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To support the development of this strategy, a number of policy research consultancies were undertaken. These have been developed into a series of Technical Reports, available in both English and Vietnamese. They are:

1. *Assessment of Legal Documents and Policies Relating to Management of Special-use Forests in Vietnam.*
2. *Assessment of the Special-use Forest System and its Management in Gia Lai Province.*
3. *Assessment of the Special-use Forest System and its Management in Ba Ria-Vung Tau Province.*
4. *Assessment of the Special-use Forest System and its Management in Thua Thien Hue Province.*
5. *Assessment of the Special-use Forest System and its Management in Lao Cai Province.*
6. *Institutional and Financial Arrangements for Protected Area Management in Vietnam. Overview and Recommendations.*
7. *Legislation Enforcement Capacity and Training needs in Special–use Forests*
8. *Institutional Strengthening and Capacity Building for Biodiversity Conservation in Protected Areas.*
9. *Biodiversity Conservation Survey, Monitoring and Training Needs for Special-use Forests*
10. *Buffer Zone Management and Investment*
11. *Perceptions of Ethnic Groups and Women about Protected Area Management*

? Cover photographs: WWF-LINC project and Cat Tien NP Conservation project

? Copies of the above Technical Reports and this proposed strategy are available from:

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PROPOSED MANAGEMENT STRATEGY

FOR

A PROTECTED AREA SYSTEM

IN VIETNAM

2003 – 2010

HANOI - 2002

TABLE OF CONTENTS

TABLE OF CONTENTS ..... **i**
LIST OF ABBREVIATIONS **1**
EXECUTIVE SUMMARY **3**
MESSAGE FROM MARD **7**
MESSAGE FROM THE DONOR **9**
ACKNOWLEDGEMENTS **11**
CHAPTER 1 : CURRENT SITUATION OF PROTECTED AREAS **15**
1.1. Biodiversity of Vietnam *15*
1.2. Current status of the Protected Areas System *27*
1.3. International conventions *44*
CHAPTER 2 : STRATEGIC MANAGEMENT TO 2010 ..... **47**
2.1. Administration, management and financial reforms *48*
2.2. Biodiversity conservation and management measures *54*
2.3. Improving knowledge and skills *66*
2.4. Community awareness and participation in conservation *75*
2.5. International cooperation in biodiversity conservation *80*
CHAPTER 3 : ACTION AND INVESTMENT PROGRAMME **85**
3.1. Implementation steps *85*
3.2. Investment development *87*
3.3. Integration with other strategies and programs *88*
3.4. Monitoring and reporting progress *89*
3.5. Priorities *90*
GLOSSARY OF TERMS **95**
REFERENCES USED **99**
ANNEXES **103**
Annex 1. Membership of the Project Steering Committee. 103
Annex 2. Membership of the National Protected Area Working Group. ... 104
Annex 3. Membership of the Provincial Working Groups in the pilot provinces. 105
Annex 4. The existing protected areas system of Vietnam. 107
Annex 5: Proposed protected areas categorised under the new system 113
Annex 6. Categorization of protected areas 121
Annex 7. Priority criteria for protected area management and conservation 130
Annex 8. Training needs. 131
Annex 9. International conventions 132

LIST OF ABBREVIATIONS

5MHRP	Five Million Hectare Reforestation Program (661 Program)
BAP	Biodiversity Action Plan (1995)
Birdlife	Birdlife International
CEMP	Committee for Ethnic Minority People
CRES	Centre for Resources and Environmental Studies
Danida	Danish International Development Assistance
DARD	Department of Agricultural and Rural Development (Provincial)
DARP	Department of Aquatic Resources Protection
DEA	Danish Environmental Assistance
DFD	Department of Forest Development
DOSTE	Department of Science, Technology and Environment (Provincial)
EAP	Eco-region Action Program
ERBC	Eco-region Biodiversity Conservation (now EAP)
FFI	Flora and Fauna International
FIPI	Forest Inventory and Planning Institute
FPD	Forest Protection Department, MARD
FSIV	Forestry Science Institute of Vietnam
FSSP	Forest Sector Support Programme
FUV	Forestry University of Vietnam
GAAs	Government Aid Agencies
GCPO	Government Commission for Personnel Organisation
GDLA	General Department of Land Administration
GDT	General Department of Tourism
ICD	International Cooperation Department, MARD
IEBR	Institute of Ecology and Biological Resources
IMA	International Marinelife Alliance
MASPAS	Management Strategy for A Protected Area System in Vietnam (this strategy)
IUCN	World Conservation Union
MARD	Ministry of Agriculture and Rural Development
MET	Ministry of Education and Training
MOCI	Ministry of Culture and Information
MOF	Ministry of Finance
MOFi	Ministry of Fisheries
MOIA	Ministry of Internal Affairs
MONRE	Ministry of Natural Resources and the Environment
MPI	Ministry of Planning and Investment
NEA	National Environment Agency, MONRE
NGO	Non-government organisation

