kinds of activities are the ones that are most popular in Japan.

Sustainable outdoor recreation and tourism activities, imposing a minimum influence upon the environment and promoting the contact with nature, are quite valuable as the opportunity to deepen nation's understanding for biological diversity.

On the other hand, some outdoor recreation and tourism activities might accompany large-scale development which might cause decrease of biological diversity due to improper or excess utilization.

Based on such recognition, Japan will promote the sustainable use of the components of the biological diversity by outdoor recreation and tourism activities based on such measures as stated below;

#Measures for Contact with Nature in Natural Parks

The aims of Natural Parks are to protect the scenic beauty and also to promote the use of it so as to simultaneously contribute to people's health, recreation and culture. Accumulative total 970 million of nationals visit National Parks per a year.

In National Parks and Quasi-National Parks, such recreational facilities as foot paths, camping sites and picnic sites for getting familiar with nature have been provided. Also the wooden boardwalks for preventing from marshes denudation by trampling-down are prepared, at the same time such projects as restoration of denudated vegetation are being executed.

Also under the scheme of the management of Natural Parks, driving with off-road vehicles into the designated zones or driving by private cars is controlled by the regulations in order to prevent the scenic sites from denudation by over-use and to secure comfortable utilization. Furthermore, activities for promoting the interest of visitors to the nature such as animals or plants, as well as for deepening the understanding on the importance of biological diversity like the explanation at the exhibition in visitor centers or the interpretation of nature in the fields are implemented. To strengthen human resources that support these activities, the system of Natural Park Volunteer Leaders have been entrusted and of Park Volunteers have been executed by education, training and supportive measures.

In the areas with excellent and distinctive natural landscapes that can be recognized as the core of each National and Quasi-National Park, the "Green-Diamond Plan" is being executed. Under this plan, strengthened measures for conservation and restoration of the nature, more detailed nature explanation or guidance for nature utilization, and spaces provision suitable for high-quality learning of nature are being executed. At major spots of use in National and Quasi-National Parks, staying-type of Commune-with-Nature Schools or Eco-Museums where children can contact with wildlife and learn about nature, have been established.

In addition, for the nature other than that in the National and Quasi-National Parks such as backyard hills of village *or* shores, activities like providing facilities to enhance contact with wildlife have been promoted. Also, the network of Long-Distance Nature Trails aiming at getting familiar with nature easily through walking has been provided nationwide.

#Measures in Farm Village Regions and Forests

In the rural areas, green tourism, which is a new type of vacation which involves longer period of stay in those areas with the aim of enjoying natural beauty, appreciating local culture, and communing with the local residents has been actively promoted. Also in the forests, to utilize the forest spaces comprehensively including the promotion of health, culture and education, the preparation of sites as bases for the exchange activities between cities and rural villages through forest and forestry experiences is being promoted. In addition, the Forest Instructor System was launched, and information on forests and forestry to the general public, guidance of around the forests, and instruction of out-door activities are being developed nationwide.

#Measures in Urban Areas

In the urban areas, mainly the urban parks are playing key roles as the familiar spaces for outdoor recreation activities. Therefore, improvements of the parks for securing habitats for wildlife and providing fields for environmental education, and preparation of the allotment gardens where people can experience farming activities are being promoted.

#Measures in Rivers

In accordance with the river environment management plan, the manners applied to such areas, which have been zoned as having high needs for utilization for conservation of the natural environment, utilization as the places of recreation, or the policy for preparation have been made open. Based on such manners, projects such as preparing the home rivers to form the shores to which various kinds of wildlife depend on and to provide native people the opportunity to contact with the nature are being promoted. In the torrents and denudated slopes, the sand control projects are executed by taking account of maintenance and creation of the environment and landscapes and utilization of torrents. Also regarding the dammed lakes, measures for utilizing the dam space and preparation of water-friendly shore protection and promenades are being promoted.

#Measures in Coastal Areas

Because the coastal areas are being utilized as the familiar places for recreation of nationals such as swimming, fishing, and shell gathering, conservation of seashore environment, i.e. establishment of seashore preservation facilities for preventing erosion of sandy beaches and maintenance and restoration of sandy beaches, should be promoted taking into account of utilization of seashore, ecosystems and landscapes.

