

Chapter 2. Existing Strategy, Plans or Programs Concerning Biodiversity in DPRK

2.1 Existing National Strategies Involving Biodiversity Viz.

2.1.1 Developing Strategy for National Economy

The Developing Strategy for National Economy in DPRK is based on the line of building an independent national economy.

The line of building an national economy has its content as:

- to establish a diversified economic structure;
- to lay the firm self-resource base;
- to equip all spheres of national economy with modern technologies;
- to bring up self national technicians and experts.

The independent national economy is an economy with self-support pending on own resources technicians and people's power. Thus, since the independent national economy aims to develop economy relying, mainly, on its own resources, it requires to use own potentials in a planned and sustainable manner.

In self-support national economy, the biodiversity conservation takes a significant place in the aspects of increasing and using country's bio-resources, sustainably, and of protecting general eco-environment.

Since the whole land area is covered with 80% of mountains followings are very important in a development of economy:

- to unroll the work of afforestation extensively;
- to strengthen the conservation and increase of forest resource;
- to attain the self-sufficiency in food through improvement of agricultural eco-environment;
- to make proliferation of marine resource through protection of coastal and marine environment.

In this connection, it aims to: survey and estimate present status of country's bio species; increase the coverage of nature protection area and improve the management; use, efficiently, the gene resource by systematizing conservation.

2.1.2 National Environmental Protection Strategy

The national environment is closely related with human-being and it is unthinkable about human life apart from natural environment.

The Article 57 in Socialist Constitution of the DPRK says as follows;

"The state makes measures on environment protection before production, conserves and creates natural environment, prevents environmental pollution and provides cultural and hygienic living environment and working condition."

To improve and strengthen the work of environment protection so as to provide people with

better natural environment is a leading objective of the national strategy for environmental protection in DPRK.

The National Environmental Protection Strategy in DPRK is ;

1. to prevent environmental pollution beforehand and maintain and conserve favourable natural environment for human life and promote healthy life of people;

In order to prevent environmental pollution beforehand, it requires to distribute resident area and industrial area rationally, provide enterprises and factories with hazardous waste cleaning facilities and take measures to dispose life wastes and sewage from urbane residents.

2. to push afforestation and water conservancy through well reafforestation, protection and management of forest and well conservation of rivers and streams;

The well conservation of forests and rivers makes it possible to prevent damages from floods and droughts, and protect natural environment and hand over the more beautiful land to the coming generation.

3. to protect and manage coastal and territorial waters so to avoid the pollution and damages of sea environment,
4. to carry out the scientific research work for environmental protection with more efforts,
5. to intensify the supervising and controlling of environment with a just and correct standpoint on environmental protection and push this effort in a mass movement.

2.1.3 National Strategy for Conservation and Sustainable Use of Natural Resources

The keystone of National Strategy for Conservation and Sustainable Use of Natural Resources in DPRK is that well conservation of country's natural resources allows to develop national economy, improve people's life and protect natural environment.

The Strategy consists of 6 main contents of strengthening;

- creation of forest resource and improvement and strengthening of conservation and management works,
- protection, proliferation and management of useful animals and plants,
- conservation and proliferation of marine resource in sea, rivers and streams, lakes and reserves, and protection and management of land resource and prevention of soil erosion,
- amelioration of monitoring and supervising system for conservation and exploitation of underground resources,
- the scientific research work on prevention of environmental pollution and natural resource protection
- public enlightenment to open natural resource conservation movement in a nation wide scale.

2.1.4 National Nature Conservation Strategy

The national nature conservation strategy puts its main objective to the development of rich and powerful state of our country by converting our land into a golden tapestry with full of birds and animals.

For this, the strategy aims to bring up the effectiveness from conservation and proliferation of biological resources in order to provide comprehensive utilisation of mountains, rivers and sea and also, bring sustainable development of national economy, while ensure the unity/integration of nature conservation and its sustainable use so as to enhance its effectiveness of it.