NNCA	The proposed 'National Nature Conservation Authority' to include the relevant parts of Departments in MARD, MONRE and MOFi. Until it is established, 'NNCA' refers to the relevant line Departments in these Ministries.
NP	National Park
NPAWG	National Protected Areas Working Group, SPAM Project
NPO	National Project Office, SPAM Project
NR	Nature Reserve
NSTC	National Science and Technology Centre
NUHCM	National University of Ho Chi Minh City
VNUH	Vietnam National University, Hanoi
OOG	Office of Government
PA	Protected area
PAR	Public Administration Reform
PFPD	Provincial Forest Protection Department
PC	People's Committee
PPC	Provincial People's Committee
PWG	Provincial Working Group, SPAM Project
REFAS	Reform of the Forestry Administration System
RWEDP	Research of the Wood Energy Development Programme
SNV	Netherlands Development Assistance
SPAM	Strengthening Protected Area Management
TRAFFIC	Flora and fauna trade monitoring and analysis (joint WWF and IUCN program)
UNDP	United Nations Development Program
UNEP	United Nations Environment Program
UNESCO	United Nations Educational, Scientific and Cultural Organisation
VCCI	Vietnam Chamber of Commerce and Investment
WB	The World Bank
WWF	World Wide Fund for Nature

EXECUTIVE SUMMARY

This is the first strategic framework for a protected area system in Vietnam. Along with other environment related strategies and plans, it is a further demonstration that in Vietnam we are striving to be responsible stewards of our environment. The need for this strategy is paramount conserving our natural heritage with the dauntingly complex problems we face has a window of opportunity for success if addressed now. This opportunity will not exist in a few years time if action is delayed.

The strategy has as its goal the protection, within an ecologically sustainable development framework, of the rich and unique biodiversity and landscape resources of Vietnam, and their roles in socio-economic development, that are located within the protected area system. The following Core Objectives for the strategy are derived from that goal:

1. To propose a complete protected area system of terrestrial, wetland, coastal and marine areas.
2. To reform protected area policy and management institutions and strengthen administrative and management capacity for relevant agencies at central and local levels.
3. To develop the roles of local people and communal authorities in conservation of protected areas.
4. To improve general awareness of biodiversity importance and values for Vietnam at the international, national, provincial and local levels.
5. To identify sources of funding and their accessibility.

Identification of a consistent organization from central to district levels and effective administration and management of an integrated system of protected areas (forests, wetlands and marine areas) are prerequisites and central functions for biodiversity conservation nationally. They are a focus of this Strategy. National and provincial administration reform for protected areas management is one area of protected area management in Vietnam that needs repair. Two other critical issues are the categorization of protected areas and management of buffer zones and/or surrounding activities.

Administration reform

In Vietnam much effort has been made in developing the system of Special-use Forests (SUFs) at the central and provincial levels. Catchment Protection Forests and Production Forests have supplemented these. However, only SUFs have been identified specifically as having a biodiversity conservation role despite the need for the other forests to have the conservation of nature integrated into their operations. Wetlands, marine and coastal areas have only recently received attention and there is no central government legislation and minimal provincial

legislation addressing this essential need. Despite extensive coastal resources, integrated coastal management has received no attention whatever. Up to now, Vietnam has not had consistent PA planning and a comprehensive development strategy for biodiversity conservation. This strategy presents our way forward to encompass these issues for a united PA management system and environmental, social and economic sustainability for the country's future.

Categorization of protected areas

The present system of categorisation does not meet the country's current requirements and international standards for conservation. It applies only to Special-use Forests and does not cover wetlands and marine coral reef areas, essential for an integrated and comprehensive system. This strategy provides a categorisation system for protected areas and the criteria to apply to determine which areas could be in each category. Further development will determine the activities that are permissible in each category, in the appropriate zones determined by the government.

Buffer zones

Current legislation forbids the removal of timber and non-timber forest products from special-use forests. However, all SUFS have people, mostly from ethnic minority groups, living within or adjacent to SUFs and these people must use forest products for their subsistence living needs. Policies and legislation changes to address these uses on a sustainable and ecologically sound basis are required. Effective protected area management will involve our local communities as significant stakeholders in the sustainability of the ecosystems. Therefore, awareness raising, education about conservation principles and cooperative and coordinated management mechanisms need to be developed and maintained. In some cases this ideally will involve co-management with local people, who need to be included in decision-making. The role of women, in particular, must be addressed so that women are able to represent their own views in meetings and are made part of decision-making at all levels.

Biodiversity conservation

Biological diversity is the variety of life, the ecosystems, species and genetic resources of the world. In Vietnam we are fortunate to have some of the most diverse flora and fauna in the world and this part of our heritage is very valuable and must be conserved for future generations. To do this we first need to know more accurately what natural resources exist, where they are located and how abundant they are, through surveys and monitoring. There is no national coordination and little cooperation for sharing biodiversity information. Actions to establish national databases for flora and fauna collections in herbaria and museums with easy access regulations are needed.

Improving knowledge and skills

Presently, we do not have enough well-trained managers and field staff. Current general levels of education and skills are too low and there is a need to build capacity at central, provincial and district levels. In particular skills improvement is need in biodiversity conservation and regulation and enforcement. However, skills needed are numerous, including all aspects of the project management cycle, community consultation and participation, administration, policy development and the formulation of legislation.

International cooperation

Vietnam is a Contracting Party to four of the five global conventions related to biodiversity and the management of protected areas and wildlife species. These four are the Convention on Biological Diversity (CBD), the Convention on Wetlands (the Ramsar Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the World Heritage Convention (WHC). Vietnam is not a signatory to the closely related Convention on the Conservation of Migratory Species of Wild Animals (CMS). We should consider signing that convention and implementing its requirements so that we fully meet our international obligations.

