

**MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT
VIETNAM ENVIRONMENT ADMINISTRATION**

**4th COUNTRY REPORT
VIETNAM'S IMPLEMENTATION OF
THE BIODIVERSITY CONVENTION**

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(REPORT TO THE BIODIVERSITY CONVENTION SECRETARIAT)

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TABLE OF CONTENTS

INTRODUCTION	2
REPORT SUMMARY.....	3
CHAPTER I. OVERVIEW OF BIODIVERSITY: PRESENT STATUS, TRENDS AND THREATS.....	9
1.1. Characteristics of Vietnam’s Biodiversity.....	9
1.1.2. Diversity of Species.....	11
1.1.3. Diversity of Gene	13
1.2. Values of Biodiversity	13
1.3. Trends of Biodiversity Changes in Vietnam.....	14
1.4. Threats to Biodiversity.....	19
CHAPTER II. NATIONAL STRATEGY AND ACTION PLAN ON BIODIVERSITY	26
2.1. National Strategy and Action Plan on Biodiversity in Vietnam.....	26
2.2. NBAP 1995: Implementation Results and Lessons Learnt.....	28
2.3. Introduction to the NBAP 2007	30
2.4. Overview of the Implementation of National Biodiversity Related Strategy and Action Plans.....	35
2.5. Shortcomings in the NBAP implementation.....	37
CHAPTER III. INTEGRATING BIODIVERSITY INTO SECTORAL AND INTER-SECTORAL OPERATION	38
3.1. Integrating Biodiversity into inter-sectoral plans, programs and policies and regional development.....	38
3.2. Integrating Biodiversity in Implementing International Conventions.....	39
3.3. Integrating Biodiversity in Related Sectors.....	40
3.4. Mechanisms for integrating biodiversity contents.....	44
3.5. Ecosystem-based approach for integrating biodiversity into sectoral and inter-sectoral strategies, plans and programs	46
3.6. Some achievements of biodiversity integration into sectoral and intersectoral policies.....	47
CHAPTER IV. CONCLUSION: PROGRESS REACHING TO 2010 GOALS AND IMPLEMENTING STRATEGIES	50
A. Progress reaching to 2010 goals.....	50
1. National goals	50
2. Progress to achieve 2010 goals.....	50
3. Indicators for Assessing Progresses.....	53
4. Constraints and Difficulties	53
B. Progress reaching to strategic goals of the CBD.....	54
1. The CBD pioneering in all international biodiversity issues.....	54

2. Strengthening finance, human resources, and sciences and technology for CBD implementation	54
3. The NBAPs and integrating biodiversity into sectoral strategies and plans in reaching to the CBD goals	54
4. Raising awareness of biodiversity values and the CBD, and creating better social commitment for CBD implementation	55
C. Conclusion.....	56
1. Overall assessment of the CBD and its Strategic Plan Implementation in Vietnam	56
2. Lessons learnt.....	56
3. Priority Activities.....	57

LIST OF TABLES

Source: MPI and UNDP Vietnam, 1999.....	10
Table 1. The Variety of Species Proportion.....	12
Table 2. Quantity of Common Plants in Vietnam.....	13
Table 3. Changes in Forest Area and Coverage in Vietnam (1990 - 2006).....	14
Table 4. Established Protected Areas (2006).....	15
Table 5. The decrease in coral coverage in some coastal marine in Vietnam	18
Table 6. Vietnam Red Book 2007: Classification and Number of Species	19
Table 7. The area of mangrove forests and shrimp farms in Ca Mau and Tra Vinh	20
Table 8. The area decrease and loss of indigenous species in 1970 - 1999	21
Table 9. Estimates of Needs for Some Wood Products	23
Table 10. Somel National Strategies, Plans, Projects and Action Programs for Biodiversity Conservation approved by Vietnam's Government.....	27
Table 11. The NBAP 1995's Prioritized Activities in accordance with related CBD articles	29

ABBREVIATION

BAP	Biodiversity Action Plan
CBD	Convention on Biological Diversity
DANIDA	Danish International Development Agency
EIA	Environmental Impact Assessment
GDP	Gross Domestic Product
GEF	Global Environmental Facility
GTF	Diễn đàn Hồ Toàn cầu
ICDP	Integrated Conservation and Development Project
IEBR	Institute of Ecology and Biological Resources
IUCN	International Union for Conservation of Nature
IWA	Inland Water Area
MOSTE	Ministry of Sciences, Technology and Environment
MPI	Ministry of Planning and Investment
MARD	Ministry of Agriculture and Rural Development
MONRE	Ministry of Natural Resources and Environment
NBAP	National Biodiversity Action Plan
NP	National Park
ODA	Official Development Assistance
PA	Protected Areas
PC	People's Committee
SUF	Special Use Forest
UNDP	United Nations Development Program
WWF	World Wide Fund for Nature

INTRODUCTION

Vietnam has been acknowledged as one of the most prioritized countries for global conservation due to its richness in biodiversity, where its biodiversity resources have been significantly reflected by three main values, including maintaining ecological function (environmental protection), economic supplies (direct use), and socio-cultural engagement.

Being introduced in 1992, the Convention of Biological Diversity (CBD) is considered as a principal commitment of signed state members to conserve and utilise the world biodiversity in a sustainable way and to equally share benefits provided by this resource. Vietnam joined the CBD in 1994, and since then the government of Vietnam has made considerable attention and investment in human and financial resources to fulfill its commitments and obligations to the Convention. In 1995, the first National Biodiversity Action Plan (NBAP) of Vietnam that was approved by Prime Minister. This plan has become a legal document that directed biodiversity conservation activities in Vietnam.

On 31st May 2007, Vietnam's Prime Minister approved the second NBAP to the year 2010 and its orientation towards 2020, in which conservation objectives are made relevant to the actual socio-economic development of Vietnam in the new period.

In 2002, the CBD members approved a strategic plan in which they committed themselves to reduce the current loss of biodiversity at national, regional and global levels by the year 2010, and assumed that this would contribute to poverty alleviation while still maintain and sustainably develop their own biodiversity resources. The strategic plan to 2010 comprises of 7 defined major goals. The members are expected to build up their own indicators for biodiversity assessment. This is the first step in forming a monitoring framework which will be integrated into national annual environmental state.

In order to fulfill the obligations of a CBD member, the Department for Biodiversity Conservation under the Vietnam Environment Administration was appointed as the national focal point for CBD implementation in Vietnam. It has worked in close cooperation with other involving ministerial agencies to prepare Vietnam Biodiversity State. This report is developed by compiling and analyzing legal, updated documents as well as collecting ideas and comments from specialists and relevant ministerial and sectoral agencies.

Following guidance by the Biodiversity Convention Secretariat, this report includes 4 chapters: Chapter 1: Overview of Biodiversity: Present Status, Trends and Threats; Chapter 2: National Biodiversity Strategies and Action Plan; Chapter 3: Integrating Biodiversity in Sectoral and Intersectoral Operation; Chapter 4: Conclusion – Progress in Reaching 2010 Goals and Implementing Strategy.

Information used in this report is derived from published documents by different ministries, institutes, and national/international organizations. However, some data is not the most updated due to lack of additional sources, which may lead to some certain limitation.

Ministry of Natural Resources and Environment, the national focal agency for CBD implementation, would like to extend its sincere appreciation to all organizations and individuals, who have contributed to make this report completed in accordance to the Biodiversity Convention Secretariat's requirements.

REPORT SUMMARY

Present Status of Biodiversity in Vietnam

Vietnam has been acknowledged as a country with high biodiversity, and as one of the prioritized nations for global conservation. The diversity of terrain, soil, landscapes and climate is a foundation for the diversity of ecosystems, species and genes of Vietnam.

In the country's terrestrial ecosystems, more than 13,200 floral species and about 10,000 faunal species have been identified. More than 3,000 aquatic creatures have been identified in the interior wetlands. The tropical marine with more than 20 typical ecosystems is also home to more than 11,000 sea creatures. For the past two decades, many new floral and faunal species have been discovered and described. Many of them belong to new genera and species, particularly those of mammals and Orchidaceae's species. New creatures continue to be discovered and announced in Vietnam.

Vietnam, with 16 cropping groups and more than 800 different species, is also considered one of the world's plant breeding centers, among eleven other centers. The national bank of plant genes is preserving 12,307 varieties of 115 species, many of which are indigenous ones with unique features. Tens of breeds of domestic livestock and poultry are also being conserved in Vietnam.

In Vietnam, ecosystems and biological resources that are a part of the country's economy and culture, reflected by their key values in environmental protection (ecological function value); direct use (economic value); and socio-culture. Biodiversity therefore makes a significant contribution to the national economy by ensuring food security, maintaining gene resources of livestock and plants, and providing materials for fuel, medicine and construction.

By 2006, the forest coverage, including natural forest and plantation forest, increased by 38.2%. Forest proportion has become more rational with 2 million hectares of special-use forest, 5 million hectares of protection forest and 8 million hectares of production forest. A system of 128 protected areas has been established and developed in all ecoregions nationwide covering an area of 2.5 million hectares or about 7.6% of the territory. In late 2008, Prime Minister approved a system of 45 interior protected wetlands. Another system of 15 marine protected areas has also been planned and submitted to the Government for approval. Moreover, 2 World Natural Heritages, 4 ASEAN Natural Heritages, 2 Ramsar Wetlands and 6 Biosphere Reserves have been internationally recognized.

Nevertheless, many threats to biodiversity in Vietnam that are existing. The increase of population and consumption has put a pressure on the natural resources, leading to resource overexploitation. Rapid socio-economic development has led to the changes of natural landscapes. Changes in land use and mass development of infrastructure that have reduced natural areas, rised ecological fragmentation, and damaged wildlife habitats. The construction of many dams has blocked the flows of migratory fish. The fast increase in forest coverage might be a good sign but, actually half of the increased area is plantation and regeneration forests that are of low biodiversity. Meanwhile, rich and primary forests remain little and continue being degraded.

The total number of endangered wildlife species in Vietnam is now 882 (Vietnam Red Book, 2007), remarked by an increase of 161 species in comparison to the number given in previous Red Book edition (1992-1996). In particular, there are 9 animals and 2 Lady's slipper orchid (*Paphiopedilum*) species that are considered being extinct in the wild. Many other valuable and rare species have been seriously decreasing.

Besides, there are still many shortcomings in biodiversity management in Vietnam, which are presented by separated and weak management bodies; unsystematic and inconsistent legislations; poor community participation; weak planning for biodiversity conservation and development at provincial, regional and national levels; and limited investment in biodiversity conservation.

National Biodiversity Strategies and Action Plans

In order to prevent biodiversity degradation, Vietnam's Government and ministries started to formulate policies and laws for biodiversity conservation in early 1960s. Since then, institutional reform and legislative development targeting to conservation and sustainable use of biodiversity have been significantly enhanced, in which several laws were promulgated such as: *Forest Protection and Development Law* in 1991 (amended in 2004); *Land Use Law* in 1993 (amended in 1998 and 2003); *Environmental Protection Law* in 1993 (amended in 2005); *Fishery Law* in 2003; and the most recently, the *Biodiversity Law* was approved by the National Assembly in November 2008.

Rightafter joining the CBD, Vietnam started building its first Biodiversity Action Plan, which was then approved by the Prime Minister on 22nd December 1995. Since its release, the Plan 1995 has become a legal document guiding for all biodiversity conservation activities in Vietnam. In 2006, the second NBAP to 2010 and its orientations towards 2020 (also known as NBAP 2007) was prepared and then approved by the Prime Minister on 31st May 2007, ensuring conservation objectives that are integrated to the country's socio-economic development at present time.

The NBAP 2007 consists of 5 major goals. Each goal contains several specific objectives. Some key objectives are: consolidation and development of the special-use forest system; regeneration of 50% of degraded watershed forests; effective protection of those valuable and endangered plants and animals being threatened to extinction; establishment of 1.2 million hectares of internationally and nationally important protected wetlands and marine protected areas; regeneration of 200,000 hectares of mangrove forests; development of demonstrations for sustainable use of plants and animal resources; control, prevention and stopping of exploitation, trade, and consumption of endangered wildlife species; examination of 100% of imported species and gene resources; education and public awareness raising about biodiversity conservation, development and sustainable use so that 50% of the population regularly receive information about biodiversity.

Compared to the NBAP 1995, the goals set in the NBAP 2007 are more comprehensive and ambitious. Each goal is specified by quantitative indicators. Furthermore, the Plan has set orientations for biodiversity conservation activities in Vietnam towards 2020.

Since the NBAPs were released, mostly all the goals have been reached to success particularly in integrating biodiversity into ministerial and sectoral strategies, programs and action plans; especially the system of protected areas has been consolidated, developed and

extended; ex-situ conservation activities are also developed; besides, initial achievements have been found in activities of species conservation, capture breeding of indigenous, economically-valued and rare species.

However, there remains some difficulties and obstacles while implementing the NBAPs such as: poor cooperation among different ministries, sectors, local authorities and biodiversity management agencies; unadequate mechanism for benefit-sharing; and weak community participation in biodiversity conservation.

Integrating Biodiversity in Sectoral and Intersectoral Performance

The protection of the environment and natural resources in general and the conservation and development of biodiversity resources in particular have been integrated into the Government's policies, programs and plans through sectoral and intersectoral policies such as Hunger Elimination and Poverty Alleviation Strategies; National Sustainable Development Strategy; and regional development plans.

Biodiversity conservation has also been integrated into the implementation of international conventions that Vietnam has membership such as the World Heritage Convention; the Ramsar Convention; the CITES Convention; the Convention for the Protection of the World Natural and Cultural Heritages; the Cartagena Protocol on Biosafety; the United Nations Framework Convention on Climate Change 2007-2010; and the Convention to Combat Desertification.

Recently, several sectors such as agriculture, forestry, fishery or tourism started to consider biodiversity conservation as one of the sectoral strategic objectives for their development. The integration of biodiversity conservation into ministerial policies, strategies, plans and programs are clearly presented.

One typical example is the *Five Million Hectares Reforestation Program* (also known as Programme 661) that set for the period from 1998 to 2010 with a rapid increase in forest area. By 2006, the forest coverage in Vietnam has reached by 38.2%, more employment created, and more income generated, and these contributed to hunger elimination and poverty reduction for upland people. The *Program of Forest Regeneration and Reforestation by Indigenous Plants, wildlife capture breeding, and aquatic conservation and development* also showed positive results in late 2006. About 50 wildlife animal species and tens of wild plant species had been bred in capture by thousands of farms and tens of thousands of households. Tens of aquatic species with high economic values have been demonstrated for man-made reproduction for commercial purposes. The *Off-shore Fishing Program* running effectively that helped to reduce over-exploitation and protect resources in coastal zones. Thanks to this, by 2004, the off-shore fishing productivity has reached to one third of the national total productivity.

Recently, Biodiversity Law has been approved by the National Assembly and the Government's policies allows piloting payment of environmental services, promoting land and forest allocation, diversifying income sources for protected areas, delivering more funding for environment and biodiversity research and conservation, that have pushed Vietnam's biodiversity conservation to a new level.

Conclusion: Progress to 2010 Goals & Strategic Implementation

In general, most of the national objectives for biodiversity conservation given in the NBAP 2007 that are consistent to strategic objectives of the CBD. Like other developing countries, to promote biodiversity conservation and sustainable development, Vietnam has been targeting to capacity-building and legislative improvement as key objectives, that facilitating to properly formulate legislative framework and institutional system for the country's natural resource management.

In order to *protect biodiversity components*, many biodiversity conservation activities have generated positive results such as mitigating forest loss and increasing forest coverage by 38.2% in 2006. Thus the 2010 objective to reach a forest coverage by 42-43% is likely feasible. Other results are such as the system of protected areas have been developed and extended; several sea turtle reproduction areas were established and protected in Con Dao Islands (Ba Ria-Vung Tau) and Nui Chua (Ninh Thuan); and the Vietnam Red List and Red Book (2007) have been developed and published following new criteria of IUCN.

In order to *promote gene diversity*, various economically valuable, indigenous plants and animals have been examined and bred for multiplication. Many native plants such as *Chukrasia tabularis*, *Aquilaria crassna*, *Panax vietnamensis* (Ngoc Linh ginseng that. have been planted via reforestation, farm development or dispersal plantation programs. Some indigenous cattle and fowl species have been retrieved such as Dong Tao chicken, Ho chicken, Son La Thuoc chicken, Y pig, H'mong pig, and Phan Thiet sheep. Many valuable aquatic creatures have been examined for man-made reproduction and raised for commercial purposes, contributing to a significant food production for domestic consumption and export.

The development of community-based sustainable natural resources use models has generated positive results in both effectively conserving environment and biodiversity and creating more employment and income for local people in and around protected areas. However, intensively agricultural and aquacultural development have significantly lessen the pressure on plant and animal exploitation in the wild.

Investigation, assessment and intervention activities for managing and preventing harmful invasive alien species have been taken in consideration. The Agriculture and Fishery sectors have released examination procedures for imported plants and animals before bringing into large scale production.

Ecologically based landscape planning approaches towards biodiversity conservation has been introduced in many areas, such as conservation initiatives in Central Annamite, Green Corridor linking Bach Ma and Phong Dien in Thua Thien-Hue, demonstration of biodiversity corridors in Quang Tri, Quang Nam and Gia Lai.

The Government has also integrated environment and biodiversity conservation into its plans and programs. Preparing Environmental Impact Assessment and Strategic Environmental Assessment reports (in which biodiversity considerations integarted as assessment indicators) for infrastructure development projects that have been regularly performed and made certain results.

Several agencies have started adopting fee collection for environmental protection, inspection and wastewater discharge licence. Some demonstrations on payment of environmental services and ecological services has been recently introduced in pilot provinces in order to test financing sustainability for biodiversity conservation in Vietnam. New legislations, especially the Forest Protection and Development Law (2004) and the Biodiversity Law (2008), have created a legal farmework to adopt ecological service payment mechanisms from those benefiting from biodiversity.

In Vietnam, biodiversity resources have, through many generations, contributed to sustainable livelihoods, food security and health care for local people, especially those living in remote areas and directly depending on resource exploitation. Vietnam's Government paid great attention to those communities by creating suitable mechanisms to help them can benefit from environmental services when they participate in reforestation or eco-tourism.

Persistent to national cultural identity preservation and development in the process of international integration, Vietnam's Government always encourage social works that conserve the socio-cultural diversity among ethnic groups. Many investigations on indigenous knowledge have acknowledged thousands of medicinal plants and hundreds of traditional remedies discovered by Dzao, Nung, Tay and H'mong people in mountainous areas. Traditional practices play a significant role to nature protection such as forming ghost forests, water-keeping forests or holy rivers (home to many aquatic animals) are supported and encouraged by local authorities.

The Government's budget allocated for biodiversity conservation is increasing in recent years through the Five Million Hectare Reforestation Program, Vietnam Environmental Fund, and Vietnam Conservation Fund. The ODA for biodiversity conservation makes up an average of 20-30% of the total mount for environment protection. Unilt 2003, foreign aids for natural resources management were upto 749,969,804 USD, making up 28% of the total amount for environment. About 18% of that amount came to biodiversity conservation. (Report on ODA for Environment, Environment Protection Agency and UNDP, 2003) The Government also committed, from 2006 onwards, to allocate 1% of the national total budget for environment protection. However, average annual funding for biodiversity conservation occupies only 0.4% of the national total budget.

Started in 2005, through a funding from DANIDA, the Environment Protection Agency has developed a national set of indicators for environment assessment which was then announced for official use by the Minister of MONRE. However, a national set of indicators for monitoring biodiversity was just started in 2007. At the moment, the national set of indicators for assessing biodiversity of forest, wetland and marine ecosystems is being developed, and hopefully it will be available for use before 2010.

Despite of several achievements in reaching the national 2010 goals as well as the CBD strategic goals, a range of certain difficulties and shortcomings in biodiversity management is presented as follows:

- Lacking of effective inter-sectoral cooperation mechanisms and overlappings in functions among different ministries;
- Legislations for biodiversity conservation is not yet systematic and comprehensive, even overlapping, inconsistent and of conflicts. Besides, several contents such as gene access and benefit-sharing, sustainable harvest of biodiversity resource that are not legislated yet.

- Poor community participation in biodiversity conservation due to the shortcomings of government mechanisms and policies, leading to weak law enforcement to stop deforestation and illegal wildlife trade.

- Investment for biodiversity conservation is still limited, or does not meet actual requirements or objectives. Further technical, financial and personnel resources are in need, together with raising awareness and information on biodiversity conservation.

In order to achieving national goals for biodiversity conservation as well as CBD goals, the following priority activities are recommended:

1. Soon releasing guiding documents for the implementation of the Biodiversity Law 2008, in which clearly define the functions of biodiversity protected area management for relevant ministries, agencies and local authorities;

2. Raising public awareness in enforcing the Biodiversity Law and building capacity of governmental managerial agencies in regard to biodiversity conservation;

3. Creating mechanism for connection and cooperation among management agencies and law enforcement agencies in the field of biodiversity conservation and development;

4. Developing a national inter-disciplinary programmes to study, preserve and develop biodiversity resources in response to climate change;

5. Developing programmes for monitoring biodiversity and integratedly managing biodiversity database. Conducting baseline biodiversity survey nation-wide;

6. Promoting the integration of biodiversity conservation into national, sectoral and local plans, programmes and projects;

7. Sustainably developing Vietnam's system of protected areas;

8. Enhancing the role and capacity of local communities so that they will actively participate in biodiversity conservation and protected area management;

9. Enhancing strict and effective management of illegal wildlife trade;

10. Paying more attention to new species importation. Production companies must strictly conduct examination requirements with imported species before introducing to large scale production. Early releasing solutions to manage and destroy harmful invasive alien species;

11. Diversifying and effectively managing funding sources for biodiversity conservation;

12. Appealing for more foreign aids for nature and biodiversity conservation, especially technical and financial support, information and ecosystem based approaches in conservation.

CHAPTER I. OVERVIEW OF BIODIVERSITY: PRESENT STATUS, TRENDS AND THREATS

Vietnam is situated in the east of the Indochina Peninsula, in a tropical region adjacent to the equator, stretching its territory through 15 latitudes with 1,650 km in length. Total inland area is 329,241 km² with $\frac{3}{4}$ of the area is uplands. The marine territory is large covering with a coastal line of 3,260 km and thousands of various islands. The country's climate is characterised by tropical monsoon combining with sub-tropical and temperate montane climate. Out of the East sea climate, the inland has 3 climate types with 10 typical regions representing different ecoregions.

The diversity of terrain, soil types, landscapes and climate that makes up favours for the rich and unique diversity of ecosystems, species and genes in Vietnam. However, along with the country's socio-economic development, the country's biodiversity has been changing over the time.

1.1. Characteristics of Vietnam's Biodiversity

1.1.1. Diversity of Ecosystems

Though there is no official classification for ecosystems in Vietnam, but according to scientists, its ecosystems can be divided into 3 major groups: terrestrial ecosystems, freshwater ecosystems, and marine ecosystems. All these types are sensitive to both natural and human impacts.

a. Terrestrial ecosystems

In Vietnam's territory, typical terrestrial ecosystems are distinguishable, such as: forest, grassland, savan, dry land, urban, rural, and limestone mountains. Among these ecosystems, forest ecosystems have the highest diversity of fauna and flora. They are home to many wildlife species with high economic and scientific values. Other natural ecosystems have lower diversity in species proportion. Urban and rural ecosystems are artificial and thus, have very few species.

b. Wetland ecosystems

The wetland ecosystems are varied with lentic as lakes, reservoirs, ponds, lagoons, water rice field; and lotics such as river, stream, and canals. Some have high biodiversity such as mountain rivers and peat swamps. Many new animals to the sciences have been discovered from these ecosystems. However, the ecosystems of underground rivers and lakes in karst caves have not been studied yet.

c. Marine ecosystems

According to statistics, Vietnam has 20 typical marine ecosystems belonging to 9 natural regions with different marine biodiversity characteristics. Three marine areas, Mong Cai - Do Son, Hai Van - Dai Lanh and Dai Lanh - Vung Tau have higher biodiversity than the others. Coastal ecosystems such as mangrove forests, lagoons, coral reefs, seaweed-seagrass or island-surroundings usually have high biodiversity, but they are also very sensitive to environmental changes.

1.1.2. Diversity of Species

Vietnam is one of the countries with high diversity of fauna, floral and microorganism species. Baseline research documents have provided the following statistics:

Flora: about 13,766 floral species that have been recorded and/or described in Vietnam, including 2,393 non-vascular species and 11,373 vascular species (Nguyen Nghia Thin, 1999). The flora in Vietnam does not have endemic family, and only 3% of genera are endemic.

Terrestrial fauna: about 307 roundworm species (Nematoda), 161 cattle parasite worm species, 200 earthworm species (Oligochaeta), 150 acartia species (Acartia), 113 springtail species (Collembola), more than 7700 insect species (Insecta), 260 reptile species (Reptilia), 162 amphibian species (Amphibia), 840 bird species (Aves), 310 mammal species and sub-species (Mammalia) have been identified and described in Vietnam.

Microorganism: among 7,500 recorded species in Vietnam, there are more than 2,800 that are harmful to plants; 1,500 can raise diseases for human and cattles; and more than 700 species are found useful.

Freshwater creatures: 1,438 microalgae species of 259 genera and 9 phyla; more than 800 non-skeletal animal species; 1028 freshwater fish species. Particularly, the carp family (Cyprinidae) with 79 species of 32 varieties and 1 sub-family is considered endemic with 1 variety, 40 species and sub-species. Among Cystarcan, there are 10 varieties with 39 species of shrimp, crab; 4 varieties with some oysters or snails described for the first time in Vietnam. These are the evidences for highly endemism of freshwater creatures in Vietnam.

Marine creatures: more than 11,000 species are found in the marine territory of Vietnam, consisting of about 6,000 zoo-benthos species; 2,458 fish species including 100 economic valuable ones; 653 seaweed species; 657 zoo-planton species; 537 phyto-planton species; 94 floral species found mangrove ecosystems, 225 sea-shrimp species; 14 seagrass species; 15 marine snake species; 25 marine animal species; 5 sea turtle species, and 43 waterfowl species.

That recent releases on newly-discovered species to the world sciences and Vietnam have implied that the fauna and flora in Vietnam have not been fully investigated yet. Recently discovered species have enriched the country's biodiversity, however several other species with high economic values tend to be decreasing.

Table 1. The Variety of Species Proportion

Group	Number of species in Vietnam (SV)	Number of species in the world (SW)	SV/SW in percentage
1. Phytoplankton - Freshwater - Marine	Approx. 2,000 1,438 537	40,000	5.0
2. Algae/Seaweed - Freshwater - Marine	Approx. 680 Approx. 20 653		
3. Seagrass	14		
4. Terrestrial flora - Vascular species - Non-vascular species (moss, big fungus)	Approx. 13,800 Approx. 11,400 Approx. 2,400	220,000 72,000	6.3 3.3
5. Salty mangroves	94		
6. Freshwater non-skeletal fauna	Approx. 800		
7. Marine non-skeletal fauna - Zoo-plankton species - Zoo-benthos species	Approx. 7,000 657 Approx. 6,300		
8. Inland non-skeletal fauna	Approx. 1,000	30,000	3.0
9. Parasite worm	190		
10. Insect	7,750	775,000	1.0
11. Fish - Fresh water fish - Marine fish	Approx. 3,500 Approx. 1,000 Approx. 2,500	30,000	11.6
12. Terrestrial reptile	296	6,300	4.7
13. Marine reptile (sea snake, sea turtle)	21		
14. Amphibian	162	4,184	3.8
15. Bird	840	9,040	9.3
16. Terrestrial mammals	310	4,000	7.7
17. Marine fauna	25		

Source: Vietnam Biodiversity State 2004

Box 1. Recently discovered species in Vietnam

Over the past two decades, based on baseline investigations in different regions in Vietnam, many new species have been discovered and described to the world sciences. Initial data are provided for some organism groups that were not studied before such as amphipods (Amphipoda), bat (Chiroptera), ant (Hymenoptera, Formicidae) and inland snails.