And, when the fishing ports and harbors are established, the establishment of fishing parks, greens or marinas will be promoted at the same time in order to provide places for contact with nature.

On the other hand, there occur some problems such as damages against birds due to fishing lines and hooks remaining in fishing grounds or dumping of waste from fishing boats. The edification activities to enhance manners are being promoted.

Besides these, also from the standpoint of tourism policy, the preparations of tourism infrastructure facilities such as family auto camping sites in the fertile nature are being executed to secure the places for contact between people and nature.

6.7 Conservation and Use of Genetic Resources

[Conservation of Genetic Resources]

The biological diversity on earth provides many of the resources essential for human being such as food,' clothing, paper, and medicines. The potential to use genetic diversity has increased because of advances in biotechnology, on the other hand, extinction of species has increased on a global scale due to such factors as the decrease of tropical forests. Consequently, conservation of genetic diversity has become an urgent global issue.

The following institutes address issues related to conservation of genetic diversity.

MAFF (Ministry of Agriculture, Forestry and Fisheries) Genebank System, established in 1985, collects, evaluates and preserves genetic resources of agricultural plants, animals, microorganisms, forest trees, etc. and those genetic resources are fully utilized through, for example, plant breeding. Currently about 210 thousand accessions are conserved in the MAFF Genebank System. It is planned that by the year 2000, 250 thousand accessions will be conserved within this system. Besides, the National Research Institute of

Brewing,the National Tax Administration Agency, collects and stores microorganisms such as fungi and bacteria utilized in the products of alcoholic beverages. The Institute for Physical and Chemical Research conducts gene bank projects which collect, preserve and distribute cultured cell lines and cloned genes, and microbial preservation projects which collect, identify and distribute microorganisms.

[Use of Genetic Resources through Biotechnology]
Application of biotechnology to the use of genetic resources has tremendous potential. Generally a small amount of genetic materials is needed for biotechnological production and thus, biotechnology will provide a sustainable way to use biological diversity. The use of genetic resources in Japan is designed to reduce adverse effect on wild genetic resources.

At present, the relevant organizations are executing the study for developing the healthy utilization technology of bioremediation applied to resolving and purifying capability of microorganisms to the pollution of soil or groundwater and for assessing its environmental impacts, the development of medicine such as rare materials in a living body by application of the recombinant DNA technology, the analysis of resistant genes to various plant pests and breeding new plant varieties and animal breeds, and the experiments on gene operation for yeast etc. relating to liquor brewing. Sustainable use of genetic resources will be promoted, taking the aforementioned points into consideration.

[Safety of Living Modified Organisms Resulting from Biotechnology]
Safety standards at the stage of experimental and industrial application for living modified organisms resulting from biotechnology are ensured by the following guidelines' formulated and implemented by the relevant Ministries and Agencies.

To ensure the safety standard at the experimental stage, "Guidelines on Recombinant DNA Experiments in Universities and Other Research Organizations" in 1978 and "Guidelines for Recombinant DNA Experiments" in 1979 were formulated and have been reviewed as required. The number of researches following those guidelines has been increasing yearly. The guidelines will be reviewed and revised on the basis of accumulated scientific knowledge at any times in future ensuring safety standards.

To ensure the safety at the stage of industrial application, the appropriate application of recombinant DNA techniques are performed through the formulation of the following guidelines which are based on the OECD Council Recommendations issued in 1986, stating "there is no scientific basis for specific legislation to regulate the use of recombinant DNA organisms" and "Recombinant DNA Safety Considerations".

For food production involving recombinant techniques and for the application of recombinant DNA organisms in agriculture, forestry, and fisheries, the "Guidelines for Application of Recombinant DNA Organisms in Agriculture, Forestry, Fisheries, the Food Industry, and Other Related Industries" were formulated in 1989. Surveys and researches are carried out to promote the appropriate application of recombinant DNA organisms and to ensure the safe use of recombinant DNA organisms with a view to developing methods for ecosystem impact assessment and appropriate management practices concerning the intentional release of recombinant DNA organisms into the environment.