The principal objectives/tasks for the strategy are;

1. Firm execution of Environmental Law
2. The update of laws and regulation on environmental protection and resource management
3. Equipment and re-arrangement of facilities towards the environmental protection and resource management
4. Public education and propagation of environmental protection and resource management
5. Improvement of living environment between urbanes and locals
6. Monitoring and controlling of resource use and environmental protection
7. Extension and development of scientific research work on this field
8. Evaluation against environmental impact
9. Strengthening of international exchanges in the field of environmental protection.

The strategy reveals also, the unfolding of nature conservation in a mass movement as a principal principle.

2.2 The Existing State Development Plan, Plans or Programmes For Natural Resource Management and Environmental Protection and Their Implementation.

2.2.1 Existing National/State Development Plan

After the completion of Third 7 Year Plan in DPRK, the Plan of National Economy is running upon the economic development plan of adjusting period.

The government, in April 1997, saw to it that the "General Plan for Land Construction of upto 2020" be developed.

The "General Plan for Land Construction" is an integrated prospective plan for land development to develop and use, rationally, the land for the national economic development and promotion of well-being of the people, strengthen the environmental protection and managing the domestic affairs in a prospective and planned manner.

The primary principles for the formulation of General Plan for Land Construction are as follows;

- Avoid the encroachment of farm land in development of land and natural resources, instead spare and protect to the maximum
- Avoid too large city, instead build many small cities
- Consider climatic and soil conditions of different terrains of the country
- Consider and combine the national economic development plan with economic development prospect of different areas.

The major content of the "General Plan for Land Construction" are: Forest conservation and reafforestation; Protection and proliferation of useful animals and plants; Land conservation and land re-zoning; building and managing of rivers and streams, lakes and reservoirs; Prevention of flood and synthetic use of water resource; the distribution/location and sizes of underground resource development area and industrial and agricultural enterprises; Establishment of steps for nature reserves and conservation; Protection and development of coastal and territorial waters; Protection and proliferation of marine resource; Prevention of air pollution.

2.2.2 The Biodiversity Conservation Plan under "Agenda 21" and its Implementation

The government ratified the "Agenda 21" for DPRK on May, 1993 and took necessary steps for its execution.

Followings are foreseen at Chapter 15 "The Biodiversity Conservation" in "Agenda 21".

- to formulate the strategy and development plan for biodiversity conservation
- to take steps for research on actual state and conservation of special reserves and nature protection area
- to conserve biodiversity in damaged ecosystems
- to intensify the scientific research work for catalogue compilation on bio-resources.
- to strengthen the protection of endangered and rare animals and plants
- to take measure to conserve gene resource for production expansion of several food materials from forest and agriculture
- to lay data base for biodiversity and set up centre for biodiversity conservation.

These plans foreseen at Agenda 21 are not run with satisfaction due to the various economic blocks including flood damages of 1995, 1996 and 1997 and sharp decent of food production caused by big drought.

2.2.3 National Plans or Programmes for Environmental Protection

The national environmental protection plan for DPRK is under implementation aiming at 2002.

The key objectives of national environmental protection plan are:^o

- to establish national environmental protection and management system.
- to prevent environmental pollution in principal cities including Pyongyang and Hamhung,

- to equip environmental pollution preventing facilities,
- to combine natural environmental protection closely with afforestation and water conservancy,
- to reafforest bolded mountains,
- to improve the eco-environmental protection role capable of ensuring high and safe agricultural production.

2.2.4. National Planning for Natural Resource Exploitation and Utilisation

The line of building independent national economy in DPRK premises the development of own resources and its sustainable use. Therefore, the biological resource is specially considered for the plan of conservation, sustainable development and use, for having extended reproduction capacity. And for the high density of population compare to the small territory, detailed programmes are presented to conserve diverse ecosystems and species, especially the gene resource to enable the protection and sustainable use of environment in natural resource development.