The overall objectives for Vietnam in international cooperation activities for nature conservation, particularly in regard to managing maintaining and development the integrity and roles of protected areas are:

- To review the status of participation in those conventions which Vietnam has signed and ensure Vietnam's full implementation of the agreements;
- To examine, sign and actively participate in other conventions, where adequate resources can be secured, that are relevant to Vietnam's protection of its natural heritage in all protected areas and elsewhere throughout the nation; and
- To seek other opportunities for contributing to global conservation objectives.

As well as participation in international conventions, continued cooperation with, and assistance from, international donors and NGOs is essential for our country to move forward progressively on a foundation of sustainable development of our natural resources.

Implementation

It will be necessary to gain support for MASPAS implementation and to have the agencies with primary responsible and the supporting agencies embrace the objectives and actions detailed in the MASPAS. Without this acceptance of responsibility it will not be possible to obtain the level of participation and coordination necessary for success. This should be made easier as the Government's Administration Reform Program reaches fulfilment. This will also

allow the accomplishment of the MASPAS objective seeking the establishment of a unified national administration and management system for nature conservation. The establishment of the new Ministry of Natural Resources and the Environment should facilitate this.

Immediate priorities identified through the development of this strategy are:

- A new and comprehensive law to address all issues related to nature conservation (A *Law on Nature Conservation*).
- Institutional and administration reform to establish a single integrated national agency for nature conservation.
- The strengthening of capacity and skills for managers and rangers through short-term and long-term training;
- Establishment of formal communication links between management boards and agencies responsible for buffer zone development to review development decisions in both protected areas and the buffer zones.
- The development of protected area management plans and zoning plans with allowable development and activities defined so that management actions and integrated financial planning can be assessed and reviewed readily;
- The provision and improvement of necessary infrastructure directly supporting management, and the updating and provision of field equipment;
- An increase in conservation information and education provision to the local communities who are using protected areas resources, so that they may adjust their habits to assist biodiversity conservation; and
- Increased scientific research, surveys and biodiversity monitoring consistent with management plan requirements for each PA.

MESSAGE FROM MARD

Over the past 40 years, the management and protection of natural resources and biodiversity in Vietnam have been improving with efforts from the Government of Vietnam and support from international organisations. There are nearly 100 Special-use Forests established covering over 2 million ha in area nationwide. Legislation and policies on Special-use Forest management and protection and biodiversity conservation have been issued and improved. Vietnam has becomes a signatory of many international conventions related to this sector.

The Ministry of Agriculture and Rural Development always pays attention to management and protection of natural resources, accompanied by sustainable socio-economic development and maintaining national cultural values. The "Management Strategy for a Protected Area System in Vietnam" expresses clearly Vietnamese leaders' and people's wishes as well as the ones of national and international scientists and international communities. This Strategy will be a directive document for managers at all levels and sectors to improve collaboration, come to a consistent perception and take consistent actions in order to promote protected area system management in Vietnam more effectively. At the same time, it can help governmental agencies and international organisations to easily identify conservation objectives and priorities to design the most effective support projects.

We hope that the national *Management Strategy for a Protected Area System*, the first one of this kind in Vietnam, will contribute actively to activities in natural resource management and protection and biodiversity conservation of the country and it also creates favourable conditions to combine harmoniously with other benefits.

On behalf of the Ministry of Agriculture and Rural Development, I would like to send my gratitude to the Government of Denmark and World Wide Fund for Nature (WWF) for their effective funding and support during the development of this Strategy. I hope that recommendations from the Strategy will be implemented successfully with support and close collaboration with donors, international and non-government organisations and the utmost efforts of the Government of Vietnam.

Nguyen Van Dang
Standing Vice-Minister
Ministry of Agriculture and Rural Development

MESSAGE FROM THE DONOR

Danida (Danish International Development Assistance) has a long record of collaboration with Viet Nam in many sectors. The project *"Strengthening Protected Area Management in Vietnam"* is a good example of our environmental cooperation with Viet Nam.

Through this project the Government has attended to the challenges that need to be addressed in developing and establishing an integrated system of protected areas for forests, wetlands, coastal and marine areas.

The project has been implemented by the Forest Protection Department within the Ministry of Agriculture and Rural Development and facilitated by WWF (the World Wide Fund for Nature) and has emphasised participation from the Vietnamese people at the provincial, commune, village and household levels. This 'field-level' participation has been integrated with a higher level technical and policy dialogue, and I feel confident that this consultative process will result in high commitment and ownership to the implementation of the strategy.

In the coming decade economic development and the growing human population will put increasing pressures on Viet Nam's extraordinary flora and fauna, and the ecosystems in which they survive. Effective conservation of Viet Nam's biological diversity will continue to require a large input of resources, much of which will be channelled to the development of the protected area system covering the most important habitats. The project supported by Danida has assisted the Government of Viet Nam in setting its own agenda for management of these protected areas. It is now up to national authorities, international donors and especially the people of Viet Nam to meet this agenda, not at least to benefit the poorer communities living in the vicinity of protected areas and depending on their sustainable management.

The development and improved management of the Protected Areas in Viet Nam is a priority and desire of the Vietnamese people and we wish Viet Nam success in its effort to meet the demands for economic and social development along with the conservation of its natural heritage, the biological diversity and the landscapes characteristic of this unique nation.

Bjarne H. Sørensen
Ambassador of Denmark

ACKNOWLEDGEMENTS

Danida (the Danish International Development Agency) as part of the Danish Environmental Assistance (DEA) program to Vietnam provided the funding for the 'Strengthening Protected Area Management Project' (Contract VN0025.01), which has produced this comprehensive strategy over the past 26 months. The support of Mr. Henning Nohr, Development Co-operation Counsellor in the Embassy of Denmark and Mr. John Carstensen, Chief Technical Advisor and Co-ordinator of the DEA Programme in the Ministry of Planning and Investment, are particularly appreciated.