In the fields of mining and manufacturing industries, the "Guideline for Industrial Application of Recombinant DNA Technology" indicating the basic requirements for the securing of safety in manufacturers' utilizing the DNA reassembling technology for industrial processes was developed in 1986 and, in accordance with this Guideline, 317 items of individual plans for industrialization of DNA reassembling technology have been certified that those are conforming to the Guideline. (as of September 1997)

In the field of environmental preservation, studies about the method of environmental impact assessment and evaluation method of safety in applying the bio-remediation using living organisms have been taken.

Because the utilization of genetically-operated living organisms in open system including application to environment purification technology is expected to increase in future, issues such as the establishment of

environmental impact assessment method in intentionally releasing genetically-operated living organisms into environments, the development of guidance and standards for safety assessment, the establishment of monitoring and control methods for environments and the measures to obtain national consensus are continuously being studied.

With respect to the Protocol on Biosafety prescribed specifically in Article 19. Paragraph 3 of the CBD, concerning living modified organisms resulting from modem biotechnology, which is currently considered by the Open-Ended Ad Hoc Working Group on Biosafety, Japan makes efforts on supporting the Working Group to reach reasonable conclusions based on scientific grounds.

6.8 Education and Public Awareness

To conserve the biological diversity and to sustainably use its components, understanding and cooperation of the nationals are essential. Therefore, the role of education and public awareness are extremely important. Especially, for deepening the understanding on the conservation of biological diversity, it is important to deepen the recognition in more concrete manner about the importance and structure of nature and the. relationship between nature and human through contact with fertile as well as with familiar nature.

In Japan, as the measures for education and public awareness relating to the promotion for the conservation of biological diversity and the sustainable use of its components, following activities are being executed at present;

As the education in the primary, junior high and high schools, in accordance with the course of study, the guidance relating to the biological diversity and its conservation of animals and plants or the relationship among living organisms are being conducted mainly in the science class. Especially in the primary and junior high schools, activities for deepening the understanding about the mechanism or diversity of life through the observation and experiments on familiar animals and plants and learning with experiences in fertile nature are being held.

Outside the school education, the opportunities for edification about the environment and its protection through the natural monuments including visiting the natural monuments utilization facilities are being provided. In Natural Parks with excellent nature, the nature observation gatherings or nature explanation at visitor centers or nature observation walks are being held in cooperation with volunteers. Above mentioned activities are important to deepen the understanding of nationals about the importance of the nature and the biological diversity through contact with the nature.

On the other hand, in the environment nearby local authorities and private organizations are executing various activities in various places such as nature observation gatherings at the shores and mountain villages, bird watching gatherings, learning with experience and seminars for learning nature. Also in cooperation with volunteers, such Survey of Widespread Participation of Volunteers as the survey on the distribution of common animal species like cicadas or swallows nationwide, and the support to the Junior Eco-Club activities in which children learn by experience and participate in the environment conservation activities, are being executed. These are important activities of edification for the conservation of biological diversity in the environment nearby.

Also, regarding the forests, measures such as the assistance to the activities of the AU Japan Green Friends Federation to provide opportunities for the next generations to come into contact with forests and enhance their understanding for the concept of greening, instruction of out-door activities by the forest instructor and utilization of forest spaces like a clean-air refreshment or forestry experiences, are being promoted. Regarding the rivers, the preparation of shores for utilizing them as the fields of environmental education, as well as the establishment of framework for supporting children's play in the shores in cooperation with local people are enhanced. The edification for the beach cleaning at the sea shores are being promoted.

In addition, the seminars, exhibitions, etc. for promoting the public understandings about the usefulness and safety of biotechnology have been held. Through these activities,. the understandings about the conservation and sustainable use of biological diversity will be promoted.

Furthermore, the national holidays or other special days relating to the biological diversity such as the Greenery Day (April 29), the Bird Week (the first week of May), the Environment Day (June 5) have been instituted. During these days or the week, various events such as the nature observation gatherings or symposiums are concentratedly held so as to contribute to the edification of the conservation of biological diversity and sustainable use of its components.