Thereby, are there presentations, closely, combined with implementation of the Convention which are: the plan for executing reforestation under the slogan of "One tree cut, ten trees replant"; the measurement to enhance the yield by improving agricultural eco-environment; the plan to proliferate the marine resource from the conservation of coastal and marine environment.

2.3 Existing State's Policies, Laws and Regulations Concerning Biodiversity and Assessment for their Implementation

2.3.1 Relevant State Policy, Laws and Regulations

The Biodiversity Conservation in DPRK has its main policy to enable our people to lead happy life generation after generation in a homy paradise with well protection and sustainable use of natural environment of the country.

The biodiversity conservation is implemented with the "Environmental Law" as its main content, and post adoption of the "Biodiversity Convention", the concrete shapes are given to the logical steps and actiones for the conservation and sustainable utilisation of eco-environment and species diversity. Here on, following laws are adopted and promulgated and it could have firm legal basis feasible to conserve and use sustainably of biological diversity.

- "Forest Law" December, 1992
- "Fishery Law" January, 1995
- "Law on Water Resource" June, 1997
- "Law on Sea pollution" October, 1997

There presented also, Governmental decisions of several sections for the adoption and execution of laws including the "enforcement Regulation of Environmental Law" Step, 1995, the "Management Regulation of Botanical Garden", the "Management Regulation of Zoo" and the "Management Regulation of Park and Pleasure Ground" adopted in 1993, which are

propelling actively the specific implementation procedure of the conservation of ecosystems, species and gene diversity.

The government enacted the regulation for regional protection target/objective.

The "Regulation of Preventing the Pollution of Lake Chon on Mt. Paekdu" is an example of mentioned. The objective of the regulation is to prevent pollution of lake Chon and protect the natural environment in here. And the relevant bodies and organs are to control and supervise the changes or variations of ambient fauna and flora and of geographical feature and water quality.

2.3.2 Relevant International Conventions and Agreements that DPRK Involved In

The DPRK is a party to the UNFCCC as well as the Convention on Biological Diversity. It acceded to the World Heritage Convention in 1997. Relevant authorities, now, are under review on relevant conventions including the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (RAMSAR) etc.

Chapter 3. Existing Cross-sectoral and Sectoral Plans, Programs, Policies and Roles concerning the Biodiversity

3.1 The Existing Cross-sectoral Plans, Programs, Policies and Roles concerning the Biodiversity, and Assessment of their Implementation viz

For executing the state policy for biodiversity conservation and its sustainable use, those sectors composing the major ecosystems such as the Forestry, Agriculture and Marine are taking specific actions and steps for the conservation and sustainable use.

The conservation of gene diversity, especially the original place is reflected well in the actions taken for conservation and increase of herb resource used in Koryo medicines, the traditional medicine.

Regarding the plan for afforestation, the 10-year plan of 1996~2005 is developed and here from, targeted 2 million ha of plantation which is being executed yearly.

The co-relations and controlling of sectors relevant to the biodiversity conservation are exactly conducted by the government, and sectoral specific programmes for the Convention are progressing successively.

3.1.1. Nature Conservation and Sustainable Use for Biological Resources

3.1.1.1. The conservation and sustainable use of forest resource

1) Objectives

In order to conserve forest resource and ensure its comprehensive and sustainable use, it should plan afforestation of 2 million ha by the year 2005, increase forest accumulation by the year 2020 with 110 million_{m3}, which is 87_{m3} per ha, harmonise the annual average cut of forest within 6 million_{m3}, to increase the production of forest soil by increasing timber resources and also oil-tree forest, wild-fruit forest, fibre forest and grazing field beside urgent restoration of destroyed forest ecosystem due to natural disasters.