In a short period, from 1992 to 1999, Vietnamese scientists in cooperation with the World Wide Fund for Nature (WWF) discovered and described 4 new large mammal species, 4 new small mammal species, 3 new bird species and several reptile and amphibian species.

Regarding to flora, within 10 years (1993-2002) there are 13 genera, 222 species and 30 taxon below species described for sciences; 2 families, 19 genera and more than 70 species acknowledged. The Orchid family (Orchidaceae) solely added 3 new genera, 62 new species scientifically and had 4 genera, 34 species announced to be found in Vietnam for the first time. The pine phylum (Pinophyta) added 1 new genus, 3 species scientifically and had 2 genera, 12 species announced to be found in Vietnam for the first time (Jacinto Regalado J. et al, 2003).

In the past 10 years, about 50 species of freshwater non-skeletal animals, fish, and tens of species of inland non-skeletal animal and insects have been described for sciences.

The numbers above are evidence to the high biodiversity of species and endemism of Vietnam

Source: Vietnam Biodiversity State, MONRE (2005)

1.1.3. Diversity of Gene

According to Jucovski (1970), Vietnam, with 16 plant groups and more than 800 different species (Table 2), was considered as one of the world's plant breeding centers, among eleven other centers. The national bank of plant genes is preserving 12,307 seed plants of 115 species, many of which are indigenous ones with unique characteristics.

Table 2. Quantity of Common Plants in Vietnam

No.	Group	Number of species
	Major food plant	41
	Additional food plant	95
	Fruit tree	105
	Vegetable	55
	Spice plant	46
	Plant for drinking	14
	Plant for fibre	16
	Plant for feeding	14
	Plant for lipid	45
	Plant for attar	20
	Plant for soil recovery	28
	Medicinal plant	181
	Decorative plant	62
	Shade plant	7
	Industrial plant	24
	Timber	49
	Total	802

Source: MONRE (2005), MARD (2005).

In regard to livestock, Vietnam have 14 cattle and poultry species being raised, including 20 kinds of pigs (14 of which are local ones), 21 kinds of cow (5 locals), 27 kinds of chicken (16 locals), 10 kinds of duck (5 locals), 7 kinds of wild goose (3 locals), 5 kinds of goose (2 locals), 5 kinds of goat (2 locals), 3 kinds of buffalo (2 locals), 1 kind of sheep, 4 kinds of rabbit (2 locals), 3 kinds of horse (2 locals), pigeon, stag and deer (about 10,000 stags and deers being raised over the country).

1.2. Values of Biodiversity

Biological resources and biodiversity in Vietnam have significant implications to the country's ecology, economy and socio-culture.

Ecological and environmental values: Ecosystems is the foundation of life. They maintain material circles and energy flows, discompose wastes, protect soil and water, harmonize climate, and mitigate damages caused by pollution and natural disasters.

Box 2. The roles of mangrove forests in mitigating damages of natural disasters

Since 1954, there have been more than 212 storms attacking or affecting Vietnam's coast, causing serious damages to 82.8% of the population, infrastructure, houses, industrial areas, fish farms.

According to statistics, the coastal mangrove forests have reduced at least 20-50% of the damages caused by storms, storm surges and tsunamies. Particularly, the mangrove forests close to the dykes, taking the role of a green shield, help reduce 20-70% of the strength of sea waves, protect the sea dykes, save billions of dong for maintenance of these dykes.

Economic values: Biodiversity has great contributions to the national economy, especially in agro-forestry and fishery production. It acts as a foundation for national food

security; maintains gene sources for breeding planting trees and livestock; provides materials for construction, fuels and medicine. About 80% of aquatic products come from coastal marine and supply 40% of protein for the people. About 25 millions Vietnamese people living in or around forests, and estimatedly 20-40% of their income generated from timber and non-forest timber products. Fishery also provides main income for about 8 million people, and partly contribute to income of about other 12 million people. According to the General Statistics Office, in 2003, the agricultural sector contributed nearly 21%, to Vietnam's Gross Domestic Products (GDP). The forestry sector contributed 1.1%, and the fishery sector contributed 4% to the GDP.

Socio-cultural values: Biodiversity creates natural landscapes, which originates the inspiration to art and cradle for many respective traditions of the people. For thousands of years, Vietnamese culture is very close to the nature. Many trees and animals have been implied as holy creatures that being worshipped by many communities. Traditional practices such as indigo dyeing, textile handicraft, fine arts of wood, bamboo or rattan... display the close connection of culture and biodiversity. Ecosystems with high biodiversity and beautiful landscapes are of advantages for developing eco-tourism and environmental education, bringing benefits to local people and authority, and raising public awareness in nature and biodiversity conservation.

1.3. Trends of Biodiversity Changes in Vietnam

The process of socio-economic development in Vietnam has led to significant changes in biodiversity resources of the country. The followings are considerably positive changes towards biodiversity conservation in Vietnam:

1.3.1. Forest coverage continued increasing

After the wars, the total forest area of Vietnam remained 11.17 million hectares in 1976, and continued decreasing down to the bottom in 1990 at 9.1 million hectares. Since 1990, thank many appropriate policies of the state and great efforts of all the people, Vietnam has gradually mitigated forest decline and recovered forest area. By 2006, the total area increased significantly making a coverage of 38.2%, rising more 10% in comparison to that in 1990. Forest proportion became more rational with 2 million hectares of special-use forest, 5 million hectares of protection forest and 8 million hectares of production forest.

Due to afforestation programmes, biodiversity in some areas is revived. The rate of native plant species has increased in plantation forests. Several species that were threatened to extinction in the wild has been significantly regenerated such as *Chukrasia tabularis*, *Aquilaria crassna*, and *Panax vietnamensis* (Ngoc Linh ginseng).

Table 3. Changes in Forest Area and Coverage in Vietnam (1990 - 2006)

Year	Forest area (1000 ha)			Forest coverage (%)	Ha per capita
	Natural forest	Plantation forest	Total		
1990	8.430	745	9.175	27,8	0,14
1995	8.252	1.050	9.302	28,2	0,12
2000	9.444,2	1.491	10.915	33,2	0,14
2002	9.865	1.919,6	11.785	35,8	0,14
2003	10.005	2.090	12.095	36,1	0,14
2004	10.088.3	2.218,6	12.306,9	36,7	0,15
2006	10.177,7	2.486,2	12.663,9	38,2	0,15

1.3.2. The system of Protected Areas Established

- Terrestrial preserved areas:

By 2006, Vietnam had 128 protected areas (presently known as Special Use Forest being managed by MARD) situated in different eco-regions over the country, including 30 national parks, 48 nature reserves, 11 species/habitat conservation areas, and 39 landscape protection areas, comprising a total area of 2.5 million hectares or 7.6% of natural area of the country. All important forest ecosystems; endangered, rare and endemic fauna and flora species and their habitats are found in these protected areas. They are also the places for storing biodiversity and gene resources for long-term and sustainable support to the socio-economic development of the country.

Table 4. Established Protected Areas (2006)

Types of special use forest	Number	Area (ha)
National Parks	30	984,987
Protected Areas	48	1,255,612
Species/Habitat Conservation Area	11	85,849
Landscape Protection Area	39	215,287
Total	128	2,541,675

Source: Vietnam Forest Protection Department (2005)

- Wetland protected areas:

Vietnam has more than 10 millions hectares of wetlands. In 2001, MONRE proposed to preserve 68 wetland areas of high biodiversity, of which 17 areas have been acknowledged in the SUF system by Prime Minister. Some initial demonstrations for wetland management (e.g. some Ramsar sites as Xuan Thuy in Nam Dinh, Bau Sau in Dong Nai) were operated.

The Government has also approved the country's system of interior water areas, in which 45 areas such as important river sections, natural lakes, human-made reservoirs, ponds, lagoons, river mouths, bird sanctuaries, wet forests, seasonal wet grassland are listed.

Box 3. Other internationally recognized protected areas in Vietnam

- 2 World Natural Heritages: Ha Long Bay (Quang Ninh) and Phong Nha – Ke Bang National Parks (Quang Binh);
- 4 ASEAN Natural Heritages: Ba Be National Park (Bac Can), Hoang Lien National Park (Lao Cai), Chu Mom Ray National Park (Kon Tum) and Kon Ka Kinh National Park (Gia Lai);
- 2 Ramsar areas: Xuan Thuy National Park (Nam Dinh), Bau Sau (Cat Tien National Park, Dong Nai);
- 6 Biosphere Reserves: Can Gio (Ho Chi Minh city), Cat Tien (Dong Nai, Lam Dong and Binh Phuoc), Cat Ba (Hai Phong city), Red River delta coastal wetland (Nam Dinh, Thai Binh), Western Nghe An (Nghe An), Kien Giang (Kien Giang).

- Marine Protected Areas:

The MARD has submitted the Primer Minister a plan to establish a system of 15 marine protected areas (MPA) (233,974 hectares of marine-based water area and 64,147 hectares of inland area). This plan aims to allocate 2% of the country's marine area for biodiversity conservation by 2010. Currently 03 pilot MPAs is running in Hon Mun (Khanh Hoa), Cu Lao Cham (Quang Nam) and South Phu Quoc (Kien Giang).

1.3.3. Ex- situ Conservation Initially Developed

Eleven botanic gardens have been established to collect plant specimens, medicinal herbs, industrial trees, and for-breeding plants. Some are well-organised in Cuc Phuong, Tam Dao, Ba Vi, Pu Mat, Bach Ma and Chu Mom Ray National Parks. The country's two biggest botanic gardens are Thao Cam Vien in Ho Chi Minh city and Bach Thao in Ha Noi (with about 200 woodtrees each). Most of the plants collected in these gardens are native species. Many gene sources of rare native plants (e.g. fruit trees, medicinal plants...) are being conserved in farms, households and community areas.

Box 4. Some Medicinal Herb Gardens in Vietnam

Sa Pa Medicinal Herb Station with 63 species
Tam Dao Medicinal Herb Station with 175 species
Van Dien Medicinal Herb Station (Ha Noi) with 294 species
Ha Noi University of Pharmacy's Garden with 134 species
Military Medical Institute's Garden with 95 species
A Garden of medicinal plant (400m high) in Ba Vi Mountain with 150 species
Centre of Plants for Breeding in Da Lat with 88 species
Source: Report on reviewing special use forest planning, MARD (2006)

Wildlife Rescue Centres have been established in Soc Son (Ha Noi), Cu Chi (Ho Chi Minh city) and in national parks of Cuc Phuong (Ninh Binh), Cat Tien (Dong Nai), Tam Dao (Vinh Phuc). Two big zoos, Thao Cam Vien in Ho Chi Minh city and Thu Le in Ha Noi, are also responsible for raising many endangered, precious, rare, and endemic animals for tourism and scientific purposes.

Regarding to gene sources conservation activities, about 12,207 species of 115 seed plants are preserved in cold storages; 275 species of asexually reproducing plants (potato, pineapple) are kept in-vitro; 1,700 species of 36 asexually multiplying plants are kept at the fields. Since 1994, 36 species of local fruit trees have been conserved on sites. Since 1992, about 500 species of more than 30 families of bacteria, mold, single-celled algae have been collected, stored and conserved. At present, Fishery sector is conserving about 60 species of freshwater animals.

However, those positive achievements reported above are not sufficient enough to change the tendency of decrease in biodiversity in Vietnam.

1.3.4. Natural Ecosystems Degraded

- The area of natural forests of high biodiversity being decreased

Though the forest area and coverage being increased, but this is due to new plantation forests, while natural forests of high biodiversity is actually declining considerably. That so most of the remaining are poor forests and plantation forests. The primary forests being existed are about 0.57 million hectares only, scattering in Central Highlands, Southeastern region and Northern Central Vietnam. It is not feasible to regenerate rich forests because they are fragmented into small pieces and exhausted due to overexploitation. According to statistics, 62% of the existing mangrove forests are monocultural, newly-planted, and poor in biomass and biodiversity. Primary mangrove forests have almost vanished.

The most abundance and richness of forests in Central Highlands, Northern Central or Southerneast are being suffered and disconstructed. Fragmented forests become irrelevant for biodiversity development, especially those large mammals, and consequently resulting to the depletion of forest resources and ecological services.

That depletion can be seen most clearly by the fast decline in the area and quality of mangrove forests. The current area of mangrove forests in Vietnam is about 155,000 hectares only, which is 100,000 hectares less than that in 1990, and the remaining is continueing to decrease. Statistics revealed that mangrove loss in Vietnam is at very high rate, estimatedly about 4,400 ha/year. In 1943, the country had more than 408,500 hectares of mangrove forests, but this number came down to 155,000 hectares by December 2005, and most of them were newly planted. The loss of mangrove forest led to serious damages to biodiversity, especially the loss of reproduction sites of many aquatic animals; the loss of habitats of many bird species; the loss of the capability of the mangrove forests near river mouths or the sea to suspend alumining process and to reduce pollution or damages by wind.

Box 5. High quality primary forests have been decreasing

In 1943, the total forest area of Vietnam was 14.3 millions hectares and the forest cover was 43%. It should be noticed that at this time, most of the forests were high quality primary forests. During 1990-1995, the total forest area decreased seriously to 9 millions hectares and the forest cover also went down to 27-28%. The forest cover in main river valleys decreases: less than 11% in Da river valley, 23% in Red river valley, 27% in Chay river - Lo river - Gam river valley, 31% in Se San river valley, 29% in Se Re Poc river valley, 25% in Dong Nai river valley. In Ca river valley, the forest cover remains good, 39%. The forest cover in Ba river valley 5 years ago was 37% but remains less than 23% today.

In recent years, due to plantation activities, the forest cover has increased significantly. However, the area of high quality primary forests still decreases due to illegal exploitation. Besides, building infratructure in mountainous areas with high biodiversity has divided or excluded wildlife habitat and thus endangers the existence of animal community.

Source: Addaptation from the report: Vietnam - 10 Years of the Implementation of BAP 2005

- The inland freshwater ecosystem being degraded

The ecosystems of rivers, lakes, lagoons that are overexploited and endangered by infrastructure mega-projects such as building dams for irrigation and hydropower. This has led to the loss of habitats of many aquatic species, and disfunction lagoon's ecological processes, and that leading to change water circulation and facilitate salty-water intrusion into rivers, affecting local people's life.

- The marine ecosystem being depleted seriously

Most of the marine ecosystems in Vietnam is degrading seriously due to overexploitation, severe pollution by waste and oil leaking, and sedimentation. Marine environment is seriously polluted by wastes from industrial, agricultural and fishery production and domestic wastes. The seabed sediment, home to many creatures, is highly polluted in comparison to international standards. Out of 200 coral reefs investigated over the past 10 years, only 1% have high coverage rate (covering > 75%) while 31% have low coverage rate (covering < 25%). The percentage of sites with average and above-average coverage are ranging at 41% and 26% respectively (Vietnam Environment State, 2005)

The decline in quality of marine environment has resulted in habitat destruction of most marine creatures, causing damages in biodiversity, e.g. decrease in number of species, even some being locally extinct. According to statistics, 236 aquatic creatures are listed as endangered, precious, rare ones, of which 70 species are listed in Vietnam Red Book. Many of them are still objectives for exploitation.



5km of well-protected dyke with mangrove in Thai Do commune, Thai Thuy district (Photo: Phan Hong, taken on 10/10/2005)



Dyke eroded severely due to not being protected by mangrove forests (Photo: Pham Hai, Vietnamnet, 28/9/2005)

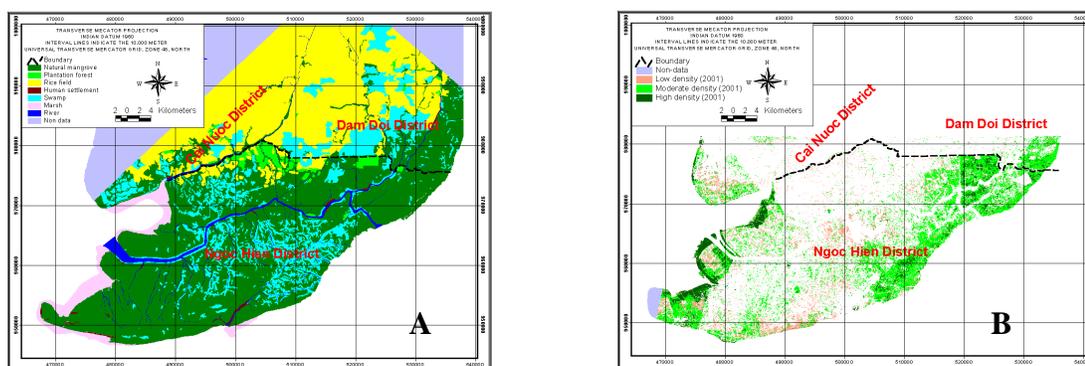


Figure 2. Changes in the forest coverage of mangrove forests and cajuput forests in Ngoc Hien district, Ca Mau province in 1965 (A) and 2001 (B)

Table 5. The decrease in coral coverage in some coastal marine in Vietnam

No.	Research area	Number of sites	Percentage of decrease in coral cover (%)	Time period
	Ha Long–Cat Ba	-	-7.1	1993 - 1998
	Cu Lao Cham	5	-1.9	1994 - 2002
	Nha Trang Bay	8	-21.2	1994 - 2002
	Con Dao	8	-32.3	1994 - 2002
	Phu Quoc	5	-3.3	1994 - 2002

Source:

1.3.5. The number of Endangered Species Increased

According to Vietnam Red Book 2007, the total number of endangered wildlife species is 882, including 418 animal species and 464 plant species, which is 161 species more than that in the period 1992-1996 (Vietnam Red Book). Nine species was classified as

“endangered - EN” species in the period 1992-1996 but now considered as extinct in the wild (EW) in Vietnam, including two-horn rhino (*Dicerorhynchus sumatrensis*), kouprey (*Bos sauveli*), tapir (*Tapirus indicus*), otter civet (*Cynogale lowei*), Chinese-ink carp (*Procypris merus*), Japanese eel (*Angilla japonica*), common carp (*Cyprinus multitaeniata*), spotted deer (*Cervus nippon*), Siamese crocodile (*Crocodylus porosus*). In regard to flora, two lady’s slipper species (*Paphiopedilum vietnamense* and *P.malipoense* var. *Hiepi*) are now extinct in the wild or completely extinct. The number of aquatic species, especially shrimp and fish of high economic values are significantly decreasing. The number of valuable freshwater fish is also declining.

Table 6. Vietnam Red Book 2007: Classification and Number of Species

Taxon	EX	EW	CR	EN	VU	LR	DD
Flora	1		37	178	210	4	
Magnoliophyta							
- Dicots			29	96	147		
- Monocots	1		4	69	34	3	
Pinophyta			4	4	18	1	
Pteridophyta				1	1		
Lycophyta					1		
Rhodophyta				5	2		
Phaeophyta					4		
Mycophyta				3	3		
Fauna	4	5	48	113	189	17	30
Mammalia	4	1	12	30	30	5	8
Bird			11	17	25	11	9
Reptile- Amphibia		1	11	22	19		
Fish		3	4	28	51		3
Non-skeletal animal			10	16	64	1	10

Note: EX: Extinct; EW: Extinct in the wild; CR: Critically endangered; EN: Endangered; VU: Vulnerable; LR: Low risk; DD: Data Deficient

1.4. Threats to Biodiversity

1.4.1. Scientifically Unrational Changes in Land Use

The concession of forested land and wetlands for agricultural cultivation, industrial plantation, and aquacultural farming, and urbanization and infrastructure development that have resulted to the loss and fragmentation of ecosystems and natural habitats and biodiversity depletion.

- Extending land for agricultural and industrial plantation, and aquacultural farming

This is one of the critical reasons for the loss of natural habitats in Vietnam. Many interior wetlands such as ponds, lakes, lagoons, and seasonal wet grassland are being threatened by the concession to irrigation construction, agricultural land, salt fields and shrimp farm (Table 7). In the North, forests are being destroyed by shifting cultivation practices, while in the Central Highlands and Southeast regions the uncontrolled extension of industrial plantation that was seen as the biggest reason of deforestation over the past decades. Agricultural land in Vietnam has increased from 6.7 millions hectares in 1990 to 9.4 millions hectares in 2002.

- Infrastructure development

The construction of hydropower reservoirs, irrigation systems, roads, electricity lines and other infrastructures has directly resulted to the degradation, fragmentation, anti-migration, and the loss of natural habitats. These have severely threatened the survive of wildlife populations. In addition, infrastructure development also engaged with physical increase of population, and indirectly leading to biodiversity depletion.

Table 7. The area of mangrove forests and shrimp farms in Ca Mau and Tra Vinh

Province	Year	Forest area (ha)	Area for raising brackish water shrimps (ha)
Ca Mau	1965	90,346	Shrimps not raised yet
	2001	38,303	202,000
Tra Vinh	1965	21,221	Shrimps not raised yet
	2001	12,797	21,510

1.4.2. Overexploitation of biological resources

Many communities in Vietnam, especially ethnic minority groups in mountainous areas, have to depend on forest resources for their survivals. Everyday they have to go to the forest to collect forest products, fuels, construction materials and do hunting for food. Due to fast changes in socio-economic development and population growth, the consumption habits of urban people are also changing. In addition, transportation network has improved that allowing local people can easily access and connect to outside markets. These changes have motivated overexploitation of timber, medicinal plants and wildlife, and therefore making natural resources become exhausted over the country.

- Illegal exploitation of timber and non-forest timber products

In order to mitigate the decrease of area and quality of natural forests, Vietnam's Government have released many regulations to control commercial logging. However, illegal logging is still happening beyond the control, targeting to all forest types, including special use forests. The construction of road for wood transporting in fact has facilitated hunting and exploiting non-forest timber products, making more pressures on wildlife populations that are already affected by habitat depletion and fragmentation.

- Unsustainable fishing

About 1/5 of the country's population depend fishery resources for their lives. Fishing contributes a great part to meet domestic consumption and exportation. However, the increase in consumption together with unsustainable fishing management have led to overexploitation of aquatic products in many regions. Many valuable marine species are decreasing seriously, such as lobster (*Panulirus* spp.), abalone (*Haliotes* spp.), *Chlamys* spp. Destructive fishing techniques such as using explosive, poison and electricity are popularly used in both inland and coastal areas, and considered a severe threat to more than 80% of coral reefs in Vietnam.

- Illegal wildlife hunting and trade

Wildlife hunting is a local practice to meet living needs and entertainment. Actually, demands of national and international wildlife trading markets that are the main reason of wildlife hunting. Wildlife being commonly traded that are usually used for making traditional medicine, such as bears, monkeys, civets, turtles, lizards, pangolins, pythons and snakes.

Many bird species are also trapped for selling out as pets. According to statistics, in 2002, the revenue of national and international wildlife trade via Vietnam was upto 3.050 tons and equipvalent to USD66 millions (Nguyen Van Song, 2003, VEM-2005).

Although Vietnam has adopted its national action plan to control wildlife trade until 2010, but this has not reached to expected results because of the market is getting bigger with increasingly profits, why capacity of government’s law-enforcement bodies is very weak, unable to stop wildlife trade in the country.

1.4.3. Introduction of new species and invasive alien species

The introduction of new species, especially those hybrid ones with high productivity, has led to decrease in both area and gene sources of native plants. This action has empoverished native gene sources, and several cropping gene were regretfully losed. For instance, in the period 1998-1999, in Krong No district of Dak Lak province 15 indigenou rice species were found losing (including 6 sticky rice species and 9 ordinary rice species) among 73 rice species locally recorded.

Box 6. Affects of Giant Mimosa (*Mimosa pigra*) on Biodiversity in Tram Chim National Park, Dong Thap

Giant Mimosa was first noticed in Tram Chim National Park in 1984-1985. By May 2000 this plant had invaded an area of 490 hectares and the number went up to 1,846 hectares in May 2002 (Tran Triet et al., 2004), especially in seasonal wetland. The biggest threat to wetlands in the Park from this plant is the rapid invasion and replacement of natural flora system which causes negative impacts on local fauna, especially the birds. That is also one of the main reasons for a fall down in number of red-headed crane, a globally endangered species, from 600-800 (birds) in mid 1990s to less than 100 in 2003 (Tran Triet and Nguyen Phuc Bao Hoa, 2002-2003).

Over the past 20 years, many invasive alien species such as yellow snail (*Pomacea caniculata*), coypu (*Myocastor coypus*), khapra beetle (*Trogoderma granarium*), giant mimosa (*Mimosa pigra*) have been introduced and caused serious damages and attracted attention from public, scientists and managers. The uncontrollable mass-development of these species have invaded and damaged other species and gene sources, broken structures and functions of ecosystems, damaged crops, lessened farming productivity and even affected human health.

Table 8. The area decrease and loss of indigenous species in 1970 - 1999

Types of plant	Area decrease (%)	Loss of indigenous species (%)
Rice	50	80
Maize, bean	75	50
Bulb/tuber/root plant	75	20
Tea, fibre plant	20	90
Fruit tree	50	70

Source: Phan Truong Giang, University of Agriculture I, 2003

The Ministry of Fishery (2005) announced a list of 41 harmful invasive aquatic species (33 fish species and 8 other species) with classified groups: White-9 species (stranger species without negative effects to native aquatic biodiversity and traditional aquaculture); Grey-18 species (stranger species with uncertainty of negative effects on aquatic biodiversity

and traditional aquaculture and thus continuous monitoring required); and Black-14 species (stranger species with harmful effects on aquatic biodiversity and traditional aquaculture and need to be strictly managed at farms and killed in natural aquatic areas).

1.4.4. Environmental Pollution and Climate Change

- Environmental pollution

At present, environmental quality in general is degrading. Many environmental components are depleted, and environmental pollution due to undisposed wastes are significant threats to biodiversity by destroying them and reducing the number of individuals, and indirectly damaging many wildlife habitats.

Pesticides are being commonly used in Vietnam, contributing to the decline of bird populations in rural areas and suburbs because they killed non-skeletal creatures which are part of the food chain. Freshwater, coastal and marine ecosystems are also polluted by various sources.

Box 7. Impacts of environmental pollution in Ha Long Bay – Bai Tu Long

Investigations on total industrial wastewater in coastal provinces in Northern Vietnam conducted by Hai Phong Sub-institute of Oceanology say that Quang Ninh province has the largest volume of wastewater (21.219 millions m³/year). Besides, the amount of heavy metals in waste is: Cu-1.55 tons/year, Pb-0.51 tons/year, Zn-32.8 tons/year, Hg-0.03 tons/year, As-0.23 tons/year, Cd-0.05 tons/year. On-site waste sources and waste from rivers increase the amount of poisons like heavy metals in seawater and marginal sea sediments. (Luu Van Dieu et al., 2000)

When analysing the tissue of 4 bivalvia species in Ha Long Bay: ‘ngao’ (*Meretrix meretrix*), ‘ngan’ (*Donsinia gibba*), ‘ngo’ (*Cyclina sinensis*) và blood cockle (*Anadara (Arca) granosa*), the research group found that the amount of Pb in these creatures (dried) is 2.5-34.5 µg/g, of Zn is 52.5-195.5 µg/g, both of which exceed the standard limit set for seafood in several countries. The amount of Hg in ngao’s tissue also exceed the allowed level. In general, the bivalvia can accumulate heavy metals at high rates into their body.