Input and support from many people have been considerable in developing the strategy. WWF Denmark and the WWF Indochina Programme, executed the project. Mr. Troels Dam Christensen, Programme Manager, South East Asia Programme for WWF Denmark made regular visits to Hanoi and provided helpful and constructive guidance. In Hanoi, particular appreciation is expressed to Mr. Eric Coull, the WWF Indochina Programme Representative, for his attention to details and for smoothing administrative pathways. Special thanks go to members of his staff in the WWF office in Hanoi for technical and administrative support. They worked closely with the National Project Office (NPO) and provided valuable support, particularly Mr. Hoang Thanh, Manager of the Vietnam Conservation Programme, Mr. Cao Chi Hung, Programme Officer and liaison point for the project, Mr. Martin Geiger, Forestry Co-ordinator, Ms. Tran Thanh Huong, Finance Manager and members of her staff, Ms. Nguyen Diep Hoa, Head of the Communication Unit and her staff and Mr. Tran Thanh Quang, Office Operations Manager.

Mr. Le Huy Ngo, Minister of the Ministry of Agriculture and Rural Development and Mr. Nguyen Van Dang, the Vice-Minister, provided the necessary political and administrative support. In the Forest Protection Department (FPD), the Director-General, Dr. Nguyen Ba Thu served to oversee the project's progress as the Chairperson of the Government's Steering Committee. The Steering Committee members provided policy and administrative guidance, approval for NPO activities and outputs and ensured that the NPO was able to meet project targets. The NPO appreciated the input of the members listed in Annex 1.

Mr. Tran Quoc Bao of the FPD, as the Chairperson of the National Protected Areas Working Group (NPAWG), was the central contact point and provider of information for the NPO. Other staff members of the FPD provided input in their areas of expertise primarily through membership of the NPAWG. Members of the NPAWG commented on all of the project's outputs produced by the NPO and the project's consultants and assisted greatly in the development of this strategy. The full membership of the NPAWG is given in Annex 2.

In the National Project Office, Mr. Ha Cong Tuan, a Deputy Director-General of the FPD, provided administrative guidance and input for the project as the National Project Director. Dr. Keith Williams, the Chief Technical Advisor, drafted sections of the strategy, managed and guided the project assisted by the expertise and extensive local knowledge of Mr. Do Quang Tung, the National Project Co-ordinator. Ms. Nguyen Thi Thu Thuy, the Project Assistant/Translator supplied high quality technical translating, interpreting and project assistance and Mr. Nguyen Trung Truc as the Project Driver got everyone to their destinations safely.

In each of the pilot provinces of Ba Ria -Vung Tau, Gia Lai, Thua Thien Hue and Lao Cai, cross-sectional Provincial Working Groups (PWG) were established to provide field-level analyses and input to the strategy specific to protected area management in their provinces. The enthusiasm and outputs of these PWGs was one of the reasons for the success of this project in developing the field-level approach. The Chairpersons of these PWGs also were members of the NPAWG and provided valuable connectivity for strategy development. The PWG Contact Officers in particular provided a valuable service to the NPO and to the numerous consultancy groups that visited each of the provinces. Members of the PWGs are given in Annex 3.

The material for the strategy has been based on the extensive background material, policy research and recommendations produced by the project's 12 consultancies. The professionalism of those consultants was very important to the project. Apart from those mentioned above, several other members of the NPAWG (Dr. Pham Nhat, Dr. Truong Quang Hai, Dr. Le Xuan Canh), the WWF Indochina Programme's Marine and Coastal Co-ordinator Ms. Tran Minh Hien (now Vietnam Country Director) and the TRAFFIC-SEA Vietnam office provided initial drafts of sections of the strategy.

The editing contribution to the strategy from other experts, including Dr. Nguyen Cu, Mr. Hoang Van Thang, Prof. Pham Binh Quyen and Mr. Nguyen Manh Hiep, assisted greatly in finalising the structure and content of this strategy.

Editing and publishing of the project's Technical Reports and of this strategy has been the responsibility of the National Project Office and the WWF Indochina Programme Office's Communication Unit where Ms. Tham Hong Phuong, Ms Nguyen Thi Huong, and Ms Nguyen Kim Chi provided their professional assistance.

Sincere thanks are extended to all of the above people, the more that 150 participants who attended the two-day national workshop, held in Ha Long City in June 2002 and the 35 participants at the open NPAWG meeting in September 2002 who commented on earlier drafts and assisted to finalise input. They all have helped greatly to make this project a success.

INTRODUCTION

PREAMBLE

The initial impetus for the development of this strategy originated in the Forest Protection Department (FPD) within the Ministry of Agriculture and Rural Development. The FPD recognized that there was an outstanding need to develop clear policies and objectives and to establish the principles and scientific concepts for biodiversity conservation activities as the bases for management actions within the extensive system of Special-use Forests (national parks and nature reserves). This emphasis on the existing forested systems was later expanded during the project design stage by Danida to encompass all existing and proposed protected areas including wetlands, marine and coastal areas.