2) Focal projects

Afforestation of centres with heavy rain

To complete afforestation by improving the status of forest of middle and upper part of river basins of Amrok river, Chongchon river, Taedong river, Resong river and the areas with heavy rain like Yodok, Chongpyong and Kumya in S. Hamgyong Prov. and inland areas of Ichon, Pyonggang, Sepo in Kangwon Prov. by the year 2005.

Afforestation of non-forest and hilly areas.

To complete afforestation of about 300,000 ha. of non-forest by the year 2005 and improve 2 million ha. of low-productive forest.

Creation of fast growing fire-wood forest.

To complete the creation of firewood forest by the year 2002 by designating correctly the

800,000 ha. of fire wood area in order to mitigate public intervention on forest by providing fire wood forest which meets the demand of fuel of urban areas.

Creation of intensive timber forest and diverse economic forest.

Plans are made and is being implemented to create 50 ha. of Pyongyang maple trees, 200 ha. Of popular in all cities and countries, 100,000 ha. Of chestnut forest.

200,000 ha. of economic forests, creation of timber forest and diverse economic forest is emphasised. E.g. 50,000 million ha. of Evodia Danielli Benn (by the year 2002 years), the oil tree.

3.1.1.2. Agro-Ecosystem conservation and sustainable development of agriculture

1) Objectives

To use agricultural land stereo-typed on the basis of eco section, and fully protect eco-environment of agriculture and produce high and sound yield by closely combining the organic agricultural method with increasement of soil fertility.

2) Focal Projects

- To establish 7 demonstration sites of eco-agriculture, resource recycling agriculture and 10 of it in several agro-eco zones by 2002 and generalize it.
- To widely introduce and disseminate the agro-forestry, or agro-forestry combined management according to zones.
- To establish comprehensive model to prevent soil erosion and to increase soil fertility.

3.1.1.3. Water environment and marine resource conservation and its sustainable use

1) Objectives

- To promote fish resource management by increasing fish resources through establishing the order of utilization of sea, coastal and river waters and preventing environmental pollution in territorial and sea waters.
- To establish 11 fish resource reserves in terrestrial and 15 in coastal and marine areas.

2) Focal projects

- To control the disposal of pollutants in terrestrial waters and the sea.
- To develop mariculture technology, improve environment and monitor mariculture area.
- To establish marine resource reserves and eco-monitoring station in terrestrial waters, coastal and sea.
- To establish comprehensive demonstration site of water areas taking into consideration of environmental protection.

3.1.1.4. Conservation of Animal and Plant species

1) Objectives

- To prepare and publish data book on endangered and rare animal and plant species.

- To preserve eco-environment of main habitats.
- To promote and strengthen monitoring, protection and management of species and habitats.
- To establish breeding base of specie in *ex-site*.
- To prevent the mitigation of species by releasing it in nature.

2) Focal Projects

- To survey and evaluate the endangered and rare species of animals and plants by establishing field facilities in their main habitats.
- To establish central artificial breeding facilities for endangered and rare species in several places including Central Botanical Garden and Central Zoo and also artificial breeding facilities for endangered species in small areas of each provincial botanical gardens and zoos.
- To publish data book on endangered and rare species of animals and plants.

3.1.1.5. Wetland Conservation

1) Objectives

- To establish field facilities for monitoring and surveying 4 migratory bird (wetland) reserves by the year 2002 by increasing awareness on the importance of existing 12 migratory bird (wetland) reserves.

2) Focal Projects

- To establish facilities in order to survey and monitor lower part of Chongchon river and Kumya river, Taedong Bay and Rajin-Sonbong area for migratory birds conservation.
- To establish models for wetland conservation and sustainable use in Rajin-Sonbong area and the West Sea Barrage areas.

3.1.1.6. Designation of Nature Reserves and its Management

1) Objectives

- To promote the capabilities of protection and management of existing various types of nature reserves by the year 2002.
- To take systematic survey and strengthen monitoring by establishing equipments for surveys in the main nature reserves.
- To increase the area of nature reserves to 8% of the total land area and complete the network system on nature reserves in nation-wide.