The country’s biggest industrial area for coal mining is situated in the coast near Ha Long Bay – Bai Tu Long. Studies on coal-dusty sediment in Ha Long Bay – Bai Tu Long by Nguyen Chu Hoi et al. (1999) found that coal-dust exists in most sediment with different quantity. Biggest quantity of coal-dust is often found in Cua Ong and Cua Luc Bay water areas. These areas are close to coal-dust sources as Dien Vong river system and Hon Gai river mouth run into the centre of Ha Long Bay. Rivers and streams in the North of Cua Ong and Cam Pha coal port, and the waste area near Cam Pha run into Bai Tu Long Bay.

- Climate change

Vietnam is anticipated as a particularly sensitive to global climate change, and predicted as one among ten countries will soon be seriously affected by climate change. Fragmented ecosystems might be weak to response to those changes, and might not avoid a mass loss of species at high speed.

The increase of average temperature will change geographic distribution and population structure of many ecosystems. Scientists have found evidence about species migration due to global warming. Increased temperature would facilitate forest fire, especially in peat swamp forests, dipterocarpus forests, and pine forests. Climate change together with the decrease of watershed forests and irrational water use might increasingly result more inundation, flash floods, landslide with severe impacts on the environment and human livelihoods.

1.4.5. Pressure from population growth

From 1979 to 2004, Vietnam's population has increased by 150%, from 52.7 millions to 81.6 millions people. The population is predicted to reach to 122 millions in 2050. At present, the population density of Vietnam is high, about 240 people/ km². The trend of population changes is related to internally migration within the country. Most of the migrants came to Central Highlands and Southern East regions. For instance, during the year 1990 to 1995, the population of Dak Lak province has increased by 21%, mainly by migrants from other regions.

Because the national economy much depending on natural resources exploitation, therefore when the population increased, more resources to be exploited. The biggest pressure on resource consumption directly relates to the increasing demands of land for agricultural production and husbandry raising. This obviously leads to massive land use changes and thus seriously affect natural ecosystems. As a result, biological resources become exhausted with less species, make populations decreased, and gene resources impoverished.

1.4.6. Increasing consumption of natural resources

Vietnam is in the period of transition in economy, society and population. After a decade of economic reform, the annual GDP of Vietnam increases by 7% at average, ranking at the second in Asia. The rapid economic growth has affected the country's biodiversity in various ways, especially the rise in demands of consumption and resource concession at ever-high ratios.

Table 9. Estimates of Needs for Some Wood Products

Type of product	Unit	2005	2010	2015	2020
Sawn timber	1000 m ³	2570	3589	5009	6991
Honeycomb-core (MDF)	1000 m ³	46.6	65	90.7	126.5
Okal	1000 m ³	94.4	136.2	196.7	284.2
Plywood	1000 m ³	12.9	18.4	26.1	37.2
Mine timber	1000 m ³	90	120	160	200
Paper and board	1000 tons	1232	2177	3478	5361

Source: Consultant Group for Forestry Development Strategy 2000-2020, MARD, 2005

Market demands for biological resources (wildlife, timber and non-forest timber products) are the key factor that creates pressures on those resources. Over the past few years, the control of wildlife trade has helped to mitigate illegal wildlife exploitation, hunting and trade activities. However, affected by the market economy, there violations once happened commonly over the country.

1.4.7. Shortcomings of Biodiversity Management

Assessing shortcomings of environment and biodiversity protection in Vietnam, in the Resolution No. 41-NQ/TW in 2004, the Central Communists Party stated: "...*natural resources are overexploited without planning in many cases; biodiversity is seriously threatened*". One reason for this status, besides those mentioned above, is due to the shortcomings in biodiversity management as follows:

- *State management system for biodiversity conservation less powerful*

The Government decided Ministry of Natural Resources and Environment to act as the national focal point for CBD implementation in Vietnam. This ministry is responsible for

developing and facilitating the implementation of the NBAP; and coordinating all CBD-related activities in Vietnam. Particularly, after the Biodiversity Law approved, MONRE is officially assigned to help the Government on the united state management of biodiversity in Vietnam. Authorised by MONRE, the newly-established Department of Biodiversity Conservation is responsible for consulting the Minister of MONRE to deliver biodiversity management tasks. However, this department is required adequate investment to enable them to do the assignment.

MARD is responsible for managing special use forests (forest ecosystems) and marine protected areas (marine ecosystems) while MONRE is responsible for establishing and managing wetland protected areas (wetland ecosystems). However, these ecosystems are always co-existing in a protected area NPAs. For instance, Xuan Thuy National Park (Nam Dinh) includes all three ecosystems: forest, marine and wetland ecosystems. Because of this overlapping, it is necessary to have an appropriate mechanism to unitedly manage biodiversity and protected areas in the country.

- Legislations for biodiversity conservation are unsystematic and inconsistent

Since 1995, Vietnam's Government and its Ministries have released more than 140 legal documents for biodiversity conservation and management. Some contents are prescribed in different documents in respective to different specific areas; therefore they are found overlapping, inconsistent or even conflicted. Besides, several important contents are not legislated such as genetic access and benefit-sharing, biodiversity exploitation and utilisation. The enactment of the Biodiversity Law is an opportunity to fill that gaps. To enforce this law, a wide range of under-law documents needs to be prepared and approved by the Government to guide its implementation. This is a heavy task for the national management agencies for biodiversity in Vietnam.

- Mobilising community participation for biodiversity protection is insufficient

Community participation has a significant and decisive meaning to biodiversity conservation. However, Vietnam has had very few good models of community participation in nature conservation. Necessary policies and mechanisms have not been created to help the people understand their responsibilities and benefits when participating in biodiversity protection activities.

- Planning for sustainable biodiversity development at provincial, regional and national levels is still weak

Lacking long-term and scientific planning has led to irrationality in conserving and developing natural resources in each locality and over the country. Destructing newly-planted mangrove forests for shrimp-farming is an example that how weak planning would result to terrible waste.

- Investment for biodiversity conservation is limited

In recent years, investment for biodiversity conservation has increased in total budget and diversified in finding sources. However, the efficiency of investment is low. Funding for biodiversity conservation in Vietnam, especially ODA funding, has been considered high in comparison to that in other Southeast Asian developing countries (more than 20 millions USD in 2004-2005); but few projects were noticed successful. Moreover, with the economics being grown, ODA funding for Vietnam would be less committed in a near future.

Investment for biodiversity conservation is also insufficient, when little funding is allocated to management, strategic development and legislative formulation, capacity building, and public awareness raising as well as baseline biodiversity investigation. It is estimated that nearly 90% of biodiversity funding were spent for infrastructure construction, and only 10% was directly costed for biodiversity conservation and management.

New and complex issues in biodiversity protection such as genetic access and benefit-sharing, ecosystem-based approach adoption, and terrestrial and marine biodiversity conservation have not received sufficient attention.

CHAPTER II. NATIONAL STRATEGY AND ACTION PLAN ON BIODIVERSITY

2.1. National Strategy and Action Plan on Biodiversity in Vietnam

Legal documents on biodiversity conservation in Vietnam were initially developed in early 1960s, acting as a basement for the establishment of the first protected areas in Vietnam. Since 1990s, institutional and legislative systems in Vietnam have been significantly developed and presented by several laws relating to natural resource / biodiversity management and conservation such as *Forest Protection and Development Law* in 1991 (amended in 2004); *Land Use Law* in 1993 (amended in 1998 and 2003); *Environmental Protection Law* in 1993 (amended in 2005); *Fishery Law* in 2003; and *Biodiversity Law* was recently approved by the National Assembly in November 2008.

In 1992, the Convention on Biological Diversity (CBD) was adopted. On 17th November 1994, Vietnam officially became one member of the Convention. One year later, in order to fulfill state member obligations to the Convention, the Prime Minister has promulgated the *National Biodiversity Action Plan* on 22nd December 1995 (NBAP 1995). The NBAP 1995 was considered a navigator for all biodiversity conservation activities in Vietnam from central to all local levels.

Following the NBAP 1995, in order to adapt with new situations, Prime Minister has approved the *National Biodiversity Action Plan to 2010 and Orientation towards 2020* (NBAP 2007) via Decision 79/2007/QĐ-TTg on 31st May 2007, to continue implementing the CBD in Vietnam.

Besides the NBAPs, Vietnam's Government also developed many other strategies and action plans relating to biodiversity conservation and development in Vietnam.

In conclusion, the promulgation of various laws, especially the Fishery Law (2003), the Forest Protection and Development Law (2004), the Biodiversity Law (2008), the NBAP 1995 and NBAP 1997 together with many other strategies and programs for conservation has reflected the commitment of Vietnam's Government in nature and biodiversity conservation.

Table 10. Some National Strategies, Plans, Projects and Action Programs for Biodiversity Conservation approved by Vietnam's Government

Year	Name of document	Objectives related to Biodiversity Conservation
2003	<i>Strategy to Manage the system of protected areas in Vietnam till 2010</i>	<ul style="list-style-type: none"> - Ensuring to well develop and manage natural resources, conserve biodiversity, in particular: managing PNAs and buffer zones with close and unanimous cooperation between different sectors at different levels with specific plans and mechanism. - Ensuring to conserve sources of genes, species and ecosystems; and prevent all threats from damaging these values... - Setting priority for developing management plan and quickly taking into action effectively in highly threatened places with risk of extinction of indigenous species or of damage to ecosystems...
2004	<i>Strategy to Protect national environment till 2010 and orientation till 2020</i>	<ul style="list-style-type: none"> - Recovering 50% of mining areas and 40% of severely degraded ecosystems. - Increasing forest cover by 43% of total natural land, recovering 50% of degraded watershed forests and improving forest quality. - Increasing total area of PNAs by half as much against current area, especially MPAs and wetland preserved areas. - Recovering the area of mangrove forests by 80% of that in 1990.
2004	<i>Protecting and developing benefits of marine products Program till 2010</i>	<ul style="list-style-type: none"> - Protecting and conserving biodiversity of aquatic creatures, especially precious species with high scientific and economic value; maintaining the diversity and uniqueness of aquatic ecosystems for present and future. - Recovering benefits of products from marginal seas, rivers, reservoirs and wetlands for aquacultural sustainable development.
2006	<i>National water resource Strategy till 2020</i>	<ul style="list-style-type: none"> - Protecting the intactness of aquatic ecosystems, wetlands, river mouth areas and coastal areas. - Sustainably developing water resource by promoting the protection and development of forests, firstly watershed forests.
2006	<i>Comprehensive project on primary investigation and management of marine resources and environment till 2010, vision till 2020</i>	Obtaining adequate and comprehensive data on biodiversity and benefits of marine products; planning and building a system of MPAs for sustainable development.
2007	<i>Vietnam forestry development strategy in 2006-2020</i>	<ul style="list-style-type: none"> - Establishing, managing, developing and sustainably using 16.24 millions hectares of land for Forestry; - Increasing the percentage of forestland to 42-43% in 2010 and 47% in 2020; - Ensuring large participation of different economic components and social organizations in forestry development, ecological and environmental protection, biodiversity conservation and provision of environmental services in order to help eradicate hunger, eliminate poverty and enhance the living standard of the people in rural mountainous areas.
2008	<i>Project "Protecting valuable aquatic creatures endangered to be extinct - till 2015, vision till 2020"</i>	Suspending the decline of species endangered to be extinct, then recovering and developing precious endemic aquatic species with community participation to conserve biodiversity and sustainably develop fishery and aquaculture.
2008	<i>Planning the system of interior water preserved areas till 2020</i>	Designing and building a system of 45 IWPA's; planning in details 5 IWPA's at national levels.

2.2. NBAP 1995: Implementation Results and Lessons Learnt

2.2.1. Goals and objectives

Long-term goal: protecting the abundance and uniqueness of the country's biodiversity for the sake of sustainable development.

Short-term objectives:

- Protecting Vietnam's typical and sensitive ecosystems being threatened to be narrowed or damaged by human economic activities.
- Protecting biodiversity components being threatened due to over-exploitation or ignorance.
- Discovering and developing usable values of biodiversity components in order to facilitate sustainable utilisation of natural resources for economic purposes.

2.2.2. Prioritized activities

i. Policy and legislation: Adding more sub-law documents and strengthening law enforcement through realising biodiversity-related law and sub-law performance; and adjusting or consolidating the functions and tasks of biodiversity-related state management agencies.

ii. Development and management of protected areas: effectively managing protected areas of high biodiversity; extending one more million hectares of forest and forestland in 87 SUFs; planning to establish important protected wetlands; establishing some MPAs and interior protected water areas; developing gene banks for plant, animal and microorganism; promoting integrated coastal zone management based on the principles of sustainable development; promoting solutions to conserve agricultural biodiversity, promoting on-farm conservation and encouraging farmers to participate into these activities.

iii. Raising public awareness: using public media and communication such as broadcasting, television, newspapers, poster, etc to raise public awareness about biodiversity; providing necessary information of biodiversity to authorities and policy and decision-makers; developing biodiversity conservation education programmes for schools; and integrating biodiversity education into general environmental education.

iv. Strengthening resources and capacity for government officers: prioritizing key training for those who are working on biodiversity management in different levels; building a national database of biodiversity to support biodiversity management and research nationwide; establishing a monitoring system to oversee changes of biodiversity resources and provide necessary information for government management agencies.

v. Facilitating scientific research: studying sustainable exploitation and utilisation of biodiversity components with appropriate technology; developing criteria and standards to evaluate the changes of biodiversity components to make baseline on assessing biodiversity values; studying and raising precious marine and forest animals.

vi. Supporting socio-economic development: biodiversity protection plans must generate long-term benefits for the country and motivate local people living nearby protected areas to accept and support as they can benefit from those plans.

vii. Promoting international cooperation for biodiversity conservation: appealing international organizations, foreign governments and individuals to provide technical and financial support and staff training to realise biodiversity action plans.

Prioritized activities of the NBAP 1995 mentioned above have been reflected the orientations and practices of Vietnam towards achieving the CBD objectives.

Table 11. The NBAP 1995's Prioritized Activities in accordance to CBD articles

Prioritized activities in the NBAP 1995		Related CBD articles
i.	Policy and law	-
ii.	Establishment and management of protected areas	- Article 6: General measures for conservation and sustainable use
iii.	Public awareness	- Article 13: Public education and awareness
iv.	Capacity building & staff training	- Article 12: Research and training
v.	Scientific research	- Article 12: Research and training - Article 16: Access to and transfer of technology - Article 18: Technical and scientific cooperation
vi.	Socio-economic aspects in planning	- Article 21: Financial mechanism
vii.	International cooperation development	- Article 5: Cooperation - Article 17: Exchange of information

Sources: NBAP 1995 and CBD articles

2.2.3. Key achievements

After 10 years of implementing the NBAP 1995, a set of remarkable achievements are made as follows:

- A network of state management agencies centrally and locally established responsible for biodiversity conservation and CBD implementation;
- Many legislative documents for biodiversity management, conservation and use developed and enacted that creating a legal framework for CBD implementation. Key documents include Environmental Protection Law (amended 2005), Fishery Law (2003), Land Use Law (amended 2003), Forest Protection and Development Law (amended 2004), Tourism Law (2005), Resources Tax Ordinance (1998), Plants Seeding Ordinance (2004), and Breeding Animals Ordinance (2004). Many policies, strategies, programmes and plans relating to biodiversity conservation were promulgated and implemented such as: Environmental Protection Strategy to 2010 and Orientations towards 2020 (2003), Management Strategy for Protected Areas System in Vietnam to 2010 (2003), National Action Plan on Wetland Conservation and Sustainable Development to 2010 (2004), Five Million Hectare Reforestation Programme to 2010 (1998), Vietnam Agenda 21 and National Strategy of Comprehensive Growth and Poverty Reduction;
- Forest coverage, and the number and area of protected areas fastly increasednation-wide. In 2006, there were 128 protected areas covering 2.5 million hectares, making up 7.5% of the country's natural area. Many protected wetlands and marine protected areas were approved or pending for approval by the Government;
- Scientific researches on biodiversity: biodiversity survey and investigation taken place in all important national parks and nature reserves; many new species discovered such as 'Sao la' (*Pseudoryx nghetinhensis*) and Giant munjack (*Megamuntiacus vuquangensis*); 34 livestock species (pig, chicken, duck...) well-conserved;

- International cooperation for biodiversity conservation: Vietnam actively participated in international conventions and organizations/associations such as: the CBD, ASEAN Senior Officials on Environment (ASOEN), ASEAN Centre for Biodiversity (ACB); organized forums for exchange of information of and experience on biodiversity with other ASEAN countries. Moreover, Vietnam received significantly technical and financial supports for biodiversity conservation via bilateral cooperation agreement with governments of developed countries and international organizations;
- Funding for biodiversity conservation is increasing, of which ODA takes a significant proportion equivalent to 20-30% of total ODA funding for environmental protection in Vietnam. Through investment projects, conservation activities were effectively implemented, particularly those prioritized activities given in the NBAP 1995. Funding from national budget for biodiversity conservation also increased considerably, showing the Government's attention given for biodiversity issue, typically exemplified by the Five Million Hectares Reforestation Program. Investment mechanism was reformed such as establishing Vietnam Environmental Fund and Vietnam Conservation Fund. These funds set good opportunities for supporting biodiversity conservation throughout the country.

Box 8. Network of state management agencies for biodiversity conservation at central level

Ministry of Natural Resources and Environment is acting as national focal point for CBD, responsible for preparing and implementing NBAPs, coordinating all CBD-related activities, coordinating all biodiversity conservation activities in Vietnam;

Environmental Protection Agency under MONRE is the technical agency that helps Ministry leaders to fulfill the responsibilities of CBD national focal point and all biodiversity conservation activities;

Ministry of Agriculture and Rural Development manages all activities related to protected areas in SUF system; manages forest resources; conserves biodiversity in agriculture; manages all activities to sustainably develop marine products benefits; does research/investigation on aquatic biodiversity; develops plans to establish and manage a system of MPAs and interior protected water areas;

Provincial People's Committees are responsible to manage local biodiversity resources.

Source: Assessment of the CBD implementation in Vietnam 1995-2005

2.3. Introduction to the NBAP 2007

Positive results obtained from ten year implementation of the NBAP 1995 has been much encouraging. However, along with the country's socio-economic development, there were many significant changes in different sectors. In order to response to new circumstance, Vietnam's Government decided to develop a new NBAP and then approved it in 2007.

2.3.1. Specific objectives until 2010:

a. Terrestrial biodiversity conservation and development:

- Consolidating, improving and developing SUF system (contributing to forest coverage at 42-43%);
- Regenerating 50% of degraded watershed forests;
- Effectively protecting precious, rare, endangered wildlife species;
- Three nature reserves will be acknowledged as World Natural Heritages or Biosphere Reserves, and five nature reserves will be acknowledged as ASEAN Heritages.

b. Marine and wetland biodiversity conservation and development:

- Increasing the total area of nationally and internationally important wetland and marine preserved areas to more than 1.2 millions hectares;
- Regenerating 200,000 hectares of mangrove forests;
- Establishing five wetlands that eligible for acknowledgement as internationally significant wetlands (Ramsar site).

c. Agricultural biodiversity conservation and development:

- Completing and announcing the conservation system in order to effectively conserve precious, rare, valuable native species of crops, livestock and microorganisms.

d. Sustainable use of biological resources:

- Establishing and developing models of sustainable use of biological resources; controlling, preventing, suspending and excluding the exploitation, trade and consumption of precious, rare and endangered wildlife species;
- Controlling, assessing and preventing invasive alien species;
- Examining 100% of imported species and gene sources.

e. Capacity building in state management of biodiversity and biosafety:

- Reviewing and strengthening state management capacity for organisation system, especially national focal points and other agencies in charge of biodiversity and biosafety, to fulfill management requirements to these tasks;
- Developing and improving institutional system, policy and legislative documents on management of biodiversity and biosafety;
- Strengthening physical and technical resources, emphasizing to staff training for the sake of meeting requirements on professional knowledge and skills for biodiversity conservation and development, and biosafety management;
- Educating and raising public awareness about biodiversity conservation, development and sustainable utilisation; ensuring 50% of population regularly accessing biodiversity and biosafety information and participating in making decisions to release Biosafety Certificate;
- Ensuring 100% of modified-gen organism and MGO-products to be risk-assessed and labeled before appearing on market, and continued to be strictly monitored by laws.

Compared to the NBAP 1995, the advancement of the NBAP 2007 is that its goals given are broader and each goal consists of specific and measurable objectives. Besides, this plan includes orientations for biodiversity conservation towards 2020 such as completing a set of mechanisms, policies and legislations on management of biodiversity and biosafety; completing a system of protected areas; regenerating 50% of degraded typical and sensitive ecosystems; conserving, developing and sustainably using biodiversity of genes, species and ecosystems; effectively managing biosafety and fulfilling all international commitments on biodiversity.

In general, most of national goals for biodiversity conservation given in the NBAP 2007 are basically consistent with strategic goals of the CBD (Annex II). However, due to actual status and circumstance of Vietnam as a developing country, some specific objectives in the NBAP 2007 cannot be seen as strategic goals of the CBD and vice versa. For example, the objective 11 in the CBD is for developed countries to provide technical and financial aids to developing countries, so it is absolutely excluded from the NBAP 2007 of Vietnam. On the other hand, some objectives related to the completion of legal framework and management system that are necessary for a developing country like Vietnam, and thus, are definitely put into the NBAP 2007 but not considered a strategic objective of the CBD yet.

Table 12. Comparison of the NBAP 2007 objectives and the CBD objectives

NBAP 2007 objectives		CBD objectives	
G 1: Conserve and develop terrestrial biodiversity			
SO 1.1	Improve and develop the SUF system (achieve a forest coverage of 42-43%)	SO 1.1 SO 1.2	Conserve at least 10% of ecoregion area in the world Protect areas with special biodiversity significance
SO 1.2	Regenerate 50% of degraded watershed forests	SO 1.1 SO 1.2	Conserve at least 10% of ecoregion area in the world Protect areas with special biodiversity significance
SO 1.3	Effectively protect precious plant and animal species endangered to be extinct	SO 1.3	Improve the situation of endangered species
SO 1.4	Three PAs will be acknowledged as World Natural Heritages or Biosphere Reserves, and five PAs will be acknowledged as ASEAN Heritages	-	-
G 2: Conserve and develop marine and wetland biodiversity			
SO 2.1	Increase the total area of nationally and internationally significant wetland and marine protected areas to more than 1.2 millions hectares	SO 1.1 SO 1.2	Conserve at least 10% of ecoregion area in the world Protect areas with special biodiversity significance
SO 2.2	Regenerate 200,000 hectares of mangrove forests	SO 1.1 SO 1.2	Conserve at least 10% of ecoregion area in the world Protect areas with special biodiversity significance
SO 2.3	Build five wetlands eligible for acknowledgement Ramsar sites	-	-
G 3: Conserve and develop agricultural biodiversity			
SO 3.1	Complete and announce the conservation system to effectively conserve rare, precious, valuable native species of agricultural plants, livestock and microorganisms	SO 3.1	Conserve the diversity of genes of plants, livestocks, and wildlife in addition to maintain local and indigenous knowledge
G 4: Sustainably use biological resources			
SO 4.1	Build and develop models that use biological resources sustainably; control, prevent, suspend and exclude the exploitation, trading and consumption of precious, rare and endangered species	SO 4.1	Sustainably manage products from biodiversity resource
SO 4.2	Control, assess and suspend strange invasive creatures	SO 6.2	Plans to manage alien species with possible threat to ecosystems and other species
SO 4.3	Examine 100% of imported species and gene sources	SO 6.1	Measures to control alien invasive species
G 5: Enhance the government's management capacity for biodiversity and biosafety			
SO 5.1	Improve and strengthen management capacity for relevant system	-	-
SO 5.2	Complete a set of mechanism, policy and legal documents	-	-
SO 5.3	Strengthen technical resources and staff training	-	-
SO 5.4	Educate and raise public awareness	-	-
SO 5.5	Ensure 100% of GMOs and GMO products are examined for risk assessment before appearing	-	-

Sources: NBAP 1995 and CBD articles

2.3.2. Main tasks

a. Terrestrial biodiversity conservation and development:

Developing a united classification system; reviewing and planning SUF system; adopting sustainable forest management models; continuing to implement effectively the 5 Million Hectares Reforestation Program; Studying and nominating eligible PAs; Adopting ecosystem-based approaches for biodiversity conservation; developing ex-situ conservation models, especially for precious, rare, endemic species; paying attention to capture-breeding and planting precious, rare, economically and socially valuable species; identifying species being threatened to be extinction and planning them for ex-situ conservation.

b. Marine and wetland biodiversity conservation and development:

- Establishing, developing, and managing the system of marine and wetland protected areas through developing and implementing national and provincial strategies and plans for integrated coastal zone management; developing and implementing planning for marine and wetland protected areas;
- Regenerating and developing marine and wetland ecosystems: recovering and developing significant coral reefs and seagrass; investigating and assessing the current status of mangrove forests; recovering coastal protection mangrove forests; recovering wetland ecosystems in environmentally vulnerable areas.

c. Agricultural biodiversity conservation and development:

Investigating, inventory, and assessing gene sources of cropping plants, livestock and microorganisms; developing and implementing agricultural biodiversity conservation and development programme; developing models to conserve and develop precious, rare, native plants and livestock; applying advanced technologies to conserve and develop agricultural biodiversity.

d. Sustainably use of biological resources:

- Sustainably using timber and non-forest timber products: inventory and evaluate current status of exploitation and use of timber and non-forest timber products; apply advanced technologies to process forest products to increase their utility values and save natural resources; develop and implement an action plan to conserve and sustainably develop non-forest timber products; investigate and develop indigenous knowledge, especially knowledge about using wild species for medicine, and processing forest products; control and strictly punish illegal exploitation, trade and consumption of biological resources, especially wildlife, wood and coral; exclude destructive exploitation manners to sensitive ecosystems; conduct comprehensive solutions to control wildlife trade of precious species and traditional non-wood products;
- Sustainably utilise marine and wetland resources: promote wise protection and use methods in internationally and nationally significant wetlands; set up a monitoring network for the environment, natural resources, and biodiversity at important marine and wetland areas;
- Suspend the decrease in number of populations of precious, rare and endangered wildlife species.