Based on the activities mentioned above; issues such as the importance of the conservation of biological diversity and the sustainable use of its components or the impacts and problems of artificiality on the biological diversity will be actively treated as the subjects for the various edification activities in schools or other opportunities.

6.9 Grasping Biological Diversity, Surveys and Researches

For securing the conservation of biological diversity and the sustainable use of its components, it is necessary to firstly grasp exactly the current status of biological diversity.

[National Survey on the Natural Environment Based on the Nature Conservation Law]
In compliance with the Nature Conservation Law, we have been continuously undertaking the National Survey on the Natural Environment since 1973 in order to collect information and analyze the present state and long-term change of natural environment throughout this country. Actual vegetation map (scale of 1:50,000) covering entire area of national land as well as the data relating to the distribution of plant communities which are important to be protected, seaweed beds, tidal flats, coral reefs and the modification extent of rivers and coastlines have been prepared as the results.

Also, regarding all vertebrates species except pure marine species and the major invertebrates species, the Biodiversity Survey for grasping their nationwide distribution are being executed.

[Various Surveys in Respective Fields]
Regarding various surveys in respective fields, surveys for collecting the fundamental information about animals and plants are being continuously executed in the rivers and dammed lakes and their peripheral areas nationwide so as to promote proper management of rivers carefully as the habitats of wildlife.

Since the aquatic life living and growing along shores which have not been systematically understood except some valuable fish species, the survey on the distribution about species whose individual number is remarkably decreasing or whose existence is under threat is being executed. The results of the survey will be summarized in the Data Book for the aquatic life.

Development of Information Infrastructure for Biological Diversity]
In the National Survey on the Natural Environment, the information about the distribution of vegetation, animals and plants species are collected with the support of researchers and specialists. In order to get more information concerning the biological diversity through this survey, it is necessary to have closer relationships with these researchers and specialists. In addition, an easy access should be secured to use the information for various activities effectively.

For the purposes of achieving a unitary collection, storage and distribution of the biological diversity information, the information system on the biological diversity, has been introduced. Through making use of the results of the survey, the geographic information system (GIS) is under the preparation which is planned to be in operation from 1998 and may contribute to the clearing-house mechanism under the umbrella of the CBD.

Also, as the information basis for executing the conservation of biological diversity from the viewpoint of the global environmental problems, global map is under the preparation which is expected to be made use of as a supporting tool for predicting the environmental changes.

Promotion of Researches Related to Biological Diversity]
To promote conservation of the biological diversity and the sustainable use of its components, it is necessary to enrich the fundamental study about the mechanism of existence and maintenance of the biological diversity.

In Japan, national research institutes have implemented the studies relating to the evaluation method for the biological diversity, the protection and management of species, groups and their habitats of wildlife and the impacts on the biological diversity by development activities and so on. Also, as a part of research study related to the global environment conservation, international joint studies on the deviation of the biological diversity are being promoted in Asia-Pacific region.

In the field of the agriculture, forestry and fisheries, researches such as the development of the forecast method about the influence on the agricultural ecosystem by the impacts of the global environmental deviation, the analysis on the mechanism of agricultural and forestry ecosystems, the development of forecast method about the influence on the forestry ecosystem by the impacts of natural disasters and human activities, the development of technologies for the evaluation and utilization of genetic resources, the studies about the impacts on the growing of corals by the deterioration such as sedimentation, and the study about the impacts on the freshwater fish by the acidification of environments have been executed by respective research organizations.

As for rivers, preparation of research facility on coexistence with nature epuiped with the experimental river, of which scale is one of the largest in the world, is underway. The study about the preparation and conservation of the good habitats in the river space will be carried out in the future.

Also, regarding the study related to the biotechnology, the promotion of the human genome analysis research, the sequence of the genome of a hyperthermophile which can live at high temperature, the analysis of DNA information on the rice genome, the research of DNA recombination and the analysis on the structure and functions of protein are being executed.