2) Focal Projects

- To take systematic survey and monitor by establishing national research facilities in fields like Mt. Paekdu, Mt. Kumgang, Mt. Myohyang, Mt. Chilbo and Mt. Kuwol which takes national and global significance.

- To take systematic survey and evaluate the status of animals and plants and its changes in all nature reserves and equip with necessary monitoring facilities.
- To promote network system of nature reserves in nation wide through unifying eco-corridor and forest construction, and designation and management of nature conservation buffer zones.

3.1.2. Scientific Study on Biodiversity

Academy of Sciences discussed the issue on strengthening the scientific study on biodiversity conservation and its sustainable use concerning the implementation of the Convention on Biodiversity in 1994 and defined focal scientific studies on biodiversity conservation field from the scientific and technological development plan upto 2002.

3.1.2.1. Focal studies on biodiversity conservation and its sustainable use upto 2002

1) Biological sector

Studies on the establishment of conservation system on endangered and rare species of plants, studies on the structure and functions of ecosystem of main nature reserves, preparation of "fauna" and "city planting" each provinces, and plant community classified table for each provinces. "Korea fauna" should be focused in botanical sector.

Preparation and supplement of the "Korea flora", studies on conservation of beneficial animals in N.W. mountains of the country, studies on endangered and rare species of animals, development of artificial breeding technology of beneficial animals and studies on extermination of blights by biological methods should be focused in zoological sector.

Studies on genetics to promote the method of improving the seed of main crops, biological studies on breeding to increase the number of superior husbandry quickly, studies on development of bio-chemicals with high efficiency and bio chemicals and studies on production of valuable materials from agro-forestry and wastes from foodstuff processing biological sector should be focused.

2) Forestry sector

Emphasis should be given to the studies on greening and planting in hilly areas and non-tree forests in short time, studies on creation, growing, and use of firewood, studies to increase the production of saplings, studies on growing superior timber, oil tree and wild fruit trees and studies to protect forest soil, arable land and rivers and stream from flood in forest sectors.

3) Agricultural sector

Emphasis should be given to the improvement of eco-environment of agriculture including the prevention of soil-erosion and compile database of agriculture through completion of agro-eco regionalization, systematic increase of agricultural production through establishment of original seed of crop, application of organic agricultural method and increase of 2-time planting and cultivation between trees.

4) Marine sector

Emphasis should be given to the establishment of release technology and production

technology in large amount of species for the creation of fish resources in sea and terrestrial waters, development of growing- technology and feed- production technology of fish seeds to increase the production per ha. of terrestrial waters and establishment of resource exploring technology with the use of satellite information data.

5) Koryo Traditional Medicines

Emphasis should be given to the survey and on its sustainable use of Koryo (traditional) medicines, conserve and increase the resources by identifying the methods of expanding the resources, clarify the application of new Koryo medicines and promote the technology of several traditional diagnosis and treating technology in Koryo medicines.

3.1.2.2. Scientific study development plan on biodiversity of Academy of Sciences -2010

Academy of Sciences is assigned to prepare scientific study development plan -2010 in 1998. The scientific study development plan-2010 put main emphasis on the following.

1) Biodiversity conservation sector

- Prepare the inventory on biodiversity, flora, fauna and spore-bearing plants.
- Monitor the species of flora and fauna and ecosystem in natural reserves and improve its protection and management.
- Clarify the structure and functions of main ecosystem and restore destroyed ecosystem.
- Biological study on conservation of endangered and rare species.
- Study gene diversity of main organism and conserve gene resources.

2) Sustainable use of bio-resources

Science of Forest

- Clarify rational forest management method to increase the efficiency of use and increase of forest resources by increasing the functions of environmental protection and conserving the diverse forest.
- Growing and planting of superior seed among the original seed in the country.
- Industrialization of sapling production, establishment of modern technology and clarification of forestation.
- Establishment of extermination of blights in forests biologically .
- Establishment of comprehensive cultivating technology of each economic species in highlands.