- Manage and strictly control invasive alien species: investigate and make statistics of invasive alien species; develop and implement a strategy to prevent, control invasive alien species, and solve problems caused by them;

- Develop ecotourism: investigate, assess potentials and plan for a ecotourism network nation-wide and ecotourism models in some nature reserves and national parks, giving priority to Cat Ba, Phong Nha – Ke Bang, Cat Tien, Phu Quoc national parks and Can Gio nature reserve; propose and implement effective solutions to minimize negative impacts of tourism on biodiversity.

e. Enhance state management capacity towards biodiversity; and control MGOs and MGO-products in order to protect the people's health, the environment and biodiversity:

- Unite state management for biodiversity and biosafety for MGOs and MGO-products. Consolidate and enhance state management capacity for organisation system. Strengthen state management capacity for government officers about biodiversity and biosafety;

- Develop, promulgate and consolidate the system of mechanisms, policies and legislative documents for biodiversity management, in which biodiversity conservation contents should be taken into account when making official approvals for socio-economic development plans, projects and programs;

- Develop, promulgate and consolidate the system of mechanisms, policies and legislative documents for biosafety management for MGOs and MGO-products;

- Develop and strengthen physical and technical resources and human resources for scientific research in modern biotechnology and biosafety; do researches for creating, using and safely managing MGOs and MGO-products. Successful research and apply scientific solutions and advance technologies to conserve and develop biodiversity and biosafety;

- Construct, upgrade, improve, provide permission and operate effectively lab systems including those national exclusive labs that are able to analyse, assess risks and identify correctly GMOs and GMO-products;

- Develop, operate and unitedly manage a information and database system about biodiversity and biosafety;

- Develop and operate a Biosafety Clearing House.

2.3.3. The role of the NBAPs in implementing the CBD articles

Main objectives and tasks of the NBAPs focus on 5 objective groups: (i) Conserve and develop terrestrial biodiversity; (ii) Conserve and develop marine and wetland biodiversity; (iii) Conserve and develop agricultural biodiversity; (iv) Sustainably use biological resources; and (v) Enhance state management capacity for biodiversity and control GMOs and GMO-products in order to protect public health, the environment and biodiversity. Detailed contents of these objectives and main tasks of the NBAPs mentioned in sections 2.3.1 and 2.3.2 that are equivalent to the implementation of some CBD articles such as Article 5 (Cooperation); Article 6 (General Measures for Conservation and Sustainable Use), Article 8 (In-situ Conservation), Article 8h (Alien species), Article 8 (Indigenous knowledge and related issues), Article 9 (Ex-situ Conservation), Article 10 (Sustainable Use of Biodiversity Components), Article 12 (Research and Training), Article 13 (Education and Community Awareness), Article 16 (Access to and Transfer of Technology), Article 17 (Exchange of Information) and Article 18 (Technical and Scientific Cooperation).

2.4. Overview of the Implementation of National Biodiversity Related Strategy and Action Plans

Since the NBAPs and related strategies released, their implementation have more or less successfully reached to planned objectives, particularly towards integrating biodiversity conservation and development into the sectoral strategies, plans and programs of natural resources and environment, agriculture, fishery, industry and commerce, etc.

2.4.1. Biodiversity Conservation and Development

- The development of reforestation helped suspend the decline of forest area and increase forest coverage. By 2006, the total forest area increased quickly, covering 38.2% of the country's territory, which is 11% more than that in 1990. Mangrove forests are being reforested in several places such as Can Gio Biosphere Reserve (BRA) where 75,740 hectares of mangrove being existed, most of which is newly-planted (VEM, 2005)
- Extension and development of protected area system: a system of protected areas was established throughout the country with 128 SUFs covering 2.5 millions hectares, making up 7.6% of total area. A system of 45 interior water protected areas of high biodiversity was approved in 2008 by Prime Minister. A proposal to establish 15 marine protected areas also submitted to the Government for approval.
- Besides the national PAs system, two new biosphere reserves acknowledged by UNESCO in 2007 are Kien Giang and Western Nghe An, rising the number of biosphere reserves in Vietnam by 6; two other biosphere reserves, Ca Mau and Hoi An – Cu Lao Cham, are being proposed (National MAB, 2008). Three nominated areas as Natural Heritage that are Ba Be, Cat Tien and Phong Nha – Ke Bang national parks. Four nominated as Ramsar sites that are Tram Chim, Ba Be, U Minh Thuong and Ca Mau.
- Conservation activities outside PAs are also taken into consideration. PA's buffer zones are seen as management tools. Alternative livelihoods for buffer zone's people are introduced by Integrated Conservation and Development Project (ICDP) in order to reduce their dependence on the forests.
- Ex-situ conservation initially developed in positive forms such as botanic gardens, wildlife rescue centres, centre for species conservation and genetic materials.
- The implementation of programs and project targetting to protect precious, rare and endangered wildlife species has generated certain effectiveness, providing a considerable products for domestic consumption and exportation:
 - Suspend the decrease in elephant populations and conserve isolated elephant populations;
 - Establish and protect several reproduction sites for sea turtle in Con Dao and Nui Chua (Ninh Thuan);
 - Some native livestock and poultry species are retrieved such as Dong Cao chicken, Ho chicken, Son La Thuoc chicken, Y pig, H'mong pig, and Phan Thiet sheep.
 - 14 freshwater and marine fish species; 4 mollusc species: snout otter clam, sweet snail, Ben Tre fish-shell; 3 crustacean species: green crab, black tiger shrimp and pink shrimp that have been successfully studied for man-made reproduction for commercial purposes;

- Many plants threatened to extinction in the wild such as *Chukrasia tabularis*, *Aquilaria crassna*, *Panax vietnamensis* (Ngoc Linh ginseng) have been regenerated through reforestation programs.

2.4.2. Sustainable use of biodiversity resources

- Promote the development of models of community-based sustainable use of biological resources in PAs. Implemented projects to support local people in Cuc Phuong National Park to reproduce orchids, and to train local people in ecotourism services in other protected areas.
- Agricultural and fishery development strategies have gained certain successes, then helped to reduce pressures on natural resource exploitation. Researches on aquacultural development helped increase aquacultural productivity based on man-made reproduction and intensive farming, contributed 42% to the total aquacultural products of Vietnam.
- Promulgated the list of precious and rare livestock species forbidden from export, and actively suspended exploitation and trade of precious, rare and endangered wildlife species to reduce their consumption.
- Every year, the Fishery sector occasionally returns breeding fish and shrimps back to the sea or reservoirs. To sustainably develop fishery, the sector has established the areas that are forbidden to fish or allow seasonal fishing in some reproduction sites in coastal marine.
- Conducted some researches to investigate, assess and propose solutions to manage and prevent invasive alien species. A number of pilot experiment procedures for imported alien plant and animal species have been announced.
- Ecosystem-based landscape planning for biodiversity conservation have been introduced in many regions in Vietnam in order to promote the establishment of conservation corridors linking PAs.
- Recently, several investigations and studies on anthropological botany have been conducted to review and develop indigenous knowledge of mountainous minority ethnics about their experience of using resources for lives.

2.4.3. Implementational Budget

The finance invested for biodiversity conservation in Vietnam is mainly from 2 sources: national budget and ODA, and some others from communities or income from PAs.

The national budget allocated to biodiversity conservation appears in two forms: central budget and provincial budget. In recent years, this funding is increasing through the governmental programs and projects in this sector such as the 5 Million Hectares Reforestation Programme, Vietnam Environmental Fund, Vietnam Conservation Fund, Aquatic Resource Reproduce Fund of MARD.

ODA source takes an important part in the total investment. Normally, the ODA spent for biodiversity conservation makes up 20-30% of that spent for environment protection.

Since 2006, Vietnam's Government committed to allocate 1% of the national budget for environment protection. However, average spending for biodiversity makes up only 0.4% of the total budget.

2.5. Shortcomings in the NBAP implementation

- Functions and tasks of those state management agencies that are not clearly defined or overlapped. There are difficulties in integrating biodiversity conservation in socio-economic development policy and programs;
- Many legislations for biodiversity conservation have been enacted, but conflicts and overlapping are still existed. Some important contents is not adequately guided such as: genetic access and benefit-sharing, biodiversity resource exploitation and utilisation;
- Infrastructure and management capacity of PAs have been improved, but still do not meet actual requirements. Planning for buffer zone in PAs meet difficulties due to the lack of scientific research to identify the border;
- Scientific researches on biodiversity conservation now is still unsystematic, usually found with species identification; there are very few researches on conservation, exploitation and sustainable use of biodiversity resources; advance techniques have not been applied in researches yet;
- Biodiversity monitoring and assessment are unsystematic and discontinuous, lacking guidance to collect, process, save and share information about biodiversity information;
- Investment in biodiversity conservation lacks concentration and effectiveness.

CHAPTER III. INTEGRATING BIODIVERSITY INTO SECTORAL AND INTER-SECTORAL OPERATION

3.1. Integrating Biodiversity into inter-sectoral plans, programs and policies and regional development

The contents of environmental protection, natural resource management, and biodiversity conservation that have been integrated into national plans, programs and policies. The followings are some examples:

- Strategies for hunger eradication and poverty reduction:

In order to obtain the Millenium Development Goals, Vietnam's Government released Strategy for Comprehensive Growth and Poverty Reduction to 2010, in which it aimed at protecting environment in general and biodiversity in particular; increasing forest coverage from 33% to 43% in 2010; focusing to solve environmental degradation and conserving natural resources.

- National Sustainable Development Strategy:

On 17th August 2004, Prime Minister promulgated Decision 153/2004/QDD-TTg on the Orientations for Sustainable Development in Vietnam (Vietnam Agenda 21), in which prioritized objectives and tasks for biodiversity conservation are defined as followings:

- Exploit appropriately, use economically and effectively natural resources; suspend, prevent, deal and control environment pollution effectively; protect national parks, PAs, biosphere reserves and conserve biodiversity; recover degradation and improve environmental quality.

- One of prioritized areas in this strategy is forest protection and development and biodiversity conservation. Some sectors with potential impacts on the environment such as energy, mining, construction, transportation, and tourism must develop their own action plans to ensure sustainable development, in which paying particular attention to application of advance technologies of exploitation and processing, so that natural resources are saved, pollution and emissions are reduced, renewable energy is encouraged to use, and the environment in exploited areas is improved.

Through the National Agenda 21 and the NBAPs, three measures and methods should be taken into consideration: i/ prepare regional biodiversity planning to generate conservation framework for development activities; ii/ strictly enforce the procedures of environmental impacts assessment (EIA) to ensure that ecological standards and conservation guidance are respected; and each locality should maintain its natural areas, and iii/ policies to require payment from those who use biodiversity and ecosystem services for economic purpose. The EIA of infrastructure construction projects and industrial works provided measures to integrate information of potential impacts on biodiversity of the projects, and thus proposed changes in site selection, project design, solutions for impact reduction and compensation.

- National action plan to combat desertification

On 2nd September 2006, the Prime Minister released Decison 204/2006/QĐ-TTg about the National Action Plan to Combat Desertification period 2006-2010 and Orientation towards 2020. This plan includes tasks for sustainable management of forest, water and land resources; gradual improvement of the people's income and progress in hunger eradication, poverty elimination and implementation of people's settlement in living and production.

- Planning to response to climate change

On 6th April 2007, Prime Minister released the Decision 47/2007/QĐ-TTg to approve a plan to implement the Kyoto Protocol of the United Nations Framework Convention on Climate Change in the period 2007-2010. One of the plan's objectives that is to manage, exploit and use natural resources appropriately and effectively; to protect environment, resources and climate; and to reduce greenhouse gases emission.

- Regional development plans

Vietnam has 8 different geographical regions. In each region, those areas with high biodiversity are selected for establishing PAs. The formation of green or biodiversity corridors, linking PAs together that are considered as an effective way to reduce ecological fragmentation of wildlife habitats and their moving paths. Thus, it is necessary to soon develop comprehensive biodiversity planning, regional and provincial biodiversity action plans.

Central Annamite is the region of highest biodiversity in Vietnam. In 2004, the Minister of MARD approved "Biodiversity Conservation in the Central Annamite Ecoregion 2004-2020". The long-term goal of this program is: adopting integrated methods to manage, protect and recover natural resources and biodiversity in Central Annamite in sustainable way in the industrialization and modernization process; raising awareness of conservation, developing management capacity, and improving living standards of local people. MONRE supported some provinces such as Quang Tri, Quang Nam, Binh Dinh, Dong Nai and Central Highlands to develop provincial biodiversity action plans in order to harmonize the biodiversity development with other regional and local socio-economic development plans.

Environmental tools are widened to be able to conduct strategic environment assessment (SEA) for regional economic development plans. For example, SEA was conducted for the Regional Economic Development Planning in the Central (from Thua Thien-Hue to Binh Dinh). In the SEA report, ecological and biodiversity issues of sensitive areas in the region were collected for assessment and prediction of possible impacts of each industry sector. SEA results play one basement for development planners to make adjustment suitable to actual situation, in order to harmonize development and environmental protection as well as biodiversity conservation.

In general, the contents of biodiversity and environment protection are reflected in viewpoints, objectives, contents and prioritized programs of inter-sectoral and regional development policies in Vietnam.

3.2. Integrating Biodiversity in Implementing International Conventions

- Ramsar Convention

MONRE is defined as the national focal point for the implementation of CBD and Ramsar Convention in Vietnam. Besides, other ministries/agencies also set up (a) institutions that completely or partly responsible for environment management.

In 2006-2007, the Environment Protection Agency drafted a Wetland Planning. In 2007, the agency developed a draft decision for MONRE Minister on Criteria for Wetlands Evaluation and Selection; a draft Decision for MONRE Minister to release guidance to Typical Wetland Planning; a draft Decision for MONRE Minister to release Vietnam

Wetland Classification System. So far 2 Ramsar sites were acknowledged in Vietnam: Xuan Thuy National Park (Nam Dinh) and Bau Sau (Cat Tien National Park, Dong Nai).

- Convention on International Trade in Endangered Species (CITES)

After signing this Convention, necessary activities to implement the Convention were given in action plans of related ministries and sectors, especially the cooperation between MARD and MONRE. The National Biodiversity Action Plan proposed to strengthen controlling wildlife trade in Vietnam until 2010 (2004). To effectively manage wildlife trade, it requires an appropriate approach to be applied nation-wide, as well as capacity building for state management agencies, and education and awareness raising for the people, especially those in mountainous areas.

Besides, in order to implement this Convention, Vietnam functional agencies promoted international cooperation, signed many bilateral and multilateral agreements with partners from neighbour countries.

- Convention on Protection of World Natural and Cultural Heritages

After joining the Convention, Vietnam have received acknowledgement for several World Natural Heritages, ASEAN Heritages and Biosphere Reserves. (See Box 3, Page 15)

- Cartagena Protocol on Biosafety

In order to implement the Protocol, beside setting one important objective *Strengthen the Government's management capacity for biodiversity and biosafety* in the NBAP (2007), the Government released Decision 102/2007/QĐ-TTg to approve the project "Enhancing management capacity for biosafety of GMOs and GMO-products until 2010, to implement the Cartagena Protocol on Biosafety".

- United Nations Framework Convention on Climate change, 2007-2010

The Prime Minister released Decision 47/2007/QĐ-TTg to approve the plan to implement the Kyoto Protocol in the United Nations Framework Convention on Climate Change, 2007-2010.

- United Nations Convention to Combat Desertification

On 2nd September 2006, Prime Minister released Decision 204/2006/QĐ-TTg about the National Action Plan to Combat Desertification in 2006-2010 and Orientation until 2020.

3.3. Integrating Biodiversity in Related Sectors

Recently, economic sectors such as agriculture, forestry, fishery or tourism started considering biodiversity conservation as a development strategy. The integration of biodiversity conservation in related sectoral policies, strategies, plans and programs is reflected in decisions of the Government and Ministries to approve plans and programs or to release policies related to biodiversity (Annex 2), especially in agriculture, forestry and fishery sectors. Many objectives and tasks given in these plans or programs are more specific and thus, help clarify those given in the NBAP.

3.3.1. The Sector of Natural Resources and Environment's "National Strategy for Environment Protection to 2010 and Orientations towards 2020" was approved by the Government in 2003. One objective given in this strategy is to maintain ecological balance at high level, such as: recover 50% of mining areas and 40% of severely degraded ecosystems; Increase forest coverage to 43%, recover 50% of degraded watershed forests and improve

forest quality; Promote dispersal planting in community; Increase the rate of using clean energy to 5% of total annually used energy; Increase total area of PAs to more 1.5 times of that at the present, especially marine and wetland protected areas; Regenerate the area of mangrove forests to 80% of that in 1990. To achieve these objectives, a series of tasks are identified as follows: Protect and develop nature reserves and national parks; Develop forests and increase the area of vegetation; Protect biodiversity; and particularly promote the application of economic tools for environment management.

In 2006, Prime Minister has approved the “National Strategy for Water Resources until 2020”. One task given in this strategy is to protect the integrity of aquatic, wetland, marine and estuary ecosystems. Besides, another task to sustainably develop water resources is strengthening forest protection and development with priority given firstly to watershed forests to maintain and develop water sources of rivers and reservoirs.

The Environmental Protection Law 2005 includes regulations for SEA and EIA addressing people in charge of preparing reports; guidance for writing reports; report contents; appraisal and approval of reports; as well as the responsibilities to following recommendations given in EIA/SEA reports and monitoring the compliance.

The EIA requirements has identified a set of objects relating to biodiversity must be considered, including those projects using part of land or negatively affecting nature reserves, national parks, cultural-historical monuments, natural heritages, ranked beautiful sites; those projects with risks to water resources of rivers, coastal areas, ecosystem-protected areas; those projects relating to infrastructure construction in economic zones, industrial zones, high-tech areas, export processing zones or traditionally professional villages;

August 9th 2006, Vietnam’s Government promulgated the Decree 80/2006/NĐ-CP providing detailed regulation and guidance for implementing selected articles of the Environment Protection Law. Following this degree, 120 types of projects that are required to prepare EIA reports, such as: national focal projects; projects of using all or apart of the land or having negative impacts on PAs, national parks, cultural-historical monuments, natural heritages, ranked beautiful sites; projects with potential negative impacts to water sources of rivers, coastal areas, ecosystem-protected areas; projects to build nuclear power plants, thermonuclear power plants or nuclear reaction piles.

The Circular No.08/2006/TT-BTNMT dated May 8th 2006 by MONRE provides guidance to do “Strategic Environmental Assessment, Environmental Impacts Assessment and Environmental Protection Agreement”. This circular specifically regulates the requirements of situation description, objectives, scoping of impacts, trends of changes of natural components that must include biodiversity contents. MONRE also worked with Fishery sector to develop guidance on EIA report preparation for coastal aquacultural farming; worked with the Construction Ministry to develop guidance on EIA report preparation for planning and construction projects.

However, some projects usually delayed to prepare and submit EIA reports, thus caused impacts for decision making process. Moreover, the limitation in technical capacity and information has also down the intergration of biodiversity into EIA reports.

Especially in 2004, the Central Communist Party Committee has released the Resolution No.41-NQ/TW about promoting environment protection efforts to support the

country's industrialization and modernization. This resolution reflected how the top leaders aware of the importance of environmental protection. Later, Prime Minister has also released the Decision No.34/2005/QĐ-TTg dated on February 22nd 2005 approved the Governmental Action Plan to make the Resolution 41 operationalised. Nature conservation and biodiversity protection are those tasks addressing in this action plan, including:

- Strengthening marine, coastal and island environmental protection; protecting and developing forests, especially primary forests, special use forests, protection forests and mangrove forests. Strictly protecting PAs and national parks.
- Developing, approving and implementing the National Biodiversity Action Plan for the period of the country's industrialization and modernization.
- Strictly following regulations to protect precious, rare and threatened wildlife species which have been officially listed; protecting and preventing the loss of precious native genetic sources; preventing the invasion of alien species and those GMOs that negatively affected the environment and people.

3.3.2. The Sector of Agriculture and Forestry has integrated conservation and sustainable use into national laws, policies and programmes such as Forest Protection and Development Law (1991 and 2004), Land Use Law (1993 and 2003), the policy of "Natural Forests Closure", and forest land allocation programmes. Several policies were reformed during the implementation of the Five Million Hectares Reforestation Programme (Programme 661). This 12 year programme costs about 2.5 billions USD, aiming to increase the forest coverage in Vietnam to 43% by 2010 in addition to conserve biodiversity, eradicate hunger, eliminate poverty and develop national economy.

Vietnam's Strategy for Forestry Development from 2006-2020 was approved by Prime Minister in 2006. This Strategy targets to comprehensive forestry development regarding to all dimensions from management, protection, development, sustainable resources use, reforestation, forest product exploitation and processing, environmental services, ecotourism... It requests forestry development must contribute to economic growth, hunger eradication, poverty reduction and environment protection. Sustainable forest management, utilisation, and development are regarded as the foundation of forestry development. And forestry development should promote the policy to socialize forestry to attract more investment sources for forest protection and development.

Based on those points of view, the Strategy's goals towards 2020 is to establish, manage, protect, develop and sustainably use 16.24 millions hectares of planned forestry land; increase forested land coverage to 42-43% in 2010 and 47% in 2020; ensure active participation of different economic partners and social organizations in forestry development in order to maximise contributions to socio-economic development, environmental protection, biodiversity conservation, provision of environmental services, hunger eradication, poverty elimination, rural upland livelihood improvement, and national security.

3.3.3. The Sector of Fishery promulgated a range of regulations and developed several large-size projects and programs for sustainable protection and development of aquacultural resources. To implement the NBAPs, since 1997, the sector has taken place the Off-shore Fishing Programme, aiming to reduce over-exploitation and protect aquacultural resources in coastal marine, which have been exhausted for past many years, while accessing to off-shore resources that not yet exploited previously. Thank this programme, the productivity of off-shore aquacultural products of Vietnam has come up 1/3 of the total

national productivity. Particularly in 1998, the former Ministry of Fishery prepared Overall Fishery Development Plan to 2020, which has put attention to serious risks of coastal ecosystem degradation and future opportunities of the sector. Recently, the development of aquacultural farming has considerably reduced pressures on natural exploitation of marine resources. According to statistics, the productivity of aquacultural farming in 2004 was about 1.15 millions tons, making up 37.4% of the total harvest productivity. According to the plan, this rate is estimated to 60% in 2010.

Conserving precious, rare and economically valuable marine species is brought into action by the sector, particularly those studies on man-made reproduction and commercial-raising of scientific and economically valuable species. In 2008, Vietnam's Prime Minister approved the project of "Protection of Precious, Rare and Endangered Aquatic Species to 2015 and Vision Towards 2020". This project aims to prevent the increase of endangered species, and gradually recover and develop endemic, precious and rare species in Vietnam based on promoting community participation to contribute to biodiversity conservation and sustainable fishing development. This decision created legal framework and directions to provide important funding to protect of genetic resources of precious, rare and valuable aquatic species in Vietnam.

Also, in 2008, the Prime Minister promulgated a decree to approve the Management Regulations for Vietnam's Internationally and Nationally Important Marine Protected Areas. This decree regulates activities in MPAs; identify funding sources for MPAs. In addition, the planning of MPAs and Interior Water Protected Areas has also been developed since 2006 is pending for approval by the Government.

3.3.4. The Sector of Tourism has developed Vietnam Tourism Development Strategy 2001-2012 and approved by Prime Minister in 2002. This Strategy proposes a wide range of implementational solutions, including integrating resource and environmental training and education into teaching programmes of all tourism education systems; raising awareness on natural protection and the environment for tourists and local people through public media and communication channels.

In 2007, the Ministry of Culture, Sports and Tourism has approved the National Tourism Action Plan 2007-2012 rightafter Vietnam joined WTO. This plan includes various contents of biodiversity and environment protection, ranging from environmental protection and sustainable tourism development; cooperation with MONRE to develop the projects of environmental protection, capacity building for monitoring and responding to environmental problems in national tourism sites; enforcing inspection and monitoring of natural resource exploitation and environmental protection for sustainable tourism development; formulation of sustainable tourism development strategy in response to Vietnam Agenda 21, formulation of environmental protection programme for tourism sector, and integrating the programme into education plans, information and communication; development and application of environmental standards for tourism.

3.3.5. The Sector of Industry and Trade has developed several legal documents, and approved by the Government, addressing the requirements of biodiversity and environmental protection for mining, chemical production, construction material production projects through EIA report preparation.

3.3.6. The Sector of Science and Technology has developed Vietnam Science and Technology Development Strategy to 2010, which was approved by Prime Minister in 2003. This strategy suggests to study and verify usable values of all resources in Vietnam in order to make baseline for proposing projects and selecting effective exploitation technologies. The strategy focuses on studying potentiality of biodiversity and other valuable resources which are being exhausted due to over-exploitation and environmental degradation.

3.3.7. The Sector of Finance released documents to guide formulating budget proposal, expenditure management, and budget use to ensure the performance of policies, strategies and plans with specific cost norm and finding sources.

The Inter-ministrial Circular No.01/2008/TTLT-BTNMT-BTC dated on 29th April 2008 provides guidance to develop budget proposal for environment protection from state budget allocated from environmental sector.

3.3.8. The Sector of Training and Education developed and submitted the Prime Minister to approve the project that to integrate environmental protection contents into the the national education system.

All of the legal documents mentioned above has reflected the committment of Vietnam's Government to strengthen biodiversity conservation and sustainable utilisation by integrating biodiversity conservation into all sectoral development.

3.4 Mechanisms for integrating biodiversity contents

- **Formulation:** Many key stakeholders, the government, social organizations, schools, institutes, scientists and public, have participated to input, develop, and disseminate legislative documents, strategies, and plannings.

On 3rd June 2008, at the 3rd Conference, the National Assembly, term XII, has approved the Law on Legal Document Promulgation. The Article 4 of this law includes regulations about giving comments during the formulation of legal documents as: i/ Vietnam Fatherland's Front and its member organizations, other organizations, state organizations, people's army forces, and individuals have rights to express their opinions for the draft of legal documents; ii/ During the legal document formulation, the host agencies and related organizations have to support for those organizations and individuals to contribute their opinions about the document draft; and facilitate to collect opinions from those who might be directly affected by the documents; iii/ All opinions contributed for the draft legal documents must be collected and taken into consideration when finalizing the draft.

- **Implementation:** Assigning appropriate tasks specified to each sector, define cooperation schemes (e.g. steering committee, focal point for monitoring, financing mechanism, guidance for implementation, community participation).

The Decree No.144/2005/NĐ-CP released by the Government provides the guidance for cooperation between administration agencies to develop and monitor the implementation of policies, strategies, and plans. This Decree regulates principles, approaches and responsibilities for cooperation among administration agencies in formulating policies, strategies, and plans (all refered as projects) according to the jurisdiction of promulgation, approval, or ratification of the Government, the Prime Minister, Ministers, Heads of

Ministerial Agencies, Heads of Governmental Agencies; People's Committee and Provincial People's Committee Chairmen,; and in monitoring the implementation of those projects once they are in effect ((referred as implementation overseeing).

The cooperation among administration agencies in formulating and overseeing project implementation must ensure that each agency is properly implementing in accordance to their functions, responsibility and authority; ensure the quality and disciplines during project implementation; promote responsibility and effectiveness to deal with inter-sectoral performance; and ensure operational effectiveness of administration system from central to local levels.

In principle, the cooperation among administration agencies in formulating and overseeing project implementation must follow the following principles: project's contents must be relevant to the functions, responsibility, and authority of collaborator agencies; the objectivity must be maintained during the cooperation; assure the professional requirements, quality and time of the cooperation; assure the disciplines during the cooperation; promote individual's responsibility of the leaders of the host organizations, collaborator organizations and of all participant staff/officers.