6.10 International Cooperation

Conservation of the global environment including the biological diversity is a common task of all mankind which cannot be resolved by just one country. In addition, many of the environments containing fertile biological diversity exist in the developing countries. Therefore, it is essential to promote the conservation and sustainable use of biological diversity in the developing countries for the biological diversity in global scale.

Based on such principle and recognition, Japan will actively take part in and cooperate to the activities which are implemented under the international framework for the conservation of biological diversity and the sustainable use of its components, and also will make positive cooperation for the promotion on the conservation of biological diversity and the sustainable use of its components in the environment the developing countries and the world heritage sites which have international high values.

6.10.1 Cooperation through International Framework

[Contribution to Global Environment Facility (GEF)]

Japan has, from the pilot phase, actively participated in and contributed to the GEF designated as the interim institutional structure operating the financial mechanism of the CBD. At present, Japan is donating about 45.7billion yen (U.S.$415 million), equivalent to about 20% of the total amount of the GEF-phasel. Japan has long been considering that the GEF should be designed as the institutional structure operating the permanent financial mechanism for the CBD, therefore, Japan will make necessary cooperation from this standpoint.

[Cooperation on Information Exchange of Biological Diversity]

Japan is preparing the information system on biological diversity to correspond to the clearing-house mechanism, that is an information exchange mechanism based on the CBD.

This system has database about the distribution of vegetation, animals and plants species, and so forth, accumulated data obtained through the National Survey on the Natural Environment. In addition, the network with research institutes and specialists relating to the protection of the natural environment is planned to be established, and the information about the biological ‘diversity will be open to the public through Internet.

[Cooperation for Conservation of Wildlife and Ecosystem]

#International Cooperation for Migratory Birds Conservation

Japan has concluded bilateral conventions or treaties for protection of migratory birds species and their habitat with the United States of America, Russian Federation, China and Australia respectively. Under these conventions and treaties, collaborative research projects concerning migratory route and status of migratory birds have been implemented. Also, Japan undertakes cooperation project with the Republic of Korea for the protection of migratory birds based on the agreement of the cooperation for the protection of environment between Japan and Republic of Korea.

Japan promotes establishing "the East Asia-Australasia Shorebird Reserve Network" in which 24 sites of 10 nations have participated. The Yatsu Tidal Flat (Chiba Prefecture) and the Yoshino River Estuary (Tokushima Prefecture) are the two participating sites from Japan to the network.

Japan has also taken initiative to promote "the North East Asian Crane Site Network" which was launched with the participation of 16 sites in 5 countries. Namely the Kushiro-shitsugen (Kushiro Marshes), Akkeshi-ko/Bekanbeushi-shitsugen (Lake Akkeshi/ Bekanbeushi Marshes), Yatsushiro and Arasaki join the network.

#Cooperation for Conservation of Coral Reefs under the International Coral Reef Initiative (ICRI)

Japan has added the conservation of coral reefs to the Japan-United States of America Common Agenda and is promoting the activities based on "the International Coral Reef Initiative (ICRI)" . Japan supported the 1st Workshop of ICRI held in 1995 in Philippines and the 1st East Asian Seas Regional Workshop held in 1996 in Indonesia. Besides those, Japan sponsored the 2nd East Asian Seas Regional Workshop in 1997 in Okinawa. Japan will actively participate in the conservation of coral reefs in future as well.

[Cooperation of Agriculture, Forestry and Fisheries by Multilateral Framework]

##Cooperation for Consultative Group on International Agricultural Research (CGIAR)

Japan is donating the second largest amount behind the World Bank to the respective organizations affiliated to the Consultative Group on International Agricultural Research (CGIAR) which will carry out the study related to the agriculture, forestry and fisheries in the developing countries. Also active cooperation such as dispatch of researchers, execution of joint research are promoted.

#Cooperation for Promoting Sustainable Forestry Management

Japan donated funds necessary for the operation of "the Inter-governmental Panel on Forestry (IPF)" established in the 3rd meeting of the United Nations Commission on Sustainable Development held in 1995 and also actively participated in and supported the Panel, for example, by co-sponsoring the Kochi Workshop in 1996, that is one of the IPF intercessional meeting.