Science of Agriculture

- Prepare a plan of developing agricultural technology by eco-regions in order to contribute all the potential production capability of bio-resources of agriculture.
- Introduction of organic agricultural method and increase of its efficiency.
- Establishment of conservation technology of gene-resources of agriculture,

- establishment of system of a germ and increase of breeding efficiency.
- Establishment of technology to increase the efficiency of arable land.
- Extermination of crop blights by biological methods.
- Increase of production in grassland and establishment of reasonable technology for breeding and rearing domestic animals.

Science of Fishery

- Extension of species for increase of mariculture and development of technology to raise the rate of natural survival and produce young.
- Conservation of gene resources of major aquatic animals and plants, and development of new species.
- Rational use of inland waters and introduction and extension of advanced technology of nursery.
- Environmental protection of fishing ground in seas, restoration of fishing grounds and development of technology to increase the production in fishing grounds.
- Modernization of forecasting technology of fishing port and determination of reasonable amount of fish catch.

Koryo (traditional) Medicines

- Scientification of basic theory of Koryo medicines, diagnose by Koryo medicines and modernization and scientification of treating methods.
- Protection and increase of Koryo medicine resources and development of Koryo medicines relying on domestic resources.

3.1.2.3. Study Plan on Biodiversity in Universities under the Ministry of Education

Ministry of Education, keeping in close touch with the Academy of Sciences, set priority projects of scientific research on biodiversity conservation and its sustainable use in universities and institutes under the Ministry of Education in 1998.

The priority projects are as follows:

- Preparation of Inventory on Biodiversity
- Study on economic assessment of biodiversity loss
- Protection of some endangered and rare species
- Study on gene basis and development of technology on bio-engineering
- Study on the protection and increase of beneficial animals and plants
- Basic study on rational use of mountains, rivers and seas
- Study on increase of biodiversity of rural eco-system

3.1.2.4. Success achieved in scientific research sectors of biodiversity

Academy of Sciences in DPR Korea is included of all the research institutes of sectors like

forest, agriculture, fishery, rural and public health (traditional medicines). It has already organized National Committee for Joint Study Programme of MAB, UNESCO. Besides, it has organized Temporary Committee for Conservation and Sustainable Use of Biodiversity in 1995. Success mainly achieved by Academy of Sciences in scientific research on conservation and sustainable use of biodiversity are as follows;

1) Inventory on Biodiversity

Academy of Sciences which was organized in 1992, has proceeded with its systematic survey and study on bio-resources of the country during the whole period of Korean War, rehabilitation period after the war and socialist construction period.

Under the basis of long-time survey, it could publish Bibliography on "Korea Flora" (Vol.1-7), "Korea Spore Bearing Plants" (Vol. 1-9), Bibliography on "Korea Fauna", Bibliography on "Korea Fish" (Vol.1-3), Bibliography on "Korea Amphibian and Reptiles", Bibliography on "Korea Freshwater Fish", Bibliography on "Korea East Sea Fish", Bibliography on "Korea West Sea Fish" and Bibliography on every Economic Insects, etc. However, due to lack of professional work team during the last periods, it made less study on taxonomy of lower animals and invertebrate animals, and studies on changes in recent years were less emphasized.

Under such circumstances, it has strengthened the study on taxonomy which was paid less attention and started to make up inventory on regional fauna and flora in order to complete the Inventory on Biodiversity from 1990s.

In addition to this, adjustment and database of big amount of zoological and botanical specimen collected during the last 40 years and establishment of conservation system are under procedure.

2) Study on Conservation of Animal and Plant Species and its Sustainable Use

Success has been achieved in the sectors of protecting economically valuable species of animal and plant and endangered and rare species and its increase through scientific research on biodiversity.