The host agency decides to comply the following cooperation manners to formulate projects: collecting opinions by documents; organising meetings, conducting surveys and investigations; establishing inter-agencies cooperation institutions; providing information required by the host agency or collaborator agencies, and informing collaborator agencies about those issues related to their functions, responsibility and authority.

The host agency decides to comply the following cooperation manners to oversee project implementation: organizing checking missions, collecting ideas and opinions about those issues need to be checked; working directly with agencies to be checked; providing and examining necessary information; reviewing and evaluating the implementation of policies, strategies, plans, and plans.

The Decree also regulates the responsibility of Ministers, Heads of ministerial agencies and governmental agencies; Provincial People's Committee Chairmen; Government Office, Ministry Offices and ministerial agency offices, governmental organization's offices, provincial People's Committee offices enforcing and overseeing cooperation missions.

The Decree No.140/2006/ND-CP released by the Government regulating environmental protection contents in the formulation, appraisal, ratification, and implementation of development strategies, plans, programs and projects. The Article 4 of this decree about General Principles regulates: the environmental protection must be respected and considered when initiating the project ideas, developing project directions, overseeing through the process of formulating, appraising, approving, and implementing development strategies, plans, programs and projects to ensure economically, socially and environmentally sustainable development. Short-term benefits should not be the reason for long-term serious damages to the environment.

- Monitoring, Evaluation and Inspection

On 13th February 2007, Prime Minister has promulgated the Decision No.232/QĐ-TTg releasing the plan for checking the implementation of the Government's policies, strategies, plans, and plans in 2007. According to the plan, 15 sectors will be checked,

including investment, corporates; transportation; saving performance and wasting prevention; administrative reform; healthcare; post and telecommunication; education and training; landuse and housing; science and technology; natural resources and environment; tourism; agriculture and rural; population and social issues; urban planning and management; governmental officer training. The decision also regulates the evaluation contents, host agencies for evaluation, main collaborator agencies, and scheduling for each specific sector.

3.5. Ecosystem-based approach for integrating biodiversity into sectoral and inter-sectoral strategies, plans and programs

Ecosystem-based approach in biodiversity management that is an integrated method to manage ecosystem components including land, water, biological resources as well as the mutual relationships among them in order to promote conservation, sustainable use and equal benefit-sharing of those resources and ecological services.

The term “ecosystem-based approach” is likely new to Vietnam, but has been studied and introduced in forestry and fishery sectors, localities and some PAs such as U Minh Ha national park, Can Gio biosphere reserve, Tam Giang and Cau Hai lagoons. Activities taken place in Can Gio and the cajuput Mekong Delta wetlands can be seen as typical demonstrations for using ecosystem-based approaches as: integrated conservation, equal benefit-sharing and sustainable use of natural resources and identified products and services; land and forest allocation for local people for plantation and product management.

Vietnam has identified landscape conservation as a new method for PA management. Therefore, many PAs have been planned and managed based on landscape or biological region, which reflect the ecosystem-based approach addressed by the CBD. This approach extends conservation activities beyond the strictly-managed core zone of PAs. This conservation requires to establish green and/or biodiversity corridors linking PAs. One task of the NBAP 2007 also mentions the application of ecosystem-based approach to protect biodiversity and establish biodiversity corridors linking PAs.

Ecosystem-based approach has been adopted by facilitating green corridors linking PAs in Thua Thien-Hue, Quang Nam, and Gia Lai provinces, promoting integrated coastal zone management in Nam Dinh, Thua Thien-Hue and Ba Ria – Vung Tau provinces; ecoregion conservation in Managing with ecoregion-based approach in Initiative for biodiversity conservation for Central Annamite Conservation Initiative; landscape-based watershed management for Ca river (Nghe An), A Vuong river (Quang Nam), and Dong Nai river; ecosystem-based management of Bau Sau wetland, Cat Tien national park; ecosystem-based biodiversity conservation and sustainable use in Mekong river Lower Basin; application of ecosystem-based approach for biodiversity conservation in Yokdon national park (Dak Lak) and Ba Be national park (Bac Kan) (VIE/95/G31&031 project).

Box 9. Green corridor project in Thua Thien-Hue

Green Corridor is the forest belt linking Phong Dien Nature Reserve and Bach Ma National Park, covering an area of 130,000 hectares, distributing at medium and lowland mountains. This forest corridor protects part of the Huong river's watershed forests, provides environmental services for fishery sector and flooding reduction. The project also provides economic incentives for local stakeholders so that they actively join in natural forest management and biodiversity conservation.

Source: VEM, 2005.

According to specialists' evaluation, some obstacles that are usually emerged towards ecosystem-based approach application for biodiversity conservation in Vietnam as follows:

- Stakeholder participation in planning and management is not highly effective.
- Terminologies and definitions are inconsistently used regarding to "ecosystem-based approach".
- Decentralisation and sectoral cooperation are usually weak due to unadequate capacity.
- Unadequate awareness and understandings about ecosystem functions, and lacking of professional agencies that are able to guide ecosystem-based approach.
- Lacking guidance for using ecosystem-based approach as a tool to integrate biodiversity management into development activities.
- There are still many shortcomings in solving conflicts among conservation priorities, requirements or solutions.

International and Vietnam experiences reveal that the most common obstacle in biodiversity management and conservation is the lacking of consensus to establish a focal institution with full authority for consistent implementation.

3.6. Some achievements of biodiversity integration into sectoral and intersectoral policies

The integration of biodiversity conservation in sectoral and intersectoral sectoral development policies has initially generated certain achievements, especially those economic sectors considering biodiversity conservation a strategy for development.

The Five Million Hectare Reforestation Programme (Programme 661), being implemented from 1998 to 2010, has raised the forest coverage rate from 11% in 1990 to 38.2% in 2006. Forest proportion has been more rational, represented by 2 millions hectares of special-use forest, 5 millions hectares of protection forest and 8 millions hectares of production forest. More employment has been created, contributing to hunger elimination and poverty reduction in mountainous areas.

Programmes of biological resource raising, native forest plantation, and wildlife capture-breeding for sustainable development have achieved certain achievements. At the end of 2006, about 50 wildlife animal species and tens of wild plant species have been raising in 316 farms and 1658 households mostly for commercial purposes. However, as a CITES's state member, the wildlife capture-breeding in Vietnam is being strictly guided and managed.

The Off-shore Fishing Programme aimed to reduce overexploitation and protect marine resources in coastal areas which have been exhausted for many years. As a result, the off-shore harvest productivity by 2004 reached to one third of the total fishery productivity.

Programmes and projects of aquacultural farming and precious, rare aquatic species conservation have achieved encouraging results, in which the productivity of aquacultural raising increased, many valuable marine species studied for man-made reproduction and commercial farming.

Biodiversity Monitoring: in 2007, the Environment Protection Agency drafted Overall Plan for Nation-wide Biodiversity Monitoring to 2020; Indicator Development of Biodiversity Monitoring of Forest, Wetland and Marine Ecosystems; and Technical Guidance and Economic and Technical Framework for Biodiversity Monitoring. Several on-site monitoring systems has been established in nature reserves and national parks, such as: Soil and Water Resources Monitoring in the Northwest Limestone Region by Geographic Institute (1998-2003); Monitoring Distribution and Changes of Vietnam's Coastal Wetlands by Hai Phong Institute of Oceanology (1996-1999); Forest Fire Monitoring and Bear Micro-chipped Monitoring by Forest Protection Department; Rhinos Monitoring in Cat Tien National Park; Primate Monitoring in Phong Nha – Ke Bang, Na Hang, Cuc Phuong, Cat Ba National Parks; Sea Turtle Monitoring in Con Dao National Park; Asian Elephant Monitoring by WWF; Monitoring and Evaluation System for Forest Regeneration in Central Annamitte.

Biodiversity Education, Training and Awareness: The education and training network for biodiversity conservation managers and technical staff in Vietnam has been widely developed, including universities, colleges, institutes and professional centres. About 20 universities offer undergraduate degree in biodiversity-related majors such as biology, environment management, forestry, agriculture and fishery. Many of them have graduate programs such as Ha Noi University of Natural Sciences, Ha Noi University of Pedagogy, Ha Noi University of Agriculture I, University of Forestry, Nha Trang University of Aquaculture, HCMC University of Ago-Forestry.

About 200 undergraduates in biology, 200 undergraduates in biotechnology, 400 pedagogical undergraduates in biology, together with 5000-8000 agricultural, forestry and aquacultural engineers completed their education every year in Vietnam. Estimatedly 50 master students and 10 PhD students are annually trained in the majors of zoology, plantology, ecology, biodiversity and natural resource management; and another number are trained abroad via bilateral scholarship programs or cooperation projects.

The contents of biodiversity are also included in current curriculums of primary and secondary education programmes. The contents of biology, botany, tree plantation and care techniques, soil and water environment that are being integrated into natural and social science subjects (grade 2, 3, 5), sciences-techniques (grade 4 and 5) and ethics (grade 4). Also, the contents of biology and animal life, ecosystem components, agricultural techniques, people and the environment that are included in biology and geography subjects (grade 6, 7 and 9) and technology (grade 9).

Several universities provides training programmes and sessions in wetland management and sustainable use, such as the Joint-training Programme in Wetland Management by University of Can Tho, National University in Ho Chi Minh city and Maihidol University). Many conferences and short courses on wetland were also organized for environmental management officers at central and local levels.

Development of EIA Reports for infrastructure development project has been enforced, in which biodiversity issues were taken into consideration in compliance to EIA regulations. However, follow-up checking activities (monitoring, inspection) were not fully complied, and consequently resulted to various environmental problems such as waste water discharged into Thi Vai river by Vedan Company Ltd in Dong Nai or by Miwon Company freely discharged into Red river.

Development of Community-based Conservation Management Demonstrations. Different forms of community-based forest management has been commonly existed in mountainous areas. The most common traditional community forests are known as holy forests, rainforests, watershed forests, village forests or kinship forests.

A demonstration of community-based sustainable use of mangrove forests that was developed and polited at Dong Rui (Quang Ninh); Ecological shrimp-farming demonstrated in Tien Hai (Thai Binh); Wetland conservation and sustainable use demonstrated in Van Long (Ninh Binh).

Several demonstrations of rice field mixed fish-raising has been sited in Gia Thanh, Gia Tan, Lien Son communes of Gia Vien district (Ninh Binh); the model of co-raising shrimp and tilapia fish in Con Chim, Thi Nai lagoon (Binh Dinh) has maximised profits from wetland use by aquacultural production. Community-based ecotourism also established in the buffer zone of Xuan Thuy National Park (Nam Dinh) and U Minh Thuong (Kien Giang). Community-based livelihood development and sustainable use of natural resources were developed in wetland areas of K9 village of Phu Duc commune and Phu Lam village of Phu Thanh B of Tam Nong district (Dong Thap).

The demonstration of community-based sustainable livelihood and natural resources conservation piloted Lang Sen Wetland Protected Area that has helped improve local livelihoods in the buffer zone, raise awareness about wetlands, and test co-management mechanism. In addition, several other models such as coral reef breeding and conservation in Area 1 of Ghenh Rang commune in Quy Nhon city and grassland conservation and exploitation in Phu My commune of Kien Luong district (Kien Giang) were also conducted to promote sustainable exploitation and utilisation of wetland resources.

CHAPTER IV. CONCLUSION: PROGRESS REACHING TO 2010 GOALS AND IMPLEMENTING STRATEGIES

A. Progress reaching to 2010 goals

1. National goals

In order to conserve biodiversity resources, Vietnam's Government has proposed a set of national goals to the year 2010, including 5 following major goals:

- a/ Conserve and develop terrestrial biodiversity
- b/ Conserve and develop marine and wetland biodiversity
- c/ Conserve and develop agricultural biodiversity
- d/ Sustainably use biological resources
- e/ Strengthen state management of biodiversity and biosafety

To obtain those above goals, Prime Minister and Ministries have approved or promulgated many policies, strategies, action plans relating to biodiversity conservation and development.

Most of the national goals given in the NBAP 2007 that are basically consistent with the strategic goals of the CBD. However, as Vietnam is a developing country in transition circumstance, some objectives regarding to capacity building and legislative improvement are incorporated to the objective of strengthening national legislative framework and resource management system for the country.

2. Progress to achieve 2010 goals

2.1. Protecting biodiversity components

2.1.1. Promoting biodiversity conservation of ecosystems, habitats and communities

- Since 1995, appropriate biodiversity policies released by Vietnam's Government together with the effort of ministries, sectors, local authorities and all the people, have suspended the decrease in forest area and increased forest coverage over the time. From 1990 to 2006, the total forest area quickly increased in respective to the forest coverage rate increased from 27.8% to 38.2%. So it believes that the objective of rising national forest coverage to 42-43% by 2010 is realistic. However, half of the increased forests are plantation forest with poor biodiversity.

Besides the increase of inland forests, mangrove forests are also recovered and reforested in some areas. Typically, mangrove forests in Can Gio Biosphere Reserve has reached to 75,740 hectares, but most of them are newly-planted (VEM, 2005).

- The system of established PAs is increasingly developing and their management system is improved and effectively operated. A system of 128 SUFs already established throughout the country, covering 2.5 millions hectares, making up 7.6% of the total area. In late 2008, Prime Minister approved a system of 45 interior water protected areas, and another system of 15 marine protected areas has also been proposed for the Government's approval.

- Besides the national system of PAs, 2 biosphere reserves in Kien Giang and Nghe An were also acknowledged by UNESCO in 2007, and thus rising the number of biosphere reserves in Vietnam by 6. Two other biosphere reserves, Ca Mau and Hoi An-Cu Lao Cham, are profiled for UNESCO's proposal (National MAB, 2008). Three Natural Heritage

proposals, Ba Be, Cat Tien and Phong Nha – Ke Bang national parks, were also documented. In 2002, the Bau Sau wetland of Cat Tien national park was acknowledged as the 2nd Ramsar site in Vietnam. In 2007-2008, Environment Protection Agency has prepared documents for 4 new Ramsar proposals of Tram Chim, Ba Be, U Minh Thuong and Ca Mau.

2.1.2. Promoting species conservation

Along with the establishment and development of PA system, forest regeneration and the increase of forest area have contributed to effective protection of species diversity. Some species conservation projects targeting to elephant, tiger, primates being implemented has supported to suspend the decrease in number of species individuals and populations. Sea turtle reproduction sites were established and protected in Con Dao. In 2007, Vietnam Red List and Red Book, following the new criteria of IUCN, with 882 listed species have been published and announced.

2.1.3. Strengthening genetic conservation

Besides strengthening genetic conservation for wildlife fauna and flora, reforestation programmes have promoted the plantation of native species, ex-situ conservation, and genetic bank development. A number of precious local plant and livestock species have also been retrieved and developed such as Dong Cao chicken, Ho chicken, Son La Thuoc chicken, Y pig, H'mong pig, Phan Thiet sheep, Doai orange, Dien pomelo, and Doan Hung pomelo.

2.2. Promoting sustainable use of biodiversity resources

The development of community-based sustainable use of biological resources models has brought positive results for biodiversity conservation and environmental protection while creating more employment and income for the people living in PAs. Agricultural development has led to the increase in rice productivity, the development of aquacultural farming, and yet help reduce pressures on exploitation of natural creatures.

Releasing the list of precious livestock species prohibited from export, together with the effort of authorities in preventing wildlife exploitation and trade that help reduce the consumption of biological resources and the impacts on wildlife.

Every year, the fishery sector occasionally return breeding shrimp and fish back to the sea or reservoirs. To sustainably develop fishery, some areas in coastal marine was selected for seasonal fishing permission.

2.3. Targeting to threats to biodiversity

In the past years, various studies on invasive alien species investigation, assessment, and interventions for management and prevention were conducted. Several publications addressing invasive alien species and their threats were developed and disseminated. The agriculture and fishery sectors have released the examination procedures of imported alien species before bringing to large scale production in Vietnam.

The National Strategy for Environmental Protection to 2010 and Orientations towards 2020, which was approved by the Government in 2003, has encouraged the application of economic tools in environment protection. The Agenda 21 provided more strategies and vision to integrate environmental issues into the Government's plans and programmes. The Environment Protection Law was amended in 2005 and therefore, EIA requirements are regularly complied by infrastructure construction projects. Remarkably, biodiversity issues

are integrated into the requirements of EIA and environment monitoring, and considered as serious criteria for verification.

2.4. Maintaining biodiversity products and services to support human life

Ecosystems and their communities are supply sources of food, medicine, materials, environmental protection, and social services for human-beings. In Vietnam, biological resources, through many generations, have supported sustainable livelihoods, food security, health care, especially for poor people in remote areas. Vietnam's Government has paid much attention to those products and services, and they are developing mechanisms to encourage and finance to support environmental service supplies, especially in Pas and watershed forests in order to ensure local people can fairly benefit from their participation in biodiversity conservation and environmental protection.

2.5. Preserving indigenous knowledge, innovation and reality

The Institute of Ecology and Biological Resources (IEBR), the National Institute of Medicinal Materials, Ha Noi University of Pharmacy, and the Institute of Social Sciences have conducted several researches on anthropological botany for many years in order to investigate, assess, conserve and develop indigenous knowledge of mountainous ethnic communities in natural resource protection and utilisation. As a result, hundreds of medicinal plants and family-handed remedies were collected from Dao, Nung, Tay, and H'mong populations in mountainous areas in Vietnam. Some positive traditions of these populations like protecting holy forests, holy watersheds (that home to many wildlife fauna, flora and aquatic creatures) that are maintained and developed by local authorities. Several traditional festival like Cau ngu (praying for fish) of coastal populations are still organized every year.

2.6. Ensuring equal sharing of benefits from genetic resources

Ensuring community's rights and participation in reviewing policies, strategies, plannings, programmes and investment projects related to PAs is regarded as one approach to implement the NBAP 2007 that has been gradually adopted and received initial results. On the other hands, policies of the Government reflected in sectoral development strategies and projects, have appreciated equal-sharing of benefits from biodiversity resources and ecological services. Supported by a project, local people in Cuc Phuong National Park can plant orchids. In other PAs, local people are trained to deliver ecotourism services. The 327 and 661 reforestation programmes have allocated land, forests, and water bodies for local people to manage and exploit for their productions.

2.7. Ensuring competitive resources

Financing to invest for biodiversity conservation in Vietnam mainly comes from 2 sources: national budget and ODA. Recently, it can also come from communities and PAs' income.

National budget allocated to biodiversity conservation appears in two forms: central budget and provincial budget. In recent years, this funding is increasing through the governmental programs and projects in this sector such as the 5 Million Hectares Reforestation Programme, Vietnam Environmental Fund, and Vietnam Conservation Fund.

Investment for biodiversity conservation from the Government and international donors tends to increase. ODA sources take an important part in the total investment. Normally, ODA funding for biodiversity conservation makes up 20-30% of that spent for environmental protection in general. By 2003, foreign aids for natural resources management

were USD749,969,804, making up 28% of the total budget for environmental protection, in which 18% of this amount came to biodiversity conservation (Report on ODA for Environmental Protection, Environment Protection Agency and UNDP, 2003). Data from VEM (2005) says that in the period 1996-2004, total investment for biodiversity conservation was about USD259 millions, including USD81,6 millions (31.5%) from the national budget and USD177 millions (68.5%) from international donors. Total investment for biodiversity conservation in 2005 reached to USD51.8 millions, that ten times bigger than that for the whole investment in previous decade.

Vietnam's Government committed to allocate 1% of the national budget for environmental protection since 2006 onwards. However, average spending for biodiversity conservation makes up only 0.4% of the total national budget.

3. Indicators for Assessing Progresses

The CBD members are invited to develop their own biodiversity indicators. Since 2005, through a DANIDA funded project, the Environment Protection Agency has developed a national set of environmental indicators, which was then announced by the MONRE for official use. Meanwhile, a set of indicators for biodiversity monitoring was just started developing since 2007. The development of that national set of environment indicators can be taken as indicators for reaching to the national strategic goals.

Most of the specific objectives given in the NBAPs or other plans, strategies and programs related to biodiversity conservation, protection and development in Vietnam are all quantified, for examples forest coverage by 2010 at 42-43%, regeneration of watershed forests to 50%. These quantitative objectives can be used as indicators to evaluate the progress of proposed objectives.

Developing legislative system for environmental protection in general and biodiversity conservation in particular that is very important for developing countries. Therefore, legal documents can also be considered as indicators for the progress evaluation. Since 2004, MONRE has worked in cooperation with different agencies to prepare the Biodiversity Law and it was then approved by the National Assembly in late 2008.

4. Constraints and Difficulties

Despite of certain progresses made in reaching to the national 2010 goals as well as the CBD strategic goals, various difficulties, mostly in management issues, are still existed such as:

- Legislations for biodiversity protection are unsystematic and inconsistent plus many important contents not yet included in current legislations such as genetic access and benefit sharing, biodiversity exploitation and utilisation.
- Unadequate participation of community in biodiversity conservation leads to poor law enforcement in general. Deforestation and wildlife trade are still going on.
- Lacking professional agencies capable to manage biodiversity resources based on innovative approaches and methods.
- Investment for biodiversity is limited and untargetted; usually focusing on infrastructure construction rather than for scientific research, management and protection activities.

B. Progress reaching to strategic goals of the CBD

In order to achieve those objectives of the CBD Strategic Plan, the National Biodiversity Action Plan has been developed and then approved by Prime Minister in 2007. Specific objectives to 2010 are presented within 5 major goals (see Chapter II). In order to obtain these objectives, Prime Minister and Ministries have clearly identified the contents and programmes for biodiversity conservation and development in Vietnam.

1. The CBD pioneering in all international biodiversity issues

The implementation of national objectives for biodiversity conservation and development reflects the effort of Vietnam's Government and people to fulfill the CBD's articles, COP's decisions and strategic objectives. The achievements so far are due to mobilization of national resources together with financial aids from international organizations, bilateral cooperation and non-governmental organizations.

Vietnam has implemented the Cartagena Protocol on Biosafety to strengthen the state management capacity about biodiversity, GMOs and GMO-products in order to effectively protect the people's health, environment and biodiversity.

Vietnam also joined regional and international organizations and forums related to biodiversity, such as Scientific and Technological Supervision Committee for the CBD, Capacity Needs Assessment Programme for International Convention Implementation, Lower Mekong River Wetland Biodiversity Conservation Programme, Indochina Biodiversity Forum, Global Tiger Forum, and Mekong Sub-region Biodiversity Conservation Corridor Initiative.

Biodiversity conservation and development has been integrated in most sectoral or regional plans and programmes for socio-economic development and Government's policies; EIA and Strategic Environmental Assessment (SEA) requirements.

2. Strengthening finance, human resources, and sciences and technology for CBD implementation

The state budget for biodiversity conservation is increasing every year. The Government has committed to allocate 1% of the national budget for environmental protection including biodiversity conservation. Total investment for biodiversity conservation in 2005 can reach to USD51,8 millions, that ten times bigger than that invested for previous decade. This expresses the priority given by the Government to this mission, e.g. typically the 5 Million Hectare Reforestation Programme. Supports from governmental and non-governmental organizations have helped enhance capacity in management and researches on biodiversity conservation in Vietnam.

3. The NBAPs and integrating biodiversity into sectoral strategies and plans in reaching to the CBD goals

In order to fulfill the Government's commitment with the CBD, Vietnam has prepared and released the NBAP 1995. In 2007, to adapt with the changing situation, Vietnam continued releasing the NBAP to 2010 and orientation towards 2020.

Contents of environment, natural resources and biodiversity protection have been integrated into national policies, plans, and development programs.

The contents of biodiversity conservation, forest ecosystem protection, wetland ecosystem protection, sustainable use of natural resources and biodiversity, as well as management capacity building, community awareness that are much addressed by social campaigns and national focal programmes such as Hunger Eradication and Poverty Elimination Programme, Sustainable Development Programme, Forestry Development Programme.

4. Raising awareness of biodiversity values and the CBD, and creating better social commitment for CBD implementation

In order to raise awareness about the importance of biodiversity conservation and the CBD, Vietnam has implemented several programmes, strategies, and plans, and organised many forums, meetings, and communication campaigns throughout the country.

Communication is used as an effective tool to raise public awareness and understanding about environmental protection. In 2002, Vietnam approved the *Biodiversity Awareness Raising Programme from 2001 to 2010* that specified by the following long-term goals:

- Raising awareness and knowledge of all societies about the role of biodiversity for sustainable socio-economic development, biodiversity conservation, establishing biodiversity conservation ethics, and using it as one resource for social development.
- Developing standards for the relationship between human-beings and the environment in order to improve living quality and sustainable development.

In 2007-2008, MARD formulated the *National Communication Strategy for Community-based Exploitation and Protection of Marine Resources*. This Strategy aims to provide information, educate and raise public awareness about marine resource protection and sustainable fishing.

C. Conclusion

1. Overall assessment of the CBD and its Strategic Plan Implementation in Vietnam

1.1. In general, most of the national goals for biodiversity conservation given in the NBAP 2007 are consistent with the strategic goals of the CBD. Vietnam has achieved certain results after a period of implementing CBD through performing national objectives:

- Biodiversity conservation and sustainable use, equal sharing of benefits from biodiversity that are controversial issues that need to be specially taken into account in the next steps. Increasing forest coverage, improved terrestrial PA system, planned interior water PA system, proposed MPA system that have reflected Vietnam's successes in nature conservation in past years.

- Community-based nature conservation has been certainly progressed. Many models of community participation for conservation have been implemented with positive results, showing the effectiveness of state policies in biodiversity conservation.

- Biodiversity conservation is integrated in priority programs of inter-sectoral policies as well as the implementation of international conventions. The contents of biodiversity conservation, forest ecosystem protection, wetland ecosystem protection, sustainable use of natural resources and biodiversity, as well as management capacity building, community awareness that are much addressed by social campaigns and national focal programmes such as Hunger Eradication and Poverty Elimination Programme, Sustainable Development Programme, Forestry Development Programme.

- The Government and ministries have promptly promulgated legislations in respect to biodiversity conservation.

- Agricultural development such as increases in rice products, poultry, and aquacultural products has helped reduce pressures on natural exploitation, and thus protect biodiversity and aquatic communities.

1.2. As a developing country, developing and improving the system of legal documents, policies and institutional framework to implement national goals towards biodiversity and environment protection that are necessary. Beside Environmental Protection Law, Forest Protection and Development Law, Fishery Law, and Land Use Law, there are more than 100 legal documents related to biodiversity conservation and development released by the Government and relevant Ministries. The most important one is the Biodiversity Law, which was just approved in late 2008. These documents are importantly legal foundation to work for national objectives towards biodiversity conservation.

2. Lessons learnt

The releases of the NBAP 1995 and NBAP 2007 have reflected the active participation of Vietnam to implement the CBD. However, to further improve biodiversity conservation in next periods, Vietnam has made itself lessons learnt about the CBD implementation as follows:

- Cooperation among ministries, and between central and local agencies for biodiversity conservation is not close, thus, the implementation of the plan is not really effective.

- Monitoring, inspection and evaluation of law enforcement are still weak, lacking cooperation among stakeholder agencies, thus did not improve environmental quality as it is expected, meanwhile weaken law enforcement of legal documents.

- The integration of biodiversity and environment protection into socio-economic development programmes is initially introduced but not regularly yet, that so limit the actual outcomes of biodiversity conservation.

- Lacking specific relevant policies and operational mechanisms for equal sharing of benefits from biodiversity resources, thus unabling to promote large-scale community participation in conservation activities.