A National Protected Area Working Group of recognized Vietnamese policy and scientific experts was approved by the Government to work closely with the project and provide national input to the process. To provide more localised operational input to the project the four provinces of Ba Ria-Vung Tau, Gia Lai, Thua Thien Hue and Lao Cai were selected to represent Vietnam ecologically and geographically. Each of these provinces assisted the project through multi-sectoral Provincial Working Groups that provided detailed reviews of their protected area management systems and supported the numerous project consultancies centred on their provinces. Also, they have developed models of provincial strategies for protected areas for their individual provinces.

This strategy meets national needs by providing a particular focus on the biological diversity conserved in protected areas and the direct links and benefits protected areas have for economic and social development for the human population of Vietnam and the global community. It emphasises the increasing exposure to the problems the nation faces in its battle to meet the Government and Party desires of matching the twin targets of poverty reduction and the maintenance of the integrity of protected areas and the services they provide.

Importantly, this strategy provides a co-ordination tool for central and provincial implementation of necessary actions, allowing all management authorities to embrace the same objectives, follow similar paths to meet them and to learn from one another. Stemming the tide of encroachment and conserving nature while meeting the needs of local people is a daunting challenge. Vietnam still has a window of opportunity to succeed where other countries are failing if the problems are addressed seriously now. This strategy is one very important tool to assist in that process. This opportunity will not exist in a few years time if action is delayed.

The overall aim of the Strategy is to ensure that landscape values are retained and the biodiversity within an integrated protected area system survives and flourishes, with particular emphasis on the endangered and vulnerable species and ecological communities. Periodic and systematic monitoring of conservation management activities and development in protected areas and buffer zones, with

stakeholder participation in these monitoring activities, is essential to achieve these aims.

The Strategy has been designed for active use by protected area managers, central government administrators, stakeholders, interest groups, NGOs and bilateral and multilateral aid donors. To meet the needs of such a diverse group it has been developed with maximum attention given to the experiences and inputs from the field level, with inputs from upper levels of government and relevant institutions added to that field-level base.

It has been prepared following a comprehensive process of consultation with stakeholders and interest groups nationally over a two-year period. It was developed from the contributions of those stakeholders and drafted by members of the National Protected Area Working Group of the SPAM Project, other Vietnamese experts and the NPO. It has required a co-ordinated, complementary approach by the Central FPD, Provincial and District level FPDs and DARDS working with communes and villagers directly and through giving support for project consultancies. Those consultancies comprehensively reviewed current situations and provided policy guidelines on issues of particular importance to the strategy's development. The results of that policy research are available in a series of Technical Reports produced by the project.

The strategy is, therefore, a product of the stakeholders who have responsibility for its implementation. This strategy will require review and revision over time to adjust for achievements made, new policies introduced and development initiatives commenced. It is anticipated that a mid-term review will occur after four years with a complete review involving a national workshop in mid-2010, to allow time for a finalised revision to meet the requirements for the subsequent 10 years.

THE CONTEXT

Vietnam covers an area of 329,240 km^2 stretching over nearly 15 degrees of latitude ($8^o30'$ N to $22^o22'$ N) and over seven degrees of longitude ($102^o10'$ E to $109^o20'$ E) from China in the north to the Gulf of Thailand in the south. Seventy-five per cent of the area is mountain or hills draining to narrow coastal plains and the major deltas of the Mekong River in the south and the Red River in the north. It has an extensive coastline with hundreds of small islands scattered along the coast and several off-shore island archipelagos to which Vietnam lays claim, such as the Spratley Islands in the south and the Paracel Islands in the north of the East Sea (South China Sea). In addition, in the south, there is one large inshore island (Dao Phu Quoc) and one island (Con Dao) 100 km from the southern coast (The Government of Vietnam, 1994).

Vietnam experiences a tropical monsoon climate with a marked wet season in the south and more temperate weather patterns in the north. Biogeographically it is at the intersection of the Indian, South Chinese and Malayan regions. This has resulted in a region of very high biodiversity, with areas in Vietnam being recognized as critical for global conservation with high levels of endemism.

CHAPTER 1.

CURRENT SITUATION OF PROTECTED AREAS

1.1. Biodiversity of Vietnam

1.1.1. Biodiversity values

Biodiversity, the variety of life including ecosystems, species and genetic resources, plays a very important role for sustaining natural systems and processes and ecological interactions. It is the basis for the supply of a very wide range of products from the land, the streams and the sea and the prosperity of human beings and their natural sustainability on earth. However, humans have been overexploiting these resources at an ever-increasing rate over an ever-increasing area, including in 'protected' areas (PAs), leading to widespread degradation or even complete destruction of those valuable resources.

In contemporary and modern history, biodiversity degradation has been occurring rapidly in industrialised, developing, and least-developed countries. Biodiversity degradation is shown mainly through the following aspects:

- Changed ecosystems leading to species loss;
- Direct species losses;
- Genetic resource losses;
- Import, encroachment, and in some places domination, of alien species.

Losses in species, genetic resource degradation, introduction and encroachment of alien living things and degradation of natural ecosystems, especially in tropical forests are occurring at an unprecedented speed. These losses are caused mainly by human actions and sometimes can be attributed to a lack of awareness.

Globally, a system of 44,197 protected areas has been established with a total area of about 13,279,127 hectares (ha), accounting for about 10% of the world's continental area (World Conservation Monitoring Centre, 2000). Despite these efforts, biodiversity worldwide is degrading seriously with the result that establishment and management policies for protected areas are receiving more and more attention. This necessity is presented in the Convention on Biological Diversity, of which Vietnam is a signatory.