Success achieved in botanical resource sector is that studies on protection and sustainable use, distribution and its ecology of economically valuable species among raw material plants for oil, wild fruit plant, raw material plants for paper and mushroom are more deepened. And success achieved in animal resource sector is that studies on distribution, ecology and artificial breeding of pheasant, water deer, badger, bear, deer, common frog, carp, dolly, earthworm, etc. have resulted quiet a lot of success.

Distribution, ecology and amount of resources of endangered animal species like crane, black-faced spoonbill and *Chinese Egret*, and endangered plant species like *Korean rhubarb*, *Panax schinseng* and *Gastrodia elata* have been surveyed and studied and its counter measures have been taken.

Under the basis of this, data book on endangered and rare animals and plants of the country is under preparation.

The Central Botanical Garden and the Central Zoo have achieved success in the conservation of endangered and rare species and development of technology for artificial increase. Besides, efficient bio-medicines and foodstuffs for good health are being produced through the

development of technology for producing industrially, the high price bio-products from animal and plant resources.

3) Study on Conservation of Ecosystem Diversity

National map for cover crops and tables for plant population of major ecosystem is made in ecosystem diversity conservation sector.

Ecosystem of major nature reserves with abundant biodiversity like Mt. Paekdu area, Mt. Myohyang, Mt. Kumgang, Mt. Chilbo and Mt. Oga have been comprehensively assessed and measures to protect and manage have been taken.

Structure, function and changes of typical needle-leaf forest, broad-leaf forest and forest mixed with needle leaf and broad leaf and types of forest in the country has been studied. And also characteristics of typical rivers, streams, lakes and lagoons like Taedong River, West Sea Barrage area, Chongchon River and Lake Taesong, and elements that effect the bio-production of aquatic ecosystem have been studied.

4) Study on Gene Diversity and Bio-engineering Technology

Tissue culture of *Kimilsunglia*, *Kimjongilia* and other plants with economic value like *gingseng* have been done successfully and the foundation of chromosome engineering is been provided.

With close cooperation with Experimental Biology Institute, Branch of Gene and Institute of Agricultural Science, assessment on gene diversity of crop is being carried out.

Technology to expand superior specie of goat by transplantation of fertilized ovum is being established and disseminated in animal husbandry sector.

5) Organization of Seminars on Biodiversity Conservation

Academy of Sciences held seminar on conservation and sustainable use of bio-resources in 1995 and scientific seminar on survey and assessment on biodiversity in 1998 with the co-sponsorship of Academy of Science, Botanical Society and Zoological Society.

3.1.2.5. Management of Data on Biodiversity

National database for biodiversity is not yet established in DPR Korea.

Ministry of Land and Environment Protection and Academy of Sciences are under preparation to establish biodiversity information centre to collect data, prepare national inventory on bio-resources, database the collected information with computer and disseminate the information comprehensively in order to establish management system for data on biodiversity.

3.1.3. Education and Public Awareness on Biodiversity Conservation

3.1.3.1 Education and Training

1) Education

Ministry of Education put forward the programme to strengthen the education on environmental protection including biodiversity conservation and took necessary measures in 1992.

Education programme on environmental protection put it as a major task to educate students

in universities not to mention of universities teaching biology, geography, agriculture, fishery, forestry, health, construction and environment protection, etc., review textbooks of primary, secondary and high school to strengthen education on environmental protection to the growing youth and make them acquire basic knowledge on biodiversity conservation. Hence, it brings up many manifold environmental experts by making all the youth to take correct understanding on environmental protection.

- (1) Strengthen the education of environmental basic knowledge in primary and secondary education.

It gives full knowledge on general basis for environment, environmental protection and management of natural resources through the 11 year compulsory education system and closely combines theory with practice on environmental protection which gives lively knowledge on nature through juvenile camping, prospecting, extracurricular activities in pupil's and children's palace, greenery guards activities, campaign to create children's union forests and forest for teaching.