- Unadequate communication, education and public awareness raising, thus biodiversity-related law enforcement is limited, and putting more pressures on biodiversity.

- Regular cooperation with the CBD Secretariat, GEF and other partners should be strengthened to promote information update and mutual understanding among CBD state members in order to obtain more information, technical and financial supports to implement the CBD.

3. Priority Activities

The national objectives of the NBAPs 1995 and 2007 as well as the strategic goals of the CBD have been basically reaching. In order to achieve the national goals and the CBD goals, the following priority activities are recommended:

1. Soon releasing guiding documents for the implementation of the Biodiversity Law 2008, especially those to clearly identify the functions of managing biodiversity of involving ministries and local authorities;
2. **Raising public awareness** in implementing the Biodiversity Law and improving capacity for state management agencies regarding to biodiversity at central and local levels;
3. Creating **mechanism for connection and cooperation** among management and implementation agencies of biodiversity protection and focal institutions of biodiversity conservation.
4. Developing a national inter-sectoral **programme to study, preserve and develop biodiversity, which is in response to climate change**;
5. Developing **a monitoring programme and united management of biodiversity database**; Conducting **baseline investigations of biodiversity resources** at national scale;
6. **Promoting integration of biodiversity conservation** in national, ministerial, and local plans, programmes and projects; Priorities should be given to a/ regional biodiversity planning, b/ strict implementation of EIA for infrastructure construction projects and strict follow-up, c/ development of user-payment policies for commercial exploitation of biodiversity and ecological services.
7. Sustainably developing **the system of protected areas** in Vietnam through combining those objectives of protection and conservation. Priority giving to assess and develop opportunity for communities to be benefited from ecosystem service provision at PAs and watershed forests.
8. **Enhancing the rights and capacity of local communities** so that they will actively participate in biodiversity conservation and protected area management; To do these, community awareness, livelihood improvement, legal framework development, operational mechanisms for communities to be participated and benefited from biodiversity conservation and development, particularly in PAs. Allowing local communities to traditionally use natural resources in PAs and practise their livelihoods based on consensus on planning, zoning and monitoring requirements.
9. Enhancing **management and gradual suspendance of illegal wildlife trade**.

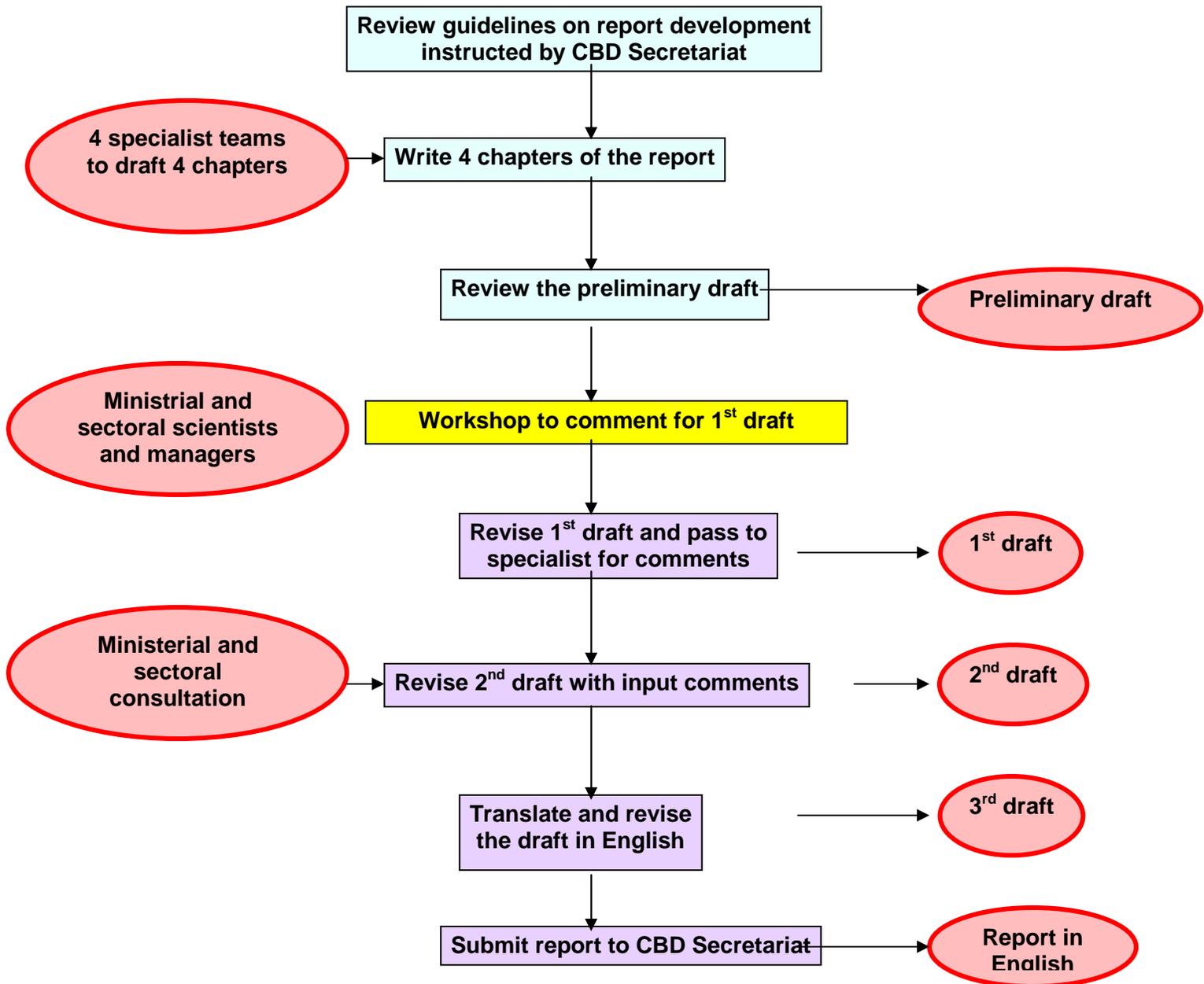
10. ***Paying more attention to new species importation.*** Production companies must strictly comply the examination procedures and regulations to oversee imported species before allowing to introduce for large scale production. Soon releasing solutions to ***manage and destroy harmful invasive species;***
11. ***Strengthening diversification and effective management of funding sources for conservation*** through a/ increasing total investment from state budget for conservation, and b/ focusing on strategic investment to satisfy long-term conservation.
12. Maintaining more ***foreign aids*** for nature and biodiversity conservation; promoting effective cooperation with biodiversity-related international and regional organisations such as CBD Secretariat, GEF, UNDP, WWF, IUCN, etc.

Appendix 1. Information concerning reporting Party and preparation of National Report

A. Reporting Party

Contracting Party	
NATIONAL FOCAL POINT	
Full name of the institution	
Name and title of contact officer	
Mailing address	
Telephone	
Fax	
E-mail	
CONTACT OFFICER FOR NATIONAL REPORT	
Full name of the institution	
Name and title of contact officer	
Mailing address	
Telephone	
Fax	
E-mail	
SUBMISSION	
Signature of officer responsible for submitting national report	
Date of submission	

B. Process of preparation of National Report



**LIST OF KEY PARTICIPANT ORGANISATIONS
FOR REPORT DEVELOPMENT**

No.	ORGANISATIONS
	MINISTRIES
1	Ministry of Natural Resources and Environment
2	Ministry of Agriculture and Rural Development
3	Ministry of Culture, Sport and Tourism
4	Ministry of Science and Technology
5	Ministry of Training and Education
6	Ministry of Health
	RESEARCH ORGANISATIONS
7	Institute of Ecology and Biological Resources
8	Forest Inventory and Planning Institute
9	Hanoi National University
10	Vietnam Association of Nature Conservation and Environment
	INTERNATIONAL ORGANISATIONS
11	World Wide Fund for Nature
12	IUCN
13	Birdlife International
14	Fauna and Flora International

Annex 2: References

- [IUCN](#) and Vietnam Institute of Science and Technology (2007). Vietnam Red Book
- UNDP and Vietnam Environmental Protection Agency (2003). A Consolidation Report of ODA Sources for Environmental Protection in Vietnam.
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- Ministry of Agriculture and Rural Development & WWF (2004). Management Strategy of Protected Area System in Vietnam to 2010.
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- The Convention of Biological Diversity 1993

- The Environmental Protection Law 2005 (amended) approved by the National Congress of Vietnam on November 29th 2005.
- The Biodiversity Law approved by the National Congress of Vietnam on November 13th 2008.
- The Fishery Law approved by the National Congress of Vietnam on November 26th 2003
- The Law on Legal Document Promulgation approved by the National Congress of Vietnam on June 3rd 2008.
- Decision No. 274/TTg of Prime Minister dated on April 28th 1997 regarding to the Establishment of National Steering Committee for Off-shore Fishing Programme.
- Decision No.661/QĐ - TT of Prime Minister dated on July 29th 1998 regarding to the Objectives, Tasks, Polices, and Implementational Organisation of the Five Millions Hectare Reforestation Programme.
- Decision No.79/2007/QĐ-TTg of Prime Minister dated on May 31st 2007 regarding to the Approval of Vietnam Biodiversity Action Plan to 2010 and Orientation towards 2020 to implement CBD and Cartagena Protocol on Biosafety.
- Decision No.34/3005/QĐ-TTg of Prime Minister dated on February 22nd 2005 regarding to the Government Action Programme in Response to Implement the Resolution No.41 of Vietnam Communist Party.
- Decision No.153/2004/QĐ-TTg of Prime Minister dated on August 17th 2004 regarding to the Orientations of Sustainable Development in Vietnam (Vietnam Agenda 21)
- Decision No.204/2006/QĐ-TTg of Prime Minister dated on September 2nd 2006 regarding to the National Action Programme to Combat Desertification in Vietnam in the period 2006 - 2010 and Orientation towards 2020.
- Decision No.47/2007/QĐ-TTg of Prime Minister dated on April 6th 2007 regarding to the approval of the Kyoto Protocol Implementation Plan in Vietnam, 2007-2010 in response to the UN Framework on Climate Change.
- Decision No.232/QĐ-TTg of Prime Minister dated on February 13th 2007 regarding the Plan for Monitoring Governmental Policy, Strategy, Planning, and Plan Performance in 2007.

- Decision No.272/2003/QĐ-TTg of Prime Minister dated on December 31st 2003 regarding to the approval of Vietnam's Science and Technology Development Strategy to 2010.
- Decision No.131/2004/QĐ-TTg of Prime Minister dated on July 16th 2004 regarding to the approval of Vietnam's Fishery Resource Protection and Development Programme to 2010.
- Decision No.47/2006/QĐ-TTg of Prime Minister regarding to the approval of the Overall Plan for Baseline Investigation and Management of Marine Resource and Environment to 2010 and Vision to 2020.
- Decision No. 1479/QĐ-TTg of Prime Minister regarding to the approval of Planning for Interior Water Protection Area System to 2020.
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- Decree No.144/2005/NĐ-CP of the Government regarding to Guidance for Cooperation among Administrative Agencies to Develop and Monitor Policy, Strategy, Planning, and Plan Performance.
- Decree No.140/2006/NĐ-CP of the Government regarding to Environmental Protection Regulations for Formulation, Appraisal, Approval and Implementation of Development Strategies, Plannings, Plans, Programmes and Projects.
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- Circular No.08/2006/TT-BTNMT of Ministry of Natural Resources and Environment dated on September 8th 2006 regarding to the Guidance on Strategic Environmental Assessment, Environmental Impact Assessment, and Environmental Protection Agreement.

- Resolution No.41-NQ/TW of the Communist Party dated on November 15th 2004 regarding to Strengthening Environmental Protection for Country Industrialisation and Modernisation.
- Vietnam Strategy for Comprehensive Growth and Poverty Reduction to 2010
- Vietnam Forestry Development Strategy, 2006-2020.
- Vietnam Tourism Action Plan after WTO Engagement, 2007-2012.
- The Kyoto Protocol of UN Treaty Framework on Climate Change, 2007 – 2010.
- Performance Evaluation of CBD Implementation in Vietnam, 1995 – 2005.

Appendix III. Progress Towards the Targets of Global Strategy for Plant Conservation and Protected Areas Programmeme

A. Targets of Global Strategy for Plant Conservation	Relevant National Objectives Towards Plant Conservation
Target 1: To develop a widely accessible working list of known plant species, as a step towards a complete world flora	<ul style="list-style-type: none"> - For many recent years, the Institute of Ecology and Biological Resources under the Vietnam Academy of Science and Technology hosted the Vietnam Fauna and Flora Encyclopaedia Development Programmeme, which aims to publish monographs of each taxon of plants and animals. To present, 14 plant monographs have been published with 2800 described species. In the next few years, about 10 animal monographs of 2000 species will be released. - Hanoi National University has developed 4 sets of Vietnam's Flora Directory.
Target 2: To carry out a preliminary assessment on the conservation status of known plant species at national, regional and international levels	<ul style="list-style-type: none"> - A system of 128 PAs with 2.5142 millions ha established. - 11 botanic gardens established, including those that collect medicinal plants, industrial plants, breeding plants, etc. Some remarkable ones that collect nationally and locally representative plants are at Cuc Phuong, Tam Dao, Ba Vi, Pu Mat, Bach Ma, Chu Mom Ray National Parks. Two biggest gardens in the country are Thao Cam Vien in Ho Chi Minh city and Bach Thao in Ha Noi (each includes about 200 species). - Seeds of 12,207 species of 115 seed plant are put into cold storage; seeds of 275 species of asexually reproducing plants (potato, pineapple) are kept in-vitro; seeds of 1,700 species of 36 asexually multiplying plants are kept at the field. Since 1994, 36 species of local fruit trees have been conserved.
Target 3: To develop plant conservation and sustainable use, based on research and practical experience	<p>The NBAP 2007 includes the objective: <i>Use biological resources in a sustainable way</i>: Set up and develop models of sustainable use biological resources.</p> <ul style="list-style-type: none"> - Community-based orchid production model in Phong Nha-Ke Bang National Park. - Limestone mountain landscape ecotourism in Pu Luong – Cuc Phuong.
Target 4: To effectively conserve at least 10% of each of the world's ecological regions	<ul style="list-style-type: none"> - 5 Millions Hectare Reforestation Programme - The NBAP 2007 includes the objective: <i>Consolidate, improve and develop the SUF system</i>: A system of 128 PAs with 2.5142 millions ha, making up 7.6% of the country area, has been established. - The total area of marine and wetland PAs increased to 1.2 mil ha. A system of 15 marine protected areas (233,974 ha of marine area and 64,147 ha of terrestrial area) and 48 interior water PAs of high biodiversity have been planned.
Target 5: To ensure the protection of 50% of the most important areas of floral diversity	<p>Vietnam has included the objective to floral diversity conservation in strategies and action plans as following:</p> <ul style="list-style-type: none"> - NBAP 1995, 2007; National Strategy for Environment Protection to the year 2010 and Orientation towards 2020; Management Strategy of PA System in Vietnam to the year 2010. <p>The conservation of important floral diversity areas is regulated in the following legal documents:</p> <ul style="list-style-type: none"> - Environmental Protection Law

	<ul style="list-style-type: none"> - Forest Protection and Development Law - Water Resource Protection Law - Decree on wetland conservation and sustainable development - Regulations for management of special use forests, protection forests and production forests
Target 6: To ensure at least 30% of cultivation land area that are incorporated with floral diversity conservation	<p>- Decision 78/2002/QĐ-BNN (28/08/2002) by Minister of MARD regulates technical procedure to monitor forest and forestland motivation for forest management taskforce. This procedure includes basic contents, technical solutions, implementation and report mechanism regarding monitoring forest and forestland motivation for forest management taskforce. Every year they have to know areas of available forest types and forest land; changes in areas of forests and lands planned for forestry production in order to help central and local authorities in forestry planning and policy making for forest protection and development.</p> <p>Vietnam has integrated this objective into agricultural and aquacultural management to reduce soil and water pollution. It is stated in National strategy for environment protection to the year 2010 and orientation towards 2020.</p> <p>The contents of land use and management, and conservation have been integrated into national policies, laws and programmes: Law on Forest Protection and Development (1991 and 2004), Natural Forest Closure Policy, and Forestland Allocation Programmes.</p> <p>From 1990 to 2006, there was a rapid increase in total forest area, from 27.8% to 38.2%. Forest use has become more rational with 2 millions hectares of special-use forest, 5 millions hectares of protection forest and 8 millions hectares of production forest.</p> <p>Some goals to the year 2020 of the Forestry Development Strategy are To establish, manage, protect, develop and sustainably use 16.24 millions ha of forestry-used land; To increase forest land rate to 42-43% in 2010 and 47% in 2020;</p> <p>- Decision 258/2006/QĐ-TTg by the Prime Minister to approved the Programme to investigate, assess and monitor forest resources succession in 2006-2010 (Circle IV). One content of the programme is To investigate, assess and monitor forest and forest land succession including: assess and monitor succession of indicators of forest quality, of forest animal resource at national scale, of forest insect resource and harmful pests, of forest resources under socioeconomic impacts; To investigate, collect data, analyse and assess the impacts of socioeconomic condition on changes of forest resources in 8 regions and throughout the country.</p>
Target 7: To carry out in-situ conservation of 60% of threatened species	<p>The NBAP 2007 includes the objective: <i>Improve, complete and develop the SUF system</i>: A system of 128 PAs including 30 national parks, 48 nature reserves, 11 species/habitat protected areas, and 39 landscape PAs, with a total area of 2.5 millions ha, making up 7.6% of the country area, has been established.</p>
Target 8: To ensure 60% of threatened plant species that can be accessed for ex-situ collection, and 10% of that are planned for regeneration and returning to the wild	<ul style="list-style-type: none"> - A system of 128 PAs of 2.5142 millions ha established. - 11 botanic gardens established, including those that the collection of medicinal plants, industrial plants, breeding plants, etc. Some remarkable ones are those nationally and locally representative plants such as Cuc Phuong, Tam Dao, Ba Vi, Pu Mat, Bach Ma, Chu Mom Ray National Parks. Two biggest gardens in the country

	are Thao Cam Vien in Ho Chi Minh city and Bach Thao in Ha Noi (each includes about 200 species).
Target 9: To ensure 70% of the genetic diversity of crops and other major socioeconomically valuable plant species conserved, and associated indigenous and local knowledge maintained	<p>- The NBAP 2007 includes the objective: <i>Conserve and develop agricultural biodiversity</i>: Complete the conservation system to effectively conserve precious, rare native agricultural plant, animal and microorganism species.</p> <p>11 botanic gardens, including those for the collection of medicinal plants, industrial plants, breeding plants, etc. Some remarkable ones are those that collect nationally and locally representative plants such as Cuc Phuong, Tam Dao, Ba Vi, Pu Mat, Bach Ma, Chu Mom Ray National Parks. Two biggest gardens in the country are Thao Cam Vien in Ho Chi Minh city and Bach Thao in Ha Noi (each includes about 200 species). Most of collected species in these gardens are indigenous. Genetic sources of precious, rare, native species (fruit trees, medicinal plants...) are being conserved in farms, households and communities.</p> <p>- Seeds of 12,207 species of 115 seed plant are put into cold storage; seeds of 275 species of asexually reproducing plants (potato, pineapple) are kept in-vitro; seeds of 1,700 species of 36 asexually multiplying plants are kept at the field. Since 1994, 36 species of local fruit trees have been conserved.</p> <p>- In researches on indigenous botany, hundreds of medicinal plants and family-handed remedies were collected from Dao, Nung, Tay, H'mong populations in northern mountainous area in Vietnam.</p>
Target 10: To manage on-site at least 100 alien floral species, key communities and associated habitats and ecosystems	<p>The NBAP 2007 includes the objective: <i>Use biological resources in a sustainable way</i>: Strictly manage and control invasive alien species; investigate and make a list of invasive alien species; build up and implement a strategy to prevent and control invasive alien species and to deal with problems caused by them.</p> <p>- Several publications on invasive alien aquatic species with different levels of threat have been released.</p> <p>- The Agricultural and Fishery sectors have released regulations for conducting pilot experiment with imported plant and animal species before bringing to large scale production</p>
Target 11: To ensure no species of wild flora to be endangered to extinction due to international trade	<p>- The NBAP 2007 includes the objective: <i>Use biological resources in a sustainable way</i>: control, prevent, suspend and exclude the exploitation, trading and consumption of endangered valuable wildlife.</p> <p>- The national action plan to strengthen the control of wildlife trading to the year 2010 includes the objective: Increase the effectiveness of responsible agencies' activities to control wildlife plants and animals trading towards sustainable use of biological resources, in order to achieve the objectives of the National strategy for environment protection to the year 2010;</p> <p>Raise awareness of managers, producers, traders and consumers of wildlife plants and animals protection;</p> <p>Enhance the partnerships with neighbour countries and CITES state members and international organizations to control wildlife trading.</p>
Target 12: To ensure 30% of plant-based products made from sustainably-managed resources	<p>The following objective is given in the Law on Environment Protection:</p> <p>Article 11. The Government encourages and provides advantageous condition for organizations and individuals to use and exploit</p>

	<p>environmental components in a rational way, applying clean and modern technologies, re-using and re-cycling waste, economically using raw materials, renewable energy and bio-products in scientific researches, production and consumption.</p>
<p>Target 13: To prevent the decline of plant resources, and associated local initiatives and practical native experience that support sustainable livelihoods, local food security and healthcare</p>	<p>The NBAP 2007 includes the objective: <i>Use biological resources in a sustainable way</i>: Set up and develop models for sustainable use of biological resources</p> <ul style="list-style-type: none"> - Models for community-based orchid production in Phong Nha-Ke Bang National Park. - Limestone landscape ecotourism in Pu Luong – Cuc Phuong. - 2006: Forest cover reached 38,2% - By 2004, 2.4 millions ha were reforested. <p>Local people in Cuc Phuong National Park are now able to plant orchids. Others in some PAs are supported and guided with ecotourism services. The people are allocated land, forest and water surface for exploitation, utility and management for production.</p>
<p>Target 14: To integrate the importance of plant diversity and the need for its conservation incorporated into communication, educational and public-awareness programmes</p>	<p>The NBAP 2007 includes the objective: Propagate and educate to raise public awareness of biodiversity conservation, development and sustainable use: more than 50% of the population regularly access to biodiversity information</p> <ul style="list-style-type: none"> - The Fishery sector has open trainings on biodiversity conservation for fishermen. In the scope of the project Strengthening of Capture Fisheries Management (SCAFI), a National communication strategy for exploitation and protection of fishery benefits with co-management mechanism.
<p>Target 15: To increase the number of trained people in plant conservation according to national needs, to achieve the targets of this strategy</p>	<p>The NBAP 2007 includes the objective: <i>Enhance the government's biodiversity management capacity</i>: Improve technical infrastructure, focus on staff training with competent professional capacity in regard to biodiversity conservation and development.</p> <p>There are about 200 graduates in biology, 200 in biotechnology, 400 in pedagogy specialized in biology, together with 5000-8000 engineers in agriculture, forestry and aquaculture every year. Graduate students studying in the country in fauna studies, flora studies, ecology, biodiversity and natural resources management each year include about 50 master students and 10 PhD students. There are also some others pursuing graduate studies abroad following bilateral scholarship programmes or cooperation projects.</p> <p>The Vietnam's Plant Conservation Project between Missouri Botany Garden (USA) and the Institute of Ecology and Biological Resources used "pyramid method" to train botany specialists in Vietnam: at the lowest layer, 50-100 national conservation researchers received information; at the second level, 40 PA staff are trained at the field; at the highest layer, 20-24 young staff are trained intensively on botany at the field. The project is a good example of training botany conservationists in Vietnam.</p> <p>Established Biodiversity Training Centres in Cuc Phuong, Bach Ma and Cat Tien National Parks have trained 120 forestry staff.</p>
<p>Target 16: To establish or consolidate networks for plant conservation activities at national, regional and international levels</p>	<p>Proposal to build a <i>Centre for national database of biodiversity</i> has been approved, with feasible mechanisms to set up a network for exchange of biodiversity information between research institutes and management agencies of all levels, and in the future, between Vietnam and other countries in the region and throughout the world.</p>

B. Goals and Objectives of the Working Programme on Protected Areas

Goals	Objectives		
1.1. Set up and strengthen the system of national and regional PAs, participate in global network as a contribution to achieve global goals.	Develop and effectively manage a comprehensive inland PA system in 2010, a marine PA system in 2012 to contribute to (i) the goals of Strategic plan of the World Summit on Flora Conservation aiming to reduce the rate of biodiversity loss in 2010; (ii) the Millennium Development Goals – especially Goal 7 to ensure environmental sustainability; and (iii) Global Strategy for Flora Conservation	<ul style="list-style-type: none"> - Conserve and develop terrestrial biodiversity - Reforest 5 millions ha (2 millions ha of protection forests, 3 million ha production forests) 	<ul style="list-style-type: none"> - 5 Million Hectare Reforestation Programme - The NBAP 2007 includes the objective: <i>Improve, complete and develop the SUF system</i>: A system of 128 PAs with total area of 2.5142 millions ha, which makes up 7.6%, has been established.
1.2. Integrate PAs in marine and terrestrial ecosystems as well as different sectors to maintain ecological structures and functions.	By 2015, all PAs and PA systems will be integrated into marine and terrestrial ecosystems as well as related sectors through applying ecosystem-based approach	<ul style="list-style-type: none"> - Conserve and develop marine and wetland biodiversity 	<ul style="list-style-type: none"> - A system of 15 marine preserved areas (233,974 hectares of marine area and 64,147 hectares of inland area) and 48 Interior water protected areas with high biodiversity have been planned. - Increase the total area of marine and wetland PAs to 1.2 millions ha.
1.3. Set up and strengthen regional networks, transboundary protected areas (TBPA) and cooperation between PAs along the national boundary.	Set up and strengthen transboundary PAs, cooperation models between PAs of neighbour countries along the boundaries and regional networks in 2010 or 2012 in order to enhance biodiversity conservation and sustainable use, applying ecosystem-based approach, and strengthening international cooperation.		<p>2000-2003: The project Linking Hinnamo PNA (Laos) with Phong Nha-Ke Bang National Park via parallel conservation was conducted</p> <p>Vietnam has also joined the project Biodiversity conservation corridor linking PNAs in Da Nang and Quang Nam with Donganpham PNA in Laos.</p>
1.4. Basically improve planning and management of local PAs.	By 2012 all PAs will be managed effectively with community participation; planning processes will be science-based with clear	<ul style="list-style-type: none"> - Conserve and develop terrestrial biodiversity - Conserve and develop 	<ul style="list-style-type: none"> - A system to classify, control and plan SUFs has been established. - A system of 15 marine preserved areas

Goals	Objectives		
	objectives, management strategy and biodiversity monitoring plans; implementing available methods at present and long-term management plan with key stakeholders	marine and wetland biodiversity	(233,974 hectares of marine area and 64,147 hectares of inland area) and 48 Interior water protected areas with high biodiversity have been planned.
1.5. Prevent and minimize negative impacts from major threats to PAs.	By 2008, set up mechanism to identify, prevent and/or minimize negative impacts from major threats to PAs.	Decision 192/2003/QĐ-TTg of the Prime Minister approved the Strategy to manage Vietnam's PNA system to the year 2010. According to the Strategy, development in the near future must not harm the future protection and management of the country's biodiversity and natural resources, ensuring comprehensive principles including conservation of gene source, species and ecosystems, preventing all risks to damage all these values.	<ul style="list-style-type: none"> - A system of 128 PAs with total area of 2.5142 millions ha, which makes up 7.6%, has been established. - A system of 15 marine preserved areas (233,974 hectares of marine area and 64,147 hectares of inland area) and 48 Interior water protected areas with high biodiversity have been planned. - Increase the total area of marine and wetland PAs to 1.2 millions ha.
2.1. Promote equality and benefit sharing.	Build a mechanism for equal share of both cost and benefits from setting up and managing PAs to the year 2008	- Decision 18/2007/QĐ-TTg (5/2/2007) of the Prime Minister approved the Strategy to develop Vietnam's forestry, period 2006-2020. The objectives to the year 2020 are to ensure the participation of business	Ensuring the right to participate and the actual participation of the community in the process of assessment for strategies, policies, planning schemes, programmes and investment projects related to PNAs is one way to implement the NBAP 2007 and it has step by step operated and brought initial good results.