Causes leading to biodiversity loss in Vietnam as well as the rest of the world can be divided into two groups:

- ? Natural ones such as geological changes, storms, floods, climate change, desertification and drought;
- ? Human activities directly impacting on the natural environment such as socio-economic direct and root causes and wars.

Biodiversity, therefore, is under the influence of various natural and social factors, of which the most important one is human impacts. Activities such as logging, firewood collection, overfishing, coral collection, pollution, hunting, land encroachment, road construction, inappropriate tourism, etc., pose direct impacts on natural resources and usually lead to an increase in biodiversity loss. These activities have originated from socio-economic and policy factors. Direct and root causes leading to biodiversity degradation have changed according to time and place and have typical characteristics for each area and region.

a. Biodiversity Values of Forests in Vietnam

The biodiversity values of Vietnam's forests are immense and the SUFs play a vital role as the supporting columns of conservation at the landscape, biosphere and ecoregional scales.

✍ Vegetation:

There are about 12,000 vascular floral species in Vietnam. 7,000 vascular species, 800 moss species and 600 mushroom species have been scientifically described. Over 2,300 floral species are used for food, medicine, timber, oil and construction materials, etc.

The endemicity of the floral system is very h

igh with at least 40% of species. There is no endemic family but three per cent of the genera are endemic and about 10% of the species. There are three focal regions in Hoang Lien Mountain Range, Central Highlands and the Northern Annamite Mountains.

Rare species exist in the SUFs such as *Afzelia xylocarpa, Sindora siamensis, Coptis chinensis, Morinda officinalis, Cupressus terbulosa, Dalbergia bariaensis, Fokienia hodginsii and Glytostrolus pensilis*.

✍ Wildlife:

There are 275 mammal species, 828 bird species, 180 reptile species, 80 amphibian species, 547 freshwater fish species, 2,033 marine fish species and about 12,000 insect species in the forests of Vietnam. Endemicity is high with 78 species and sub-species of mammals, over 100 species and sub-species of birds, seven primate species and 11 bird species endemic to Vietnam. In the last decade four large mammal species new to science were found. These were the sao la (*Pseudoryx nghetinhensis*) in 1992, giant muntjac (*Megamuntiacus vuquangensis*) in 1993, truong son muntjac (*Caninmuntiacus truongsonensis*) in 1996 and the Pu Hoat muntjac (*Muntiacus puhoatensis*) in 1997.

Present in the SUFs are the larger rare species such as elephants, rhinos, gaur, banteng, wild buffalo, tiger, leopard, slow loris, black gibbon, Douc's langur, snub-nosed monkey, golden-headed langur, sarus crane, white-winged duck, some pheasant and other bird species as well as species of lizards, snakes, turtles and amphibians.

b. Wetlands: Biodiversity Conservation, Flood Mitigation and Other Roles

As mentioned above, the proposed WPAs are very diversified with the existence in Vietnam of 15 out of 30 classification types defined in the Ramsar Convention. They account for a significant proportion of the country's area.

The most important deltas in Vietnam are those of the Red River and Mekong River catchments. In addition, there are many smaller river mouths of similar ecological importance. These are favourable places for aquaculture production thanks to resource richness and advantageous natural conditions for waterway transportation.

Estuaries, of which there are many hundreds along the coast of Vietnam, are characterised by varying salinity levels as the freshwater streams and rivers, carrying nutrients and sediments, meet the sea. These special characteristics give the variation that provides the needs of specialized species and migratory species, which use estuaries at different stages of their life cycles. Estuaries are significant sites for mangroves and saltmarshes, seagrasses and algal beds. Estuaries are very important for fisheries and have great potential for ecotourism and recreational activities.

The central part of Vietnam, from Thua Thien Hue Province to Ninh Thuan Province, has many and various types / classes of lagoons and gulfs, including the very large Tam Giang-Cau Hai Lagoon system. The aquatic organisms in the lagoon, including shrimps, crabs and bivalves, have very high biodiversity value. Seaweed species and seagrasses here also provide significant ecological benefits to the system. The lagoon provides foods for fishes and seasonal habitats, including feeding and nesting sites, for various migrating bird species.

Mangroves have been estimated to cover about 170,000 ha along the coastline of Vietnam (Phan Nguyen Hong, 1997). The coastal areas around the estuaries of the Red, Mekong and Dong Nai Rivers provide favourable conditions for mangrove development. Especially, the mangroves in Ca Mau Cape have the highest biodiversity with the biggest sizes of trees and the most diverse communities with more than 32 mangrove species. This area is also considered as having the highest biological capacity. Mangrove diversity generally increases from the north (34 species) to the south (77 species). In 1992, Mai Dinh Yen recorded 120 marine algae species, 258 fish species and 389 benthic animal species, including 173 mollusc species along this section of the coast. The Mekong delta area supports 386 bird species, including 73 migrant species (Vo Quy, 1984) and many valuable waterbirds such as the milky stork (*Mycteria cinerea*), *Pseudibis* sp., Asian openbill (*Anastomus oscitants*), etc.

Mangroves are also present on the central coast. Here they do not have favourable conditions to develop over large areas since it is generally steep and narrow and the tidal zones receive little sediment from rivers and are influenced by floods (Phan Nguyen Hong, 1999). Nevertheless, they have dominated significant areas in lagoons, gulfs and river mouths in different central provinces.

However, due to fast aquaculture development, reforestation and especially the recent highly destructive forest fires in U Minh, the mangrove area has undergone big changes.