Furthermore, for the International Tropical Timber Organization (ITTO) which aims at compatibility between the conservation and use of tropical forests, Japan has been voluntarily donating the largest amount among the participating countries. Japan also has been taking an active role in implementing the International Tropical Timber Agreement (the 1994 Agreement) which entered into force in January 1997, for example, by subscribing to the Bali Partnership Fund.

#Cooperation with International Whaling Commission (IWC)

In order to monitor the resource conditions of whales and the ecosystems surrounding whales, Japan has been continuously providing IWC financial and technical supports for its conducting research programs such as IDCR (International Decade for the Cetacean Research) since 1978 and SOWER (Southern Ocean Whales and Environment Research) since 1996, which has succeeded both IDCR and Blue Whale Research in Antarctica conducted by Japan since 1994. In addition, in accordance with International Convention for the Regulation of Whaling (ICRW), Japan has been conducting the research of minke whale, involving take of limited whale samples, in the Antarctic Ocean and the Western North Pacific Ocean for the purpose of collecting the scientific information which can not be collected by any other research. The results of this biological research have been highly appreciated by

the IWC Scientific **Committee.**

[Cooperation for Study Relating to Biotechnology Safety in the Organization of Economic Cooperation and Development (OECD)]

Japan has been making voluntary financial contributions to the OECD Committee for Science and Technology Policy since 1991 and to the OECD Committee for Environment Policy since 1997 for the activities on biotechnology safety. In future, Japan will actively contribute to the applications of biotechnology to the field of conservation of the environment.

participation and Cooperation for International Joint Research Programmes]

#International Geosphere Biosphere Programme (IGBP)

The Iutemational Geosphere Biosphere Programme (IGBP) aims to study the physical, chemical and biological processes controlling the environment of the earth and their interactions and clarify the mechanism of global environmental change. In Japan, these tasks are mainly being undertaken by research institutes such as'universities, and following the first half plan (from 1992 to **1996),** the second 5 years plan is undertaken from 1997. .

#Antarctic Research Expedition

Japan has been continuously carrying out the Antarctic Research Expedition since 1956 and is contributing to the **monitoring** of global change of the biological diversity through the observation of biota, etc.

#Basic Study for Conservation of Biological Diversity of the Ocean

To prepare the infrastructure for the conservation of the biological diversity of the ocean, Japan is executing jointly with the relevant countries the highly-precise observation of ocean in the North Pacific Ocean as a part of the World Ocean Circulation Experience **(WOCE).** Also, to clarify the impacts on the marine environment by nutritious salt, **Japan** is executing the international joint study useful for clarifying the material circulation mechanism in peripheral seas.

#Man and the Biosphere (MAB) Programme of UNESCO

The establishment of network between the biosphere reserves in respective countries recognized under the **MAB** Programme is being promoted and the joint study relating to the conservation of biological diversity and the sustainable use of its components is being executed. Japan is also actively contributing to them.

6.10.2 Cooperation with Developing Countries

[Effective Use of Official Development Assistance (ODA)]

Field of environment is one of the areas to be emphasized in the basis of philosophy of the Japanese **Official** Development Assistance Charter.

In "the Initiatives for Sustainable Development toward 21st Century (ISD)" presented to the **19th** special session of the United Nations General Assembly held in June 1997, which introduces the environmental policies mainly including Japanese ODA comprehensively emphasizing on biological diversity.

In the field of biological diversity, in order to support the development of systems and organizations for the conservation of biological diversity,. capacity buildings, and . establishment of basic information on biological diversity, Japan is promoting the preparation of facilities and transfer&g of the relevant technology and **know-how.**

Also, recognizing that the detailed activities of private sectors have played an important role **in** the conservation of biological diversity and the sustainable use of its components, the activities **of** private sectors in developing countries will be supported by the Japanese Government.

Furthermore, in providing ODA, appropriate consideration to conservation of the biological diversity will be given accurately in compliance with "the Guidelines for Environment&l Considerations" in each organization.