Goals	Objectives		
		components and social organizations in forestry development in order to contribute to socio-economic development, environment protection, biodiversity conservation, environmental services provision, hunger eradication and poverty alleviation, livelihood improvement for rural mountainous people, and national security assurance.	All sectors' development strategies and projects agree with equally sharing benefits from biodiversity resources and ecological services. In a supporting project, local people in Cuc Phuong National Park are now able to plant orchids. Others in some PAs are supported and guided with ecotourism services. In 327 and 661 programmes, the people are allocated land, forest and water surface for exploitation, utility and management for production.
2.2. Strengthen and ensure participation of local/indigenous communities and key stakeholders	By 2008, ensure full and effective participation of local and indigenous communities to demonstrate their rights, benefits and responsibilities, in accordance with national legislation and international responsibilities, and of key stakeholders, in managing existing PAs as well as setting up and managing new PAs.	- Manage and use natural resources with principles of fairness and sustainability to help alleviate poverty and improve social cares for the people, especially women and marginalized groups (IUCN Vietnam-Strategy Framework 2007-2010).	327 and 661 programmes allocated land and forests for organizations, households and individuals for long-term use and management. A number of community-based nature conservation models have been developed successfully: - A model at Hon Mun MPA - Community-based orchid production models in Phong Nha-Ke Bang National Park. - Limestone landscape ecotourism models in Pu Luong – Cuc Phuong. - Coral reef and fish resources protection model in Bach Long Vi Island - Snub-nosed monkey conservation model in Ha Giang and Black crested gibbon conservation model in Cao Bang

Goals	Objectives		
			<p>-The model “Community-based sustainable livelihood and natural resources conservation in wetland” run in Lang Sen wetland preserved area helped improve the livelihood of the people in the buffer zone, raise awareness about wetland and experience so-management mechanism; The model “Coral reef breeding and conservation” is run in Area 1, Ghenh Rang commune, Quy Nhon city and the model “Conserve and exploit Bang grassland” is run in Phu My commune, Kien Luong district, Kien Giang in order to exploit and use wetland flora resource appropriately.</p>
3.1. Provide policies, socio-economic environment and institutions for PAs.	By 2008, assess and adapt policies to the new condition, including using socio-economic assessment and stimulation tools to provide a supportive environment for establishment and more effective management of PAs and PA system.	Decision 192/2003/QĐ-TTg by the Prime Minister approved the Strategy to manage Vietnam’s PNA system to the year 2010. According to the Strategy, development in the near future must not harm the future protection and management of the country’s biodiversity and natural resources, ensuring comprehensive principles including conservation of gene source, species and ecosystems, preventing all risks to damage all these	- A system of 128 PAs with total area of 2.5142 millions ha, which makes up 7.6%, has been established.

Goals	Objectives		
		values. In particular, management of PAs and their buffer zones needs unanimous and close cooperation between different sectors from central to local levels via specific mechanisms and plans.	
3.2. Build capacity for planning, setting up and managing PAs.	By 2010, implement comprehensive capacity building programmes and initiatives to improve knowledge and skills of each individual and community, and to heighten professional standards.	Decision 47/2006/QĐ-TTg (1/3/2006) by the Prime Minister approved the Proposal to investigate comprehensive marine biodiversity and benefits in Vietnam	Make plan for and set up a system of MPAs for sustainable development
3.3. Develop, apply and transfer suitable technologies for PA management.	By 2010, considerably improve the formation, assessment and transfer of suitable technologies and initiatives to manage PAs effectively following resolutions of the Conference for related parties on cooperation on and transfer of technology	The NBAP 2007 includes the objective: <i>Use biological resources in a sustainable way</i> : Set up and develop models for sustainable use of biological resources - Ecosystem-based approach to biodiversity management	<ul style="list-style-type: none"> - Community-based orchid production models in Phong Nha-Ke Bang National Park. - Limestone landscape ecotourism models in Pu Luong – Cuc Phuong. - Ecosystem-based approach has been studied and quickly applied in Forestry and Fishery sectors, and in other localities and PAs such as: U Minh Ha National Park, Can Gio BRA, Tam Giang and Cau Hai lagoon...
3.4. Ensure sustainable financing for PAs, national and regional PA systems.	By 2008, ensure to fully supply, from national and international sources, financial, technical and other resources to run and effectively manage national and regional PA system, especially at developing and economy-		Fundings for biodiversity conservation is increasing. Total investment for biodiversity conservation in 2005 can reach 51.8 million USD, ten times bigger than that of the whole decade before that.

Goals	Objectives		
	transforming countries and state islands.		The Vietnamese Government also committed, from 2006 onwards, to allocate 1% of the national total budget for environment protection, including biodiversity.
3.5. Intensify communication, education and awareness raising activities.	By 2008, intensify awareness raising activities on the importance and benefits of PAs.	<ul style="list-style-type: none"> - Decision 26/2002/QĐ-BKHCMNT with long-term objective: Raise public awareness and knowledge of biodiversity's role in sustainable socio-economic development, making biodiversity one of present time's ethic codes and a resource for social development. - Enhance the state's biodiversity and biosafety management capacity 	Propagate and educate to raise public awareness of biodiversity conservation, development and sustainable use: more than 50% of the population regularly access to biodiversity information
4.1. Build and approve minimum standards and best experiences for national and regional PA systems.	By 2008, build and approve standards, indicators and best experiences of planning, selection, establishment and management of national and regional PA systems.		In 2007, the MARD submitted to the Government a Planning scheme of a system of 15 MPAs and a system of 48 Interior water protected areas in Vietnam, including 3 types according to Fishery Law: National Park (marine and inland water areas), SHMPA, and Aquatic resources Reserve Area.
4.2. Assess and improve the effectiveness in PA management.	By 2010, related stakeholders approve and apply working frame for monitoring, assessing and reporting the managerial effectiveness in national, regional and transboundary PAs.	Build up a national biodiversity indicators	<ul style="list-style-type: none"> - Since 2007, the Environment Protection Agency has proposed biodiversity indicators to assess biodiversity in forests, inland water and marine in Vietnam. - Current mission of PAs is merely to

Goals	Objectives		
			conserve, not to combine conservation and development, thus they hardly contribute to the national economy or improvement of local people's lives. First priority now is to assess and create opportunities for the community to benefit from provision of ecological services in nature reserves and watershed forest areas.
4.3. Evaluate and monitor status and trends of PAs.	By 2010, set up national and regional PA system to support monitoring the cover effectiveness, status and trends of national, regional and global PAs, as well as support assessment process following global biodiversity goals.	<ul style="list-style-type: none"> - Decision 16/2007/QĐ-TTg by the Prime Minister approved the Comprehensive plan for the network to monitor national environment and natural resources to the year 2020 - Build up a national biodiversity indicators 	<ul style="list-style-type: none"> - One component of the network to monitor national environment and natural resources is biodiversity monitoring in 49 national parks and nature reserves - In 2005, through DANIDA funding, the Environmental Protection Agency developed a national set of indicators for environment assessment which was then announced for official use by the Minister of MONRE. However, the construction of a national set of indicators for biodiversity monitoring was just started in 2007. At the moment, biodiversity indicators are in a proposal to assess the biodiversity of forest, wetland and sea in Vietnam. A Technical guidance and technical-economic frame for monitoring biodiversity of the above ecosystems have also been drafted.
4.4 Ensure scientific contribution in setting up and effectively manage PAs and PA systems.	Improve and contribute scientific knowledge in setting up and effectively managing PAs	Enhance the government's biodiversity management capacity	Improve technical infrastructure, focus on staff training with competent professional capacity in regard to biodiversity conservation and development.

Appendix V. Objective Framework and Temporary Indicators to Assess the Progress of Reaching 2010 Goals

CBD		Vietnam		
Objectives	Indicators	National objectives	National indicators	Progress
Protect Biodiversity Components				
<i>Goal 1. Promote the conservation of the biological diversity of ecosystems, habitats and biomes</i>		<ul style="list-style-type: none"> • <i>Conserve and develop terrestrial biodiversity</i> • <i>Conserve and develop marine and wetland biodiversity</i> • <i>Conserve and develop agricultural biodiversity</i> 		
<p>Target 1.1: Conserve effectively at least 10% of each of the world's ecological regions.</p>	<ul style="list-style-type: none"> • Coverage of protected areas • Trends in extent of selected biomes, ecosystems, and habitats • Trends in abundance and distribution of selected species 	<p>- Improve, complete and develop the SUF system</p> <p>- Reforest 5 millions ha (2 millions ha of protection forest, 3 millions ha of production forests)</p> <p>- Recover 50% of degraded watershed forest area</p> <p>- Recover 50% of mining areas, 40% of degraded ecosystems (NSEP 2004).</p> <p>Recover 200,000 ha of mangrove forest</p>	<p>- Forest cover reaches 42-43%</p> <p>- Forest cover reaches 42-43%</p> <p>Recover 50% of degraded watershed forest area</p> <p>Recover 200,000 ha of mangrove forest</p>	<p>- A system of 128 PAs with total area of 2.5142 millions ha, which makes up 7.6%, has been established.</p> <p>- 2006: Forest cover reached 38,2%</p> <p>- In 2004, there were 2.4 millions ha of newly planted forests</p> <p>In 2004, there were 2.4 millions ha of newly planted forests</p> <p>Mangrove forests are recovered/newly planted in several places. One remarkable example is Can Gio BRA with 75,740 ha, most of which are of newly planted forests (VEM, 2005).</p>
<p>Target 1.2: Protect the areas of particular importance to biodiversity</p>	<ul style="list-style-type: none"> • Trends in extent of selected biomes, ecosystems, and habitats • Trends in abundance and distribution of selected 	<p>- Three PNAs are acknowledged as World Natural Heritage or World Biosphere Reserve Area and five PNAs are acknowledged as ASEAN Heritage</p>	<p>- 3 World Natural Heritages/World Biosphere Reserve Areas. 5 ASEAN Heritages.</p>	<p>- 2 new biosphere reserves acknowledged by UNESSCO in 2007 are Kien Giang and Western Nghe An, increasing the number of biosphere reserves in Vietnam by 6; two other biosphere reserves, Ca</p>

	<p>species</p> <ul style="list-style-type: none"> Coverage of protected areas 	<p>- Increase the total area of marine and wetland PAs</p> <p>- Build up five (05) wetland areas eligible for acknowledgement as of international importance (Ramsar sites).</p>	<p>- To 1.2 millions ha</p> <p>- 5 Ramsar areas built up</p>	<p>Mau and Hoi An – Cu Lao Cham, are being proposed (National MAB, 2008).</p> <p>- 3 nominated areas as Natural Heritages are Ba Be, Cat Tien and Phong Nha – Ke Bang national parks.</p> <p>- A system of 15 marine preserved areas (233,974 hectares of marine area and 64,147 hectares of inland area) and a system of 48 Interior water protected areas have been planned by the MARD in 2007.</p> <p>- In 2002, the wetland Bau Sau in Cat Tien national park was acknowledged as the 2nd Ramsar site in Vietnam. In 2007-2008, the Environment Protection Agency prepared documents for 4 new Ramsar proposals of Tram Chim, Ba Be, U Minh Thuong and Ca Mau.</p>
<p>Goal 2. Promote the conservation of species diversity</p>		<p>BAP 2007: Conserve and develop biodiversity (terrestrial, wetland and marine, agricultural)</p> <p>485/QĐ/TTg. Project: Effectively protect precious aquatic species endangered to be extinct to the year 2015, vision towards 2020.</p> <p>733/QĐ-TTg (2006) Approved the Emergent action plan for elephant conservation in Vietnam to the year 2010.</p> <p>175/2004/QĐ-BTS The Minister of Fishery approved the Action plan for sea turtle conservation in Vietnam to the year 2010.</p> <p>82/2008/QĐ-BNN. The MARD announced the List of precious aquatic species endangered to be extinct and in need of protection, recover and development</p>		
<p>Target 2.1: Restore, maintain, or reduce the decline of populations of species of</p>	<ul style="list-style-type: none"> Trends in abundance and distribution of selected species 	<p>Develop ex-situ conservation models, especially for precious, rare, endemic species of high socio-economic value</p>	<p>Precious, rare, endemic species of high socio-economic value</p>	<p>- Parent flocks and hatching eggs (6,000 ones) of Dong Tao chicken species are developed.</p> <p>- In 2004, the quantity of Son La</p>

<p>selected taxonomic groups</p>	<ul style="list-style-type: none"> Change in status of threatened species 	<p>(BAP 2007).</p> <ul style="list-style-type: none"> - Build a database of precious aquatic species - Set up protected areas for precious aquatic species - Conserve and develop sustainably wild elephant and domesticated elephant communities existing in Vietnam, as well as conserve sustainably their habitats. - Conserve and manage one marine animal species (sea turtle) and their habitat. Research and monitor; Educate and raise public awareness. 	<ul style="list-style-type: none"> - Database - Prepare legal documents - Set up pilot protected areas for endemic aquatic species - Retrieve 20 precious aquatic species - Stop the decline in quantity of elephants, ensuring at least 3 elephants living areas conserved and developed in 21st century; conserve in-situ isolated elephant communities with small quantity to ensure best condition for their long-term existence. - Minimize sea turtles' death risks; manage their reproduction and incubation sites; protect, manage and recover their 	<p>Thuoc chicken reached 20,000 and that of Ho chicken reached 1,200.</p> <ul style="list-style-type: none"> - Fruit tree species as Dien, Doan Hung, Nam Roi... pomelo have been developed - Besides, there is a programme to retrieve Nghe An's H'mong pig, Central Highland's Soc pig and Phan Rang sheep. - The Aquaculture sector have succeeded in studying and applying man-made method for reproduction of 14 freshwater and marine fish species, 1 precious mollusc species (snout otter clam) of high economic value (listed in Vietnam Red Book), sweet snail, Ben Tre fish-shell, 4 crustacean species: sea crab, black tiger shrimp pink shrimp and green crab. - Sea turtle reproduction sites were established and protected in Con Dao. - Sea turtles are now under
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			habitat;	monitoring in Con Dao
Target 2.2: Improve the status of threatened species.	<ul style="list-style-type: none"> • Change in status of threatened species • Trends in abundance and distribution of selected species • Coverage of protected areas 	<ul style="list-style-type: none"> - Protect precious fauna and flora species. - Build a database of precious aquatic species 		<ul style="list-style-type: none"> - Vietnam Red List and Red Book, following the new criteria of IUCN, have been published and announced. - 236 precious aquatic species endangered to be extinct and in need of protection, recover and development have been announced.
Goal 3. Promote the conservation of genetic diversity				
Target 3.1: Conserve genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species, and maintain associated indigenous and local knowledge.	<ul style="list-style-type: none"> • Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance • <i>Biodiversity used in food and medicine (indicator under development)</i> • Trends in abundance and distribution of selected species 	Retrieve a number of indigenous domesticated animals and cultivated plants		<ul style="list-style-type: none"> - The Aquaculture sector have succeeded in studying and applying man-made method for reproduction of 14 freshwater and marine fish species, 1 precious mollusc species of high economic value - Parent flocks and hatching eggs (6,000 ones) of Dong Tao chicken species are developed. - In 2004, the quantity of Son La Thuoc chicken reached 20,000 and that of Ho chicken reached 1,200. - Fruit tree species as Dien, Doan Hung, Nam Roi... pomelo have been developed - The gene source of 13,300 types of 115 species are protected: Seeds of 12,500 species of 83 seed plant are put into cold storage; seeds of 102 species of asexually reproducing plants (potato, pineapple) are kept in-vitro; seeds of 1,720 species of 32 asexually multiplying plants are kept at the field. - The gene source of agricultural microorganisms is protected: 500

				types of more than 30 families. - The gene source of Gayal (<i>Bos gaurus</i>) is kept as cell and foetus forms.
Promote sustainable use				
Goal 4. Promote sustainable use and consumption		Use biological resources in a sustainably way		
Target 4.1: Sustainably manage biodiversity-based products derived from resources; and cultivation areas incorporated with the conservation of biodiversity.	<ul style="list-style-type: none"> • Area of forest, agricultural and aquaculture ecosystems under sustainable management • <i>Proportion of products derived from sustainable sources (indicator under development)</i> • Trends in abundance and distribution of selected species • Marine Trophic Index • Nitrogen deposition • Water quality of freshwater ecosystems 	<ul style="list-style-type: none"> - Develop models to Use biological resources in a sustainable way; - Prevent and exclude the exploitation, trading and consumption of endangered valuable wildlife. - Manage and use natural resources with principles of fairness and sustainability to help alleviate poverty and improve social cares for the people, especially women and marginalized groups (IUCN Vietnam-Strategy Framework 2007-2010). 	The number of community-based protection model	327 and 661 programmes allocated land and forests for organizations, households and individuals for long-term use and management. A number of community-based nature conservation models have been developed successfully: <ul style="list-style-type: none"> - A model at Hon Mun MPA - Community-based orchid production models in Phong Nha-Ke Bang National Park. - Limestone landscape ecotourism models in Pu Luong – Cuc Phuong. - Coral reef and fish resources protection model in Bach Long Vi Island - Snub-nosed monkey conservation model in Ha Giang and Black crested gibbon conservation model in Cao Bang
Target 4.2. Reduce unsustainable consumption of biological resources, or their impacts on biodiversity.	<ul style="list-style-type: none"> • Ecological footprint and related concepts 	<ul style="list-style-type: none"> - Prevent and exclude the exploitation, trading and consumption of endangered valuable wildlife. 		The Vietnam Conservation Fund (VCF) was established in 2005 in order to provide small fundings for the SUF management boards to control illegal wildlife hunting and trading, and to raise public awareness.
Target 4.3:	<ul style="list-style-type: none"> • Change in status of 	<ul style="list-style-type: none"> - Prevent and exclude the 		- The list of precious and rare

No species of wild flora or fauna endangered by international trade.	threatened species	exploitation, trading and consumption of endangered valuable wildlife.		livestock species forbidden from export has been promulgated
-	-	- Recovering benefits of products from marginal seas, rivers, reservoirs and wetlands for aquacultural sustainable development. (131/2004/QĐ-TTg).		- Every year, the fishery sector occasionally return breeding shrimp and fish back to the sea or reservoirs. - Some areas in coastal marine was selected for banned or seasonal fishing permission.
Address threats to biodiversity				
Goal 5. <i>Pressures from habitat loss, land use change and degradation, and unsustainable water use, reduced.</i>		BAP 2007: Conserve and develop biodiversity (terrestrial, wetland and marine, agricultural) NSEP, 2004: Ensure high ecological balance		
Target 5.1. Rate of loss and degradation of natural habitats decreased.	<ul style="list-style-type: none"> Trends in extent of <i>selected</i> biomes, ecosystems, and habitats Trends in abundance and distribution of selected species Marine Trophic Index 	<ul style="list-style-type: none"> - Develop ex-situ conservation models, especially for precious, rare, endemic species of high socio-economic value (BAP 2007) - Recover 50% of degraded watershed forest area - Recover 50% of mining areas, 40% of degraded ecosystems (NSEP 2004). 		<ul style="list-style-type: none"> - A system of 128 PAs with total area of 2.5142 millions ha, which makes up 7.6%, has been established. - 2004: Forest cover: 36,7% (SOE 2005) - 2005: 37,3% (VEM). - In 2007, the MARD submitted to the Government a Planning scheme of a system of 15 MPAs (233,974 hectares of marine area and 64,147 hectares of inland area) and a system of 48 Interior water protected areas in Vietnam.
Goal 6. <i>Control threats from invasive alien species</i>		Use biological resources in a sustainably way		
Target 6.1. Pathways for major potential alien invasive	<ul style="list-style-type: none"> Trends in invasive alien species 	Control, assess and prevent invasive alien species		- The Environment Protection Agency and Marine benefits Exploitation and Protection Agency

species controlled.				have conducted researches and projects to investigate, assess and propose solutions to manage and prevent invasive alien species. - Several publications on invasive alien aquatic species with different levels of threat have been released.
Target 6.2. Management plans in place for major alien species that threaten ecosystems, habitats or species	<ul style="list-style-type: none"> Trends in invasive alien species 	Examine imported species and biological gene source	100% examined	
Goal 7. <i>Address challenges to biodiversity from climate change, and pollution</i>		- Reduce pollution and improve environmental quality (NSEP 2004) - Comprehensive plan of the monitoring network for national environment and natural resources to the year 2020 (16/2007/QĐ-TTg)		
Target 7.1. Maintain and enhance resilience of the components of biodiversity to adapt to climate change	<ul style="list-style-type: none"> Connectivity / fragmentation of ecosystems 	Identify potential impacts and encourage initiatives to set up strategies suitable to climate change (IUCN Vietnam Strategic Frame 2007-2010).		The Green Corridor linking Bach Ma and Dak Rong; the project to build biodiversity corridor linking PNAs in Da Nang, Quang Nam.
Target 7.2.. Reduce pollution and its impacts on biodiversity	<ul style="list-style-type: none"> Nitrogen deposition Water quality of freshwater ecosystems 	<ul style="list-style-type: none"> - 100% new production factories must use clean technology and qualified waste disposal equipments. - 40% of urban areas, 70% of industrial and export processing zones have qualified central waste-water disposal systems. - Improve 50% of degraded channels, ponds, lakes and passing rivers in cities (NSEP, 2004). 		<ul style="list-style-type: none"> - In 2007, the Environment Protection Agency drafted Overall Plan for Nation-wide Biodiversity Monitoring to 2020; Indicator Development of Biodiversity Monitoring of Forest, Wetland and Marine Ecosystems; and Technical Guidance and Economic and Technical Framework for Biodiversity Monitoring in forest, inland water and marine ecosystems in Vietnam. - Aquatic environment in some important river valleys (Cau, Nhue-

				Day, Huong, and Dong Nai rivers) and Vietnam's marginal sea are monitored. Air in some big cities and key areas are monitored. - Prepare EIA reports for infrastructure construction projects, SEA reports for socio-economic development plans in different sectors or regions. - In 2007, the Fishery Ministry released Guidance for EIA of coastal aquaculture. - Regional plannings have been conducted in some important river valleys. - Activities of collecting fee for environment, environmental inspection and waste water permission have been implemented. (SOE, 2006)
Maintain goods and services from biodiversity to support human well-being				
Goal 8. Maintain capacity of ecosystems to deliver goods and services and support livelihoods		- Manage ecosystems and PAs in order to provide ecological services (IUCN Vietnam Strategic Frame 2007-2010) - 5 Million Hectare Reforestation Programme (Programme 661)		
Target 8.1. Capacity of ecosystems to deliver goods and services maintained	<ul style="list-style-type: none"> • Biodiversity used in food and medicine (indicator under development) • Water quality of freshwater ecosystems • Marine Trophic Index • Incidence of human-induced ecosystem failure 	- Set up mechanisms to encourage and finance the provision of ecological services. (IUCN Vietnam Strategic Frame 2007-2010).		
Target 8.2.	• Health and well-being of	- Plant 2 millions ha of new	- Provide 15 millions m ³ of	- 2006: Forest cover reached 38,2%

Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people maintained.	<p>communities who depend directly on local ecosystem goods and services</p> <ul style="list-style-type: none"> • <i>Biodiversity used in food and medicine</i> 	<p>protection forests, 3 millions ha of new production forests to ensure the provision of forest products in development progress, reducing pressure on natural forests (Programme 661)</p> <p>- Help eradicate hunger and alleviate poverty in the mountainous area (Programme 661).</p>	<p>wood and 20 millions ster of firewood.</p> <p>- Create employment for 2 millions people.</p>	<p>- In 2004, there were 2.4 millions ha of newly planted forests</p>
<i>Protect traditional knowledge, innovations and practices</i>				
<i>Goal 9</i> <i>Maintain socio-cultural diversity of indigenous and local communities</i>				
Target 9.1. Protect traditional knowledge, innovations and practices	<ul style="list-style-type: none"> • Status and trends of linguistic diversity and numbers of speakers of indigenous languages • <i>Additional indicators to be developed</i> 		Status of indigenous knowledge and local language use	<p>- Languages and intangible cultures of different ethnic groups have been conserved and developed.</p> <p>- Indigenous knowledge is respected as an important resource as other tangible resources, and is conserved and developed</p> <p>- There is one TV channel, VTV5, broadcast in ethnic minority languages.</p>
Target 9.2.. Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit sharing	<i>Indicator to be developed</i>	- Diversify community-based models to manage, develop and sustainably use biodiversity with benefits from tradition.	- Community-based PNA management models.	<p>- Hon Mun community-based MPA management model</p> <p>- Community-based orchid production models in Phong Nha-Ke Bang National Park.</p> <p>- Limestone landscape ecotourism models in Pu Luong – Cuc Phuong.</p> <p>- Community-based sea turtle protection model in Nui Chua (King Mountain) National Park in Ninh</p>

				Thuan. - The model “Community-based sustainable livelihood and wetland natural resources conservation” is piloted in Lang Sen Wetland Protected Area, testing co-management mechanism.
-	-	- Protect and develop mountainous ethnic groups’ indigenous knowledge in using flora resource	- Status of using medicinal plants and traditional remedies.	- Hundreds of medicinal plants and family-handed remedies were collected from Dao, Nung, Tay, H’mong populations in northern mountainous area in Vietnam.
-	-			- Several traditional festival like Cau ngu (praying for fish) of coastal populations are maintained and developed.
Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources		<i>MOSTE (1997) Regulations for gene source conservation and management 2004. Cultivated Plant Species Ordinance and Domesticated Animal Species Ordinance</i>		
Goal 10. Ensure the fair and equitable sharing of benefits arising out of the use of genetic resources		Ensure benefits of communities, organizations and individuals in exploit and protect gene source (Ordinance)		
Target 10.1. All transfers of genetic resources are in line with the Convention on Biological Diversity, the International Treaty on Plant Genetic Resources for Food and Agriculture and other applicable agreements.	<i>Indicator to be developed</i>	- Ensure benefits of communities, organizations and individuals in exploit and protect gene source (Ordinance)		- Communities, organizations and individuals benefit from biodiversity-related gene source exploitation and protection
Target 10.2. Benefits arising from the	<i>Indicator to be developed</i>	- Ensuring the right to participate and the actual participation of the		- Local people in Cuc Phuong National Park are now able to plant

<p>commercial and other utilization of genetic resources shared with the countries providing such resources.</p>		<p>community in the process of assessment for strategies, policies, planning schemes, programmes and investment projects related to PNAs</p>		<p>orchids. Others in some PAs are supported and guided with ecotourism services. The people are allocated land, forest and water surface for management, exploitation, use and production.</p> <p>- Supported by the project “Conserve gene source of livestock”, scientists transferred husbandry techniques to help some households develop parent flocks and 6,000 hatching eggs of Dong Tao chicken species. Therefore, local people can benefit from the development of precious indigenous chicken species.</p>
<p>Ensure provision of adequate resources</p>		<p>-</p>		
<p>Goal 11: Parties have improved financial, human, scientific, technical and technological capacity to implement the Convention</p>		<p>-</p>	<p>-</p>	
<p>Target 11.1. New and additional financial resources are transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with Article 20.</p>	<ul style="list-style-type: none"> Official development assistance provided in support of the Convention 	<p>-</p>	<p>-</p>	

<p>Target 11.2. Technology is transferred to developing country Parties, to allow for the effective implementation of their commitments under the Convention, in accordance with its Article 20, paragraph 4.</p>	<p><i>Indicator to be developed</i></p>	<p>-</p>	<p>-</p>	
<p>-</p>		<p>Enhance the government's biodiversity and biosafety management capacity (NBAP 2007)</p>		
<p>-</p>	<p>-</p>	<p>- Complete and strengthen the government's management capacity</p>	<p>Set responsibilities for each Ministries, sectors and People's Committees at all provinces and cities.</p>	<p>Initial functions and tasks of the Ministries, sectors and People's Committees at all provinces and cities related to conservation have been identified as following:</p> <ul style="list-style-type: none"> - The MONRE in charge of making environmental policies and laws, as the national focal agency to direct CBD and NBAPs implementation. - The MARD in charge of managing the system of both inland and marine PNAs, protecting wildlife animals in other forests in the country, protect freshwater and marine resources, as the national agency to manage THE CITES and the Vietnam Conservation Fund. - The MPI, MOCST and MOST is charge of components related to biodiversity. - People's Committees at all provinces and cities are responsible to cooperate with provincial departments in biodiversity conservation activities. Provincial

				People's Committees in charge of managing most of SUF and PAs, integrating biodiversity conservation into local plans and programmes.
-	-	- Complete mechanism, policies and legal documents	- Release legal documents	- The Environment Law has been upgraded and enacted. - The Biodiversity Law has been prepared and approved by the National Assembly.
-	-	- Enhance infrastructure, train staff	Educate and train managers, students and forest/marine management staff about environment, conservation and biodiversity.	- Related universities and research institutes have opened undergraduate and graduate programmes on biodiversity conservation and sustainable management. - Many long and short courses on biodiversity conservation and management have been opened for thousands of staff in environmental, agricultural... sectors, especially those in forest management. At present, 3 Biodiversity Training Centres are maintained in Cuc Phuong, Bach Ma and Cat Tien National Parks. - In the second phase of the ADB 5712-REG Project (Marine and coastal management project), about 900 staff were fully equipped with managerial, administrative and technical knowledge in 20 priority MPAs. - Short trainings, national and international workshops have been opened for managers and scientists

				from different ministries and sectors. Recently, in 8/2002, the Department of Biology in College of Natural Sciences, Ha Noi National University in cooperation with French-speaking Communities has organized 2 trainings on biodiversity (one in the North and one in the South) for more than 60 managers and researchers.
-	-	- Propagate and educate to raise public awareness	Communication events, trainings, workshops, and contests on environment, conservation and biodiversity.	<p>Awareness of biodiversity in every class in Vietnamese society has initially progressed. The Biodiversity Awareness Raising Programme, period 2001-2010, has started with specific objective to enhance understanding on biodiversity, its importance, status and guidance for sustainable use; and to improve community participation in biodiversity conservation activities.</p> <ul style="list-style-type: none"> - Workshops and trainings have been organized for central and local managers, decision makers and students. - Many initiatives have improve understanding on biodiversity through radio, television and newspapers - Contests raising awareness of environment in general and biodiversity conservation in particular (via drawing, taking photos...) have been organized.