Besides the above-mentioned mangrove areas, there is the Dong Thap Muoi area, the representative area of which is Tram Chim National Park. The biodiveristy value here is very high with six major plant communities - lotus, wild paddy, three types of hydrophilous grasses and melaleuca with 130 embryobionta species. Regarding animals, 198 bird species of 49 families are found here, accounting for 25% of the number of species in the whole country, including 16 globally threatened species such as the sarus crane (*Grus antigone*). In addition, the area also has different valuable plankton species, benthic fauna and fishes.

The system of natural and human-made lakes and internal wetlands, comprising thousands of ponds of various sizes from the north to the south, makes a significant contribution to sub-regional climate moderation. The diversity and richness of fishes not only bring economic benefits to people but also is a source of food for animals living in nearby forests. The areas have a wide variety of typical plants. Many lakes, such as Nui Coc Reservoir and Dong Mo Lake, etc., are seasonal resting and feeding areas for migrating birds in winter. Besides, human-made reservoirs function to regulate stream flows, contribute to flood mitigation in the rainy season and supply irrigation water in the dry season.

Wetlands also have important roles in coastline erosion prevention and water quality maintenance through their functions as deposit sites for suspended solids (silt and organic matter) and as filters for nutrients and pollutants (through uptake by plants and deposits in sediments).

c. Marine and coastal biodiversity values

With a coastline extending between latitudes 8^0 30' to 22^0 22' North, Vietnam is acknowledged as having highly biodiverse and globally important coastal and marine areas, ranging from sub-temperate ecosystems in the north to tropical ecosystems in the central to southern regions. However, Vietnam's approximately 1,100 km^2 of coral reefs are generally highly degraded and 98% of the area is rated at medium, high and very high risk of loss levels.

Vietnam's coastal mangroves, seagrass meadows and reef systems are located near the highest value sites for biodiversity in the Indian-West Pacific Oceans and connect with other important marine areas in the East Sea (South China Sea). There are at least 537 plankton species, 657 zooplankton species, 600 algae species, 35 mangrove species, 650 coelenterate species, 2500 mollusc species, 1600 echinoderm species, 700 bristle-worm species, 350 crustacean species, 150 sponge species and more than 2033 fish species. Even though the list of marine

organisms still needs considerable amendments as new species are recognised, these figures demonstrate that Vietnam is one of the richest areas in the world in terms of marine biodiversity. Species diversity conservation in Vietnam contributes an important part to the conservation of marine biodiversity globally. The genetic diversity of marine organisms in Vietnam also is very high because they are spread across many latitudes and occupy a wide diversity of natural conditions.

✍ Reefs

Coral reefs are distributed along the coastline from the north to south. The most important areas are offshore islands in Ha Long Bay, Cat Ba Island, Bach Long Vi Island, Cu Lao Cham, Khanh Hoa coastal area, Ninh Thuan, Binh Thuan and other islands such as Phu Qui, Con Dao, Phu Quoc, Nam Du, and Tho Chu (Nguyen Huy Yet, 1992; Vo Si Tuan, Phan Kim Hoang, 1997). Coral reefs, generated from living, reef-building hard coral species (Scleractinia), are marine habitats with the highest values for marine biodiversity. More than 300 hard coral species are found in Vietnam's marine areas with diversity increasing from the north to the south. 277 species of 72 genera, forming fringing and platform reefs are recorded south of Thua Thien Hue Province with the northern area supporting more than 165 species of 52 genera. According to the diversity classification of reef-building coral components, the southern Vietnam marine area is classified under the category of 'more than 350 species' (Veron, 2000). This number is just a little less than the world's best areas for coral diversity.

✍ Wildlife

Vietnam's rich coral reefs, seagrass meadows and mangrove ecosystems host a vast array of associated biodiversity such as marine mammals, reptiles and birds. In addition to the more than 2033 species of fish that have so far been identified, Vietnam's waters harbour a number of globally significant marine fauna, including five species of marine turtles. All of them are endangered including the green turtle *Chelonia mydas*, loggerhead turtle *Caretta caretta*, olive ridley turtle *Lepidochelys olivacea* and the critically endangered leatherback turtle *Dermochelys coriacea* and hawksbill turtle *Eretmochelys imbricata*. All of these species, except the leatherback turtle, have known nesting beaches in Vietnam. The endangered dugong *Dugong dugon* is another precious asset to Vietnam's marine biodiversity. This slow moving mammal living in and grazing on shallow seagrass meadow habitats, themselves under severe degradation pressure, is thought to be extremely vulnerable to extinction within the next decade.

Vietnam's only marine protected area (Hon Mun MPA), and many proposed areas are important habitats for a large variety of birds, mammals and reptiles. In particular, resident and migratory birds, including several species that are rare and endangered such as the brown booby, Nicobar pigeon (rare on Con Dao and possibly Phu Quoc Island) and black-faced spoonbill are found in very few, small areas in the country. Vietnam's offshore areas are also thought to be important habitats and migration routes for several other mammal species

including cetaceans. Fifteen species of dolphin and porpoise and one species of baleen whale have been recorded.

Spectacular fish such as whale sharks, sharks and manta rays also inhabit Vietnam's seas and are dependent on healthy ecosystems producing plentiful supplies of plankton and prey species. The presence of spoonbills, turtles and dugongs are important biological indicators of the health of the marine environment. Their numbers are declining.