In order to fully carry out this work, it raised the rate of education of environmental protection in re-education curriculum of teachers in primary and secondary schools. It also requested to make re-education curriculum for biodiversity conservation in teacher's training colleges and university of education, seed bed for educating future generation.

- (2) Professional education on biodiversity conservation

Able technicians and experts on environment protection are increased by raising the quality of its subjects to provide specialised knowledge and specialised technical knowledge on environmental protection focusing on biodiversity conservation.

- (3) Educational system of studying while working on biodiversity conservation

Full education on conservation and sustainable use of biodiversity is given to the people involved in educational system of studying while working who are students, producers and officers in universities of factories and farms.

In relations to this, it waged activities to edit and publish textbooks and references concerning biodiversity conservation and sustainable use, and environmental protection.

2) Training

Ministry of Education took measures to bring out Faculty of Environmental Protection in several universities of the country including Kim Il Sung University, University of Construction and Building Materials, Hamhung University of Chemical Industry and Wonsan University of Agriculture in 1998.

Academy of Sciences included the index of training exports on biodiversity conservation in the curriculum of doctoral institute regarding biology in order to expand training of exports on biodiversity conservation in 1994.

As a result, many exports on ecology, environmental protection, zoology, botany, microbiology, genetics and environmental laws are trained each year in the doctoral institutes of universities and the Ministry of Education.

3.1.3.2. Public Propaganda

Korea Nature Conservation Union made an outline of public propaganda for environmental

protection in 1996 to develop public propaganda for biodiversity conservation.

The outline points out to establish well organized network system of public propaganda for biodiversity conservation and increase public awareness on importance of biodiversity conservation and environmental protection, hence, encourage the people to keep the legislations and regulations on environment protection and participate in the activities of environment protection and land construction.

Public propaganda on environmental protection is waged under the close cooperation and support of all the relevant organs of publication and broadcasting, scientific research, culture and art, environmental protection and nature resources through dissemination of knowledge on environmental protection by newspapers, magazines and televisions, and propaganda activities by literature and art.

Major activities waged in accordance to the outline of the public propaganda on environmental protection are as follows:

1) Public propaganda through newspaper, broadcasting and publication.

Rodong Sinmun and *Minju Choson* carries articles on experiences of units that achieved success in environmental protection and land construction. Besides, *Pyongyang Sinmin* and other newspapers of each provinces carry articles on superior experiences and importance on environmental protection and biodiversity conservation.

Periodic magazines including *Nature Conservation* disseminate many articles on environmental protection and biodiversity conservation.

2) Public propaganda through scientific films and television

Creative group of Science Film of Science and Children's Movie Studio (now renamed to Scientific Documentary Film Studio) produced many scientific films on beautiful nature of the country and useful animals and plants including "Primeval Forest of Mt. Oga", "Bird to be Internationally Protected" and "Protect White-Bellied Black Woodpecker", etc. during last 30 years.

Central Telecast broadcasts edited news on nature reserves that take great significance on biodiversity conservation of the country and rare species including "Mt. Paekdu and Nature", "Mt. Myohyang" and "Black Faced Spoonbill".

3) Public Propaganda Through Commemorating Days

Public propaganda is waged in various types; telecast, speak through radio and lecture meeting in Land Protection Month, Planting Month, Bird Protection Month and Wild Animal Protection Month, etc. in nation wide.

Besides, broadcasting, lectures and propaganda activities on environmental protection and significance on biodiversity conservation in global scope are carried out meeting the Earth Day (April 22), Global Environment Day (June 5) and Biodiversity Day (Dec. 29).

In addition to this, the working people's organization including the youth league and the Union of Agricultural Working People of Korea wages activities of public propaganda on environmental protection and biodiversity conservation, especially, the youth league organizes do-good-thing movement like greenery guards and campaign to create Children's Union forests among youth.