[Cooperation for Wildlife Conservation and Protected Areas Management]

Japan is now promoting a comprehensive project for conservation of biological diversity in Indonesia under trilateral collaboration among Japan, United

States of America and Indonesia. Japan is now preparing the center for conservation of biological diversity whose function is to store the samples of species of animals and plants and to accumulate the 'information related to the biological diversity. The preparation of facilities and transfer of technology for the conservation and management of the Gmm-Harimun National Park where valuable species are living has been undertaken.

Also, Japan is now undertaking the cooperation such as in the in-situ conservation and captivi-breeding of the crested ibis *(Nipponia nippon) in* China, the protection and management of the World Natural Heritage areas in Indonesia, the development of the conservation and management plan for coral reefs in Philippines, capacity building and training on the coral reefs conservation in developing countries, and so on. Japan will actively continue these cooperation in the future.

[Cooperation in Agriculture, Forestry and Fisheries]

Recently, particularly in developing countries, useful genetic resources such as landraces and their wild relatives, are in danger of extinction due to pressures of development and modernization of agriculture.

In order to overcome these situations, Japan fully participates in the activities of the Commission on Genetic Resources for Food and Agriculture of FAO, and also extends joint research collaboration with developing countries on conservation and use of genetic resources, and will promote such cooperation continuously.

In forestry sector, Japan has been executing surveys on new forest management methods taking fully into account of vegetation shift and the conservation of habitats for wildlife, or the study about the tropical forests in Indonesia, Brazil, and so on, through bilateral cooperation, Japan will promote the cooperation for the management of forests having valuable ecosystems or the systematization of technology for the management of natural forests, and the like.

While Japan has been executing the cooperation for supporting the sustainable development of marine living resources in the developing countries for long time, Japan will continue to seek the way of well-balanced cooperation between sustainable use of marine living resources and the conservation of biological diversity.

[Cooperation for Conservation of Bioresources in Tropical Zone]

Japan has been carrying out the joint study for the conservation of species in the tropical forests and the sustainable use of genetic resources with utilization of biotechnology together with Thailand, Indonesia and Malaysia since 1993. Through the development of the technology for the identification of species which can be applied easily in the field and the technology of sustainable use of living organisms, Japan will cooperate for promoting the conservation of biological diversity and the sustainable use of its components in developing countries.

Chapter 7 Implementation Scheme of the National Strategy and Follow-up of Progress and Review of the National Strategy

7.1 Implementation Scheme of the National Strategy

The National Strategy indicates mainly the direction of policy of the National Government. Such policies will subsequently be implemented mainly by the National Government. The member Ministries and Agencies of the Inter-ministerial Coordinating Committee to the CBD, which are now establishing mutual ties among them, are taking initiatives comprehensively and systematically for implementing various measures for the execution of the CBD and the National Strategy.

The conservation of biological diversity and the sustainable use of its components are related to most aspects of socio-economic life of people. It is therefore essential for each body with their respective responsibilities, not only the National Government but also local governments, business sectors, the general public and private organizations, to cooperate each other and to act towards the directions indicated in the National Strategy -based on common understanding.

Therefore, in executing the national measures, the National Government will work towards the achievement of long-term goals of the National Strategy by striving to establish ties with these other sectors and supporting their activities.

7.2 Follow-up of Progress and Review of the National Strategy

To ensure steady implementation of measures based on the National Strategy, the Inter-ministerial Coordinating Committee to the CBD will annually follow-up the progress of those measures, and its results will be opened to the public. Also, the results will be incorporated in this national report to be presented to the Conference of the Parties to the CBD in accordance with the provision of the CBD.

The National Strategy itself will be reviewed in about five years with fully hearing the opinions of each sector of general public.

The first follow-up of progress was put together with respect to new measures taken for the conservation of biological diversity from the decision of the National Strategy in 1995 until March 1997. The results together with the future targets and tasks were opened to the public in May 1997. Also, public opinions about the results were sought and published in August 1997. These opinions will be made use of formulating future policies on biological diversity of the country.