				- The Fishery sector has open trainings on biodiversity conservation for fishermen. In the scope of the project Sthengthening of Capture Fisheries Management (SCAFI), a National communication strategy for exploitation and protection of fishery benefits with co-management mechanism.
-	-	- Ensure 100% of gene-alterated species and products made from them be examined for risks in Vietnam before being distributed in the market		

Appendix VI. The Government and Ministers' Recent Legal Documents related to Biodiversity in Vietnam

a. The Sector of Natural Resources and Environment

- Decision No. 16/2007/QĐ-TTg by the Prime Minister approved the Overall Scheme on national environment and natural resources monitoring system to the year 2020. One component of the network to monitor national environment and natural resources is biodiversity monitoring in 49 national parks and PNAs.
- Decision No. 81/2006/QĐ-TTg (14/4/2006) by the Prime Minister approved the National Strategy on Water Resources to the year 2020. One task of this Strategy is to protect the intactness of aquatic ecosystems including wetlands, river mouths and coasts. Besides, another task of sustainable water resource development is to strengthen forest protection and development, especially watershed protection forests. Water sources of rivers and reservoir also need to be maintained and developed.
- Decision No. 47/2006/QĐ-TTg (1/3/2006) by the Prime Minister approved the Project on fundamental investigation and management of marine biodiversity and benefits in Vietnam; make plan for and set up a system of MPAs for sustainable development.
- Decision No. 256/2003/QĐ-TTg (2/12/2003) by the Prime Minister approved the National Environment Protection Strategy to the year 2010 and its orientation towards 2020. One of this Strategy's goal is to ensure high ecological balance. Its specific objectives are: Recover 50% of mining areas, 40% of degraded ecosystems (NSEP 2004); Increase forest cover to 43%; Recover 50% of degraded watershed forest area and improve forest quality; Strengthen dispersal planting in the community; Increase clean energy using quantity to 5% of total used energy annually; Increase total area of PNAs to 1.5 times of the current area, especially marine and wetland protected areas; Recover mangrove forest area to 80% of that in 1990. Based on given objectives, the tasks in regard to biodiversity and nature conservation are identified as: Protect and develop PNAs and national gardens; Develop forests and increase area of flora; Protect biodiversity.
- Decision No. 26/2002/QĐ-BKHCHNMT (8/5/2002) by the MOSTE Minister approved the Improving Biodiversity Understanding Program in 2001-2010, with long-term objective: Raise public awareness and knowledge of biodiversity's role in sustainable socio-economic development, making biodiversity one of present time's ethic codes and a resource for social development.
- Decision No. 328/2005/QĐ-TTg (12/12/2005) by the Prime Minister approved the National Plan for Environmental Pollution Control to the year 2010. One goal of pollution control is to strengthen capacity for environmental pollution control and waste disposal, especially in key economic regions, urban areas, industrial zones, professional villages and river valleys.
- Decision No. 129/2001/QĐ-TTg (29/8/2001) by the Prime Minister approved the National Plan for Oil Spill Response in 2001-2010. One goal to the year 2005 is to ensure available effective oil spill response in areas with high risks such as the sea in Ba Ria – Vung Tau, rivers in Sai Gon – Dong Nai, Central Region's sea from Da Nang to Nha Trang, rivers and seas in Hai Phong city and Ha Long Bay.
- Decision No. 34/3005/QĐ-TTg (22/02/2005) by the Prime Minister approved the Governmental Action Plan to make the Resolution 41 operationalised. Nature conservation and biodiversity protection are clearly addressed in this action plan.
- Circular No. 08/2006/TT-BTNMT (8/9/2006) by MONRE provides guidance to do "Strategic Environmental Assessment, Environmental Impacts Assessment and Environmental Protection Agreement". This circular specifically regulates the requirements of situation description, objectives, scoping of impacts, trends of changes of natural components that must include biodiversity contents.

b. The Sector of Agriculture

- Decision No. 733/QĐ-TTg (16/5/2006) by the Prime Minister approved the Emergent Action Plan for Elephant Conservation in Vietnam to the year 2010. This Plan's objectives are identified as: Conserve and develop sustainably wild elephant and domesticated elephant communities existing in Vietnam, as well as conserve sustainably their habitats; Stop the decline in quantity of elephants, ensuring at least 3 elephants living areas conserved and developed in 21st century; Conserve in-situ isolated elephant communities with small quantity to ensure best condition for their long-term existence.

- Decision No. 78/2004/QĐ-BNN (31/12/2004) by the MARD Minister promulgated the List of precious and rare livestock species forbidden from export.

- Decision No. 192/2003/QĐ-TTg by the Prime Minister approved the Strategy to manage Vietnam's PNA system to the year 2010. According to the Strategy, development in the near future must not harm the future protection and management of the country's biodiversity and natural resources, ensuring comprehensive principles including conservation of gene source, species and ecosystems, preventing all risks to damage all these values. In particular, management of PAs and their buffer zones needs unanimous and close cooperation between different sectors from central to local levels via specific mechanisms and plans.

- Decision No. 2117/1997/QĐ-BKHCH&MT (30/12/1997) by the MOSTE promulgated the Regulation for management and conservation of fauna, flora and microorganism gene sources. The contents of gene source protection and conservation management are: Investigate and collect gene sources suitable to characteristics of each plant, animal and microorganism; Long-term and safely conserve collected gene sources according to each species' biological characteristics and availability of techniques and equipments of the conservation agencies; Evaluate gene sources with suitable biological indicators; Documentation: all gene sources after being evaluated must be documented via survey, description form, evaluation form, graphic, map, photograph, brochure, catalogue or informatic database; Regularly exchange information, documents and gene sources between agencies joining the conservation system; Save and provide information and documents for scientific or production agencies/organizations when necessary. In some cases the data can be exchanged with foreign agencies but require approval of responsible agencies.

c. The Sector of Forestry

- Decision No. 258/2006/QĐ-TTg by the Prime Minister to approved the Program to investigate, assess and monitor forest resources succession in 2006-2010 (Circle IV). One content of the program is To investigate, assess and monitor forest and forest land succession including: assess and monitor succession of indicators of forest quality, of forest animal resource at national scale, of forest insect resource and harmful pests, of forest resources under socioeconomic impacts; To investigate, collect data, analyse and assess the impacts of socioeconomic condition on changes of forest resources in 8 regions and throughout the country.

- Decision No. 18/2007/QĐ-TTg (5/2/2007) by the Prime Minister approved the Vietnam's Forestial Development Strategy in 2006-2020. The objectives to the year 2020 are to set up, manage, protect, develop and sustainably use 16.24 millions ha of land planned for forestry purposes; to increase forestland rate to 42-43% in 2010 and to 47% in 2020; to ensure the participation of business components and social organizations in forestry development in order to contribute to socio-economic development, environment protection, biodiversity conservation, environmental services provision, hunger eradication and poverty alleviation, livelihood improvement for rural mountainous people, and national security assurance.

- Decision No. 06/2004/QĐ-BNN (22/03/2004) by the MARD Minister promulgated the "Biodiversity Conservation in the Central Annamite Ecoregion 2004-2020". The long-term goal of this program is: adopting integrated methods to manage, protect and recover natural resources and biodiversity in Central Annamite in sustainable way in the industrialization and modernization process; raising awareness of conservation, developing management capacity, and improving living standards of local people.

- Decision No. 78/2002/QĐ-BNN (28/08/2002) by the MARD was attached with a technical procedure to monitor forest and forestland motivation for forest management taskforce. This procedure includes basic contents, technical solutions, implementation and report mechanism regarding monitoring forest and forestland motivation for forest management taskforce. Every year they have to know areas of available forest types and forest land; changes in areas of forests and lands planned for forestry production in order to help central and local authorities in forestry planning and policy making for forest protection and development.

d. The Sector of Fishery

- Decree No. 57/2008/NĐ-CP (2/5/2008) by the Prime Minister promulgated Regulations for management of Vietnamese MPAs of national and international importance. Contents of this Decree are: identify activities of an MPA; identify financial resources for MPAs.

- Decision No. 485/QĐ-TTg (2/5/2008) by the Prime Minister approved the Project “Protection of Precious, Rare and Endangered Aquatic Species to 2015 and its Vision Towards 2020”. This project aims to prevent the increase of endangered species, and gradually recover and develop endemic, precious and rare species in Vietnam based on promoting community participation to contribute to biodiversity conservation and sustainable fishing development.

- Decision No. 242/2006/QĐ-TTg (25/10/2006) by the Prime Minister approved the Marine Products Export Development Program to the year 2010 and its orientation towards 2020.

- Decision No. 10/2006/QĐ-TTg (11/1/2006) by the Prime Minister approved the Overall Fishery Development Plan to the year 2010 and its orientation towards 2020. The Plan includes environment protection in the sector’s development.

- Decision No. 131/2004/QĐ-TTg (16/7/2004) by the Prime Minister approved the Protecting and developing benefits of marine products Program till 2010. Objectives of the Program include: Protecting and conserving biodiversity of aquatic creatures, especially precious species with high scientific and economic value; maintaining the diversity and uniqueness of aquatic ecosystems for present and future. Recovering benefits of products from marginal seas, rivers, reservoirs and wetlands for aquacultural sustainable development.

- Decision No. 175/2004/QĐ-BTS (8/3/2004) by the Ministry of Fishery approved the Action Plan for Sea Turtle Conservation in Vietnam to the year 2010. The Plan’s overall goal: Protect, Conserve and Manage one marine animal group (sea turtle) and their habitat. Strategic objectives: Minimize impacts on sea turtles in Vietnam, therefore assist the recovery of sea turtle communities in the wild; Help national agencies and international organizations understand better sea turtle conservation activities conducted in Vietnam, and thus find most effective ways to involve. Specific objectives: Minimize sea turtles’ death risks; manage their reproduction and incubation sites; protect, manage and recover their habitat; Research and monitor; Educate and raise public awareness; Cooperate in sea turtle conservation at national, regional and international levels.

- Decision No. 133/QĐ-BTS (29/01/2007) by the Ministry of Fishery promulgated Guidance to assess environmental impacts of coastal aquaculture.

- Decision No. 82/2008/QĐ-BNN (17/7/2008) by the MARD Minister promulgated the List of precious aquatic species endangered to be extinct in Vietnam in need of protection, recovery and development. 236 aquatic species were listed in this Decision.

e. The Sector of Industry and Trade

- Decision No. 145/2007/QĐ-TTg (4/9/2007) by the Prime Minister approved the Vietnam’s Steel Development Plan in 2007-2015, with consideration towards 2025. Solution for environment protection in the Plan is “No approval will be given to metallurgy projects without EIA reports and passing environmental standard requirements”.

- Decision No. 134/2001/QĐ-TTg (10/9/2001) by the Prime Minister approved the Vietnam’s Steel Development Plan to the year 2010, which states “Apply modern and highly automated technology,

save materials and electricity, ensure environment standard requirements...; Selected technology should be long-living, flexible (easy to be upgraded and modernised when necessary) to replace old technology with low effectiveness and bad impacts to the environment”.

- Decision No. 176/2004/QĐ-TTg (5/10/2004) by the Prime Minister approved the Vietnam’s Electricity Development Strategy in 2004-2010 and its orientation towards 2020. One of the Strategy’s goals is to control and reduce environmental pollution in the sector’s activities. The content of science and technology development related to environment in this Strategy is to study and apply modern manufacturing technologies that bring effectiveness, save energy and minimize environmental impacts with rational steps.

- Decision No. 164/2002/QĐ-TTg (18/11/2002) by the Prime Minister approved the Adjustment Plan for Vietnam’s Cement Development to the year 2010 and its orientation towards 2020. The Plan’s point towards investment and technology is reflected as: Developing the cement industry must ensure economic effectiveness, highly competitive products in the condition of regional and international integration, using resources rationally, protecting environment, historical and cultural sites, landscape and national security. Using the world’s modern and highly automated technologies to improve product quality, save energy; and encouraging domestic manufacture of machines, tools and other components that meet the requirements of product quality and environment protection following national and international standards.

- Decision No. 108/2005/QĐ-TTg (16/5/2005) by the Prime Minister approved the Vietnam’s Overall Cement Industry Development Plan to the year 2010 and its orientation towards 2020. The Plan’s point towards investment and technology is reflected as: Investments in cement projects must ensure socio-economic effectiveness highly competitive products in the condition of regional and international integration, using resources rationally, protecting environment; Diversify materials used for cement production including re-use waste of other industries, ensuring standards of product quality and environment protection.

- Decision No. 150/2007/QĐ-TTg (10/9/2007) by the Prime Minister approved the Vietnam’s Overall Industrial Explosion Materials Development Plan to the year 2015 and its orientation towards 2025, with the content: “During manufacture, storage, transportation and using process, ensure complete safety, environment protection...”

- Decision No. 115/2001/QĐ-TTg (1/8/2001) by the Prime Minister approved the Vietnam’s Overall Construction Materials Development Plan to the year 2010. The Plan’s point is: “Manufacture of construction materials must ensure economic effectiveness, using resources rationally, protecting environment, historical and cultural sites, landscape and national security.”

- Decision No. 105/2008/QĐ-TTg (21/7/2008) by the Prime Minister approved the Vietnam’s Plan for Zoning, Exploitation and Use of Minerals to produce Cement until 2020. The Plan’s point in regard to environment protection is reflected as: Developing probe, exploitation and mineral resources using must accord with regulations to protect natural heritages, historical monuments, archaeological sites, valuable cultural works and tourist sites, and the environment; applying modern technologies to minimize negative impacts on environment and natural landscape, recovering or improving the environment at closed and on-going mines;

- Decision No. 11/2008/QĐ-BCT (5/6/2008) by the Ministry of Industry and Trading approved the Vietnam’s Plan for Zoning, Exploration, Mining, Processing and Use of gold, copper, nickel, molybdenum ores to the year 2015, with consideration towards 2025. The environment-related solutions components in this Plan are: All business that explore and process minerals must include solutions for environment protection when zoning, exploiting and processing minerals; special attention should be paid for modern, environmentally friendly golden ore processing technology using cyanid, sulfur ore processing technology (following regulations on solid, water and air waste; collecting water in circle, re-use SO₂ to produce H₂SO₄); seriously return the land and environment after exploitation. Ensure industrial hygien and labour safety. Encourage to study and apply modern technology to protect environment in all manufacture processes. Governmental managerial agencies invest more in equipments for monitoring and control environment.

- Decision No. 05/2008/QĐ-BCT (4/3/2008) by the Ministry of Industry and Trading approved the Vietnam's Plan for Zoning, Exploration, Mining, Processing and Use of tin, wolfram and antimon ores in 2007-2015, with consideration towards 2025. The environment-related solutions components in this Plan are: All business that explore and process minerals must include solutions for environment protection when zoning, exploiting and processing minerals; seriously return the land and environment after exploitation. Ensure industrial hygien and labour safety. Encourage to study and apply modern technology to protect environment in all manufacture processes.
- Decision No. 167/2007/QĐ-TTg (1/11/2007) by the Prime Minister approved the Plan for Zoning, Exploration, Mining, Processing and Use of bauxite in 2007-2015, with consideration towards 2025. The Plan's point is: "Ensure the exploration, mining and processing of bauxite are economical, effective and environmentally protective..."
- Decision No. 176/2006/QĐ-TTg (1/8/2006) by the Prime Minister approved the Plan for Exploration, Mining, Processing and Use of lead, zinc ores in 2006-2015, with consideration towards 2020. The Plan's point is: "Developing the industry of mining and processing lead, zinc ores must accord with requirements for national security, protection of natural heritages, historical sites, cultural works and environment at the locality owning lead, zinc sources..."
- Decision No. 124/2006/QĐ-TTg (30/5/2006) by the Prime Minister approved the Plan for Exploration, Mining, Processing and Use of iron ores to the year 2010 and its orientation towards 2025. The Plan's point is: "Exploration, mining, processing and use of iron ores must be rational, economical, effective and environmentally protective..."
- Decision No. 104/2007/QĐ-TTg (13/7/2007) by the Prime Minister approved the Plan for Exploration, Mining, Processing and Use of titanium ores in 2007-2015 and its orientation towards 2025. The Plan's point is: "Ensure the exploration, mining and processing of titanium ores are economical, effective and environmentally protective..."
- Decision No. 89/2008/QĐ-TTg (7/7/2008) by the Prime Minister approved the Vietnam's Coal Sector Development Strategy to the year 2015 and its orientation towards 2025. The Plan's point insists that development of the coal sector must include protection and improvement of environment and landscape; The goal till 2010 is to suspend environmental and water pollution; The goal till 2015 is to basically improve key environmental indicators in vulnerable places.
- Decision No. 20/2003/QĐ-TTg (29/1/2003) by the Prime Minister approved the Vietnam's Coal Sector Development Plan in 2003-2010 with consideration towards 2020. Orientation for the sector development says "The development of the coal sector must bind to the development of socio-economy, tourism, national security and environment protection in coal-mining areas, especially Quang Ninh province." In regard to manufacture technology: "Complete and modernize the set of technologies to process, transport coal and the pouring system at the port, minimize impacts on the environment."
- Decision No. 160/QĐ-TTg (4/9/1998) by the Prime Minister approved the Overall Paper Industry Development Plan to the year 2010. The Plan's point in regard to technology is: New construction or widening projects must use modern and high automated technologies to save energy and materials, protect the environment following national and international standards.
- Decision No. 149/QĐ-TTg (19/8/1998) by the Prime Minister approved the Planning for Forestrial Development of the Northeastern Pit Prop Wood Materials to the year 2010. The Planning's objective is "together with solutions for regional construction and forestrial development, increase forest cover to 55% in 2010, contributing to environment protection"
- Decision No. 207/2005/QĐ-TTg (18/8/2005) by the Prime Minister approved the Vietnam's Chemical Industry Development Strategy to the year 2010, with consideration towards 2020. One of the Strategy's point is to invest in modern technologies to produce high quality products with competitive price, protecting the environment.

- Decision No. 36/2007/QĐ-BCN (6/8/2007) by the Ministry of Industry approved the Overall Leather – Shoes Industry Development Plan to the year 2010. The environment-related content regarding product planning is: “Build up focal industrial zones with enough conditions for infrastructure and environment impacts management.”

- Decision No. 343/2005/QĐ-TTg (26/12/2005) by the Prime Minister approved the Vietnam’s Chemical Industry Development Plan to the year 2010, with consideration towards 2020. The environment-related content regarding plant protection drugs is to apply modern processing technologies to produce environment-friendly products.

- Decision No. 36/2008/QĐ-TTg (10/3/2008) by the Prime Minister approved the Vietnam’s Textile Industry Development Strategy to the year 2015 and its orientation towards 2020. In regard to environment protection, one orientation is to require EIA reports from all textile factories and to seriously punish those polluting the environment.

f. The Sector of Finance

- Circular No. 6/2007/TT-BTC (26/1/2007) by the Finance Ministry provides guidance to make financial proposals, manage and use finance to ensure the quality of evaluation activities for policy, strategy, planning scheme and plan implementation. This Circular provides guidance in terms of spending levels and sources.

- Inter-ministries Circular No. 01/2008/TTLT-BTNMT-BTC (29/4/2008) provides guidance to make financial proposals for environment protection activities using financial source for environment.

g. The Sector of Education

- Decision No. 201/2001/QĐ-TTg (28/12/2001) by the Prime Minister approved the Education Development Strategy in 2001-2010. MONSTE is in charge of the implementation, cooperating with the Ministry of Education and Training, other ministries and local authorities to provide mechanisms, policies and plans to use the sector’s potential in doing researches in environmental sciences, technologies and application.

- Decision No. 163/QĐ-TTg (17/10/2001) by the Prime Minister approved the Project to integrate environment protection contents into the national education system.

h. The Sector of Tourism

- Decision No. 564 /QĐ-BVHTTDL (21/9/2007) approved the Tourism Action Plan after Vietnam joining WTO in 2007-2012 with the following contents in regard to biodiversity and environment protection: Protect the environment and develop tourism sustainably; cooperate with the MONRE to set up an environment protection project to improve environment monitoring capacity and respond to environmental problems in national tourist areas; strengthen the monitoring and supervision of natural resources exploitation, environment protection for sustainable tourism development; build up a sustainable tourism development strategy to implement the Vietnam Agenda 21; build up the tourism sector’s environment protection program and integrate it into the sector’s plans for training and providing information; improving the effectiveness of activities to fulfill environmental responsibilities; study, set up and apply environmental standards in tourism.

- Decision No. 121/2006/QĐ-TTg (29/5/2006) by the Prime Minister approved the National Tourism Action Plan in 2006-2010. One task of this Plan is to protect natural resources and environment, develop tourism in a sustainable manner.

- Decision No. 02/2003/QĐ- BTNMT (28/07/2003) by the MONRE promulgated the Regulation for Environment Protection in Tourism. The promulgation of this Regulation is to protect the tourism environment, prevent and minimize bad impacts to environment when conducting tourism activities, ensure sustainable tourism development and contribute to national environment protection. This Regulation is applied for all environment-related tourism activities throughout the territory of the Republic Socialist of Vietnam and for all organization and individuals working in the tourism sector.

- Decision No. 97/2002/QĐ-TTg (22/7/2002) by the Prime Minister approved the Vietnam's Tourism Development Strategy in 2001-2010. One way to implement this Strategy is to integrate education of natural resources and tourism environment in the study programs in the tourism educational system of all levels; to raise awareness and understanding of the protection of natural resources and tourism environment for tourists and local communities through public communication means.

i. The Sector of Science and Technology

- Decision No. 01/2006/QĐ-TTg (3/1/2006) by the Prime Minister approved the Peaceful Utilization of Nuclear Energy to the year 2020. One of the Strategy's task is to use the nuclear-analysing techniques and related ones in evaluating environment pollution (sea, soil, water, air). Dispose waste with gamma tomographic technique and accelerated electrons technique. Sweep and dispose bombs and mines with nuclear techniques.

- Decision No. 156/2005/QĐ-TTg (23/6/2005) by the Prime Minister approved the Vietnam's Overall Museum System Planning to the year 2020. One related content of the Planning is: Vietnam's Museum of Nature is the top one in the museum system specialized for the history of nature and preserved natural areas.

- Decision No. 272/2003/QĐ-TTg (31/12/2003) by the Prime Minister approved the Vietnam's Science and Technology Development Strategy to the year 2010. One of the Strategy's task is to study utility values of natural resources in the country to provide a foundation for planning and selecting effective technologies for exploitation. Pay attention to study the potential of biodiversity and valuable natural resources with risks of exhaustion due to overexploitation and environmental degradation.

k. The Sector of Transportation and Construction

- Decision No. 206/2004/QĐ-TTg (10/12/2004) by the Prime Minister approved the Vietnam's Transportation Development Strategy to the year 2020 with contents related to biodiversity and environment protection as following: Investigate, analyse and assess environmental impacts during the construction and use of transportation system; study and propose solutions to minimize environmental impacts during the construction and use of transportation system; study mechanisms for environment protection in the transportation sector.

- Decision No. 2242 QĐ/KHKT-PC (12/9/1997) promulgated the Regulation for environment protection in transportation sector. This Regulation identifies basic principles for environment protection applied for all organizations and individuals during the construction, maintenance, repairing and use of transportation means or doing business, providing services in the transportation sector.

- Circular No. 8/2000/TT-BXD (8/8/2000) by the Ministry of Construction provides guidance to write EIA reports for planning and construction projects. This guidance also includes some contents related to assessing impacts on biodiversity.