✍ Sea grass

Seagrass meadows are observed in many coastal areas of Vietnam. They grow well in lagoons and gulfs with the diversity increasing from nine species in the north to 13 species in the south. Seagrasses are important for holding organic matter and trapping sediments helping to maintain water clarity. They also provide important habitat for juvenile fish and breeding marine organisms, such as squid and seahorses. The largest seagrass meadow of about 800 ha is found in Thuy Trieu Lagoon, Khanh Hoa Province. Offshore islands such as Con Dao and Phu Quoc also have large areas of seagrass (Nguyen Van Tien, 1997; Nguyen Huu Dai et al., 1997).

✍ Mangroves

The coastal mangrove forests are critical intermediate habitats between the land and the sea. This rich ecosystem supports among many other organisms, snails, shellfish, crustaceans such as shrimps and crabs and many species of fish. It is an especially important nursery habitat for young and juvenile fish. They are, therefore, essential for the maintenance of sustainable associated fisheries resources, species diversity and economic development. Structurally and functionally they have a very important role in maintaining the physical stability of the marine and coastal systems.

✍ Economic value

Marine resources provide nearly half of the protein of the Vietnamese population and are the fourth largest export earner. Marine fisheries, therefore, are a hugely important sector of Vietnam's economy and the effective conservation of the country's marine ecosystems is critical to the long-term viability of the fishing industry.

The arrival of non-resident fishing vessels from China and Hong Kong, increasing resident populations in the vicinity of reefs, illegal and highly destructive (cyanide and dynamite) and non-discriminatory fishing methods (fine mesh nets and electrofishing) and the sheer poverty of local fishers have placed tremendous and unsustainable pressures on the coastal and reef ecosystems. Urgent action is needed along the entire coastline to prevent irreparable degradation of these systems and the subsequent failure of the reef fish, lobster, mollusk, sea cucumber and associated fisheries.

1.1.2. Causes of biodiversity loss

a. Direct Causes Leading to Biodiversity Loss.

✍ Effects of War

Wars are not only direct but also root causes leading to biodiversity loss. In the period from 1945 to 1990, Vietnam experienced two major wars and two serious border conflicts. Between 1961 and 1975, 13 million tons of bombs and 72 million litres of poisonous defoliant chemicals were sprayed on the forests mainly in the south of Vietnam destroying millions of hectares of forests (World Bank, 1995).

The wars led to great changes in population distribution among regions. During the wars, a very large area of the forests was destroyed for production development, local people's livelihoods and provision of food for the army. After the wars, a lot of the remaining weapons have been used illegally to hunt forest birds and animals. This is also another cause leading to the depletion of forest wildlife.

✍ Illegal Exploitation of Coral Reef Resources

The conservation of coral reefs has received very little direct attention until recent activities in Khanh Hoa Province to set up the Hon Mun Marine protected Area and efforts to protect reefs around Con Dao and Phu Quoc Island as part of Special-use Forest conservation efforts.

Coral reefs in Vietnam are in very poor condition generally and are internationally recognized as being critically threatened. They have been severely overfished to the extent that they no longer serve as a source of fish for commercial fishing grounds. They have been devastated in many parts by illegal and destructive fishing methods such as the use of dynamite, poisoning fish and coral systems with cyanide and the use of electro-fishing techniques.

✍ Land Clearing for Agriculture and Aquaculture

Expansion of arable lands by encroaching into forest lands is one of the most important causes leading to biodiversity degradation. In the northern mountainous region of Vietnam, this land is mainly used for annual crops. In the central highlands and the southeastern regions, perennial crops are planted such as coffee, cashew and rubber. In coastal areas, mangroves are cleared and land is drained for aquaculture. This expansion of arable lands and aquaculture areas occurs under government policy guidelines to meet food demands for the growing population and to promote the necessary economic development of the country by increasing highly valuable agricultural produce and seafood exports.

Poor farmers are usually responsible for land encroachment for agricultural activities. They lack land, or have migrated freely from the delta provinces and

from the northern mountainous regions to the southern provinces, especially those arriving in the central highlands.

Mangrove forests in Minh Hai, Kien Giang and other coastal provinces are also targets for cutting and destruction by local people. They clear mangrove forests for shrimp farming. However, their shrimp farming frequently is carried out in an unsustainable manner on unsuitable soils leading to some impoverished farms.

✍ Logging

Illegal logging and unsustainable legal logging pose a great threat to biodiversity. They not only deplete natural timber resources but also dramatically change forest quality.

In the 1986-1991 period, an annual volume of 3.5 million m^3 of timber on average was logged. In the 1992 - 1996 period, it was about 1.5 million m^3 of timber per year. From 1997 to date, it has been about 0.35 million m^3 of timber logged per year from natural forests in Vietnam. Illegal logging occurs everywhere, even in Protection and Special-use Forests. As a result, forests are being depleted rapidly.

The main reasons leading to serious and uncontrollable illegal logging are the demands for timber for domestic uses and for export, the low risk and the financial rewards. These demands are increasing while forest timber reserves are decreasing. The timber industry produces large profits and the forest protection force has not been strong and effective enough to regulate the industry. Settlement of violations of timber exploitation and trafficking has been limited and insufficient to affect forest destruction.

✍ Firewood Needs

Wood collection for fuel also occurs at a large scale and is difficult to control. This is also a great threat to biodiversity. Demand for energy from firewood accounts for 75% of total energy demands of the whole country. It is estimated that about 22-23 million tons of fuel have been harvested annually from natural forests (RWEDP - Overview on Firewood). Before 1995, about 21 million tons of firewood was collected per year to meet living needs for households. This was as much as six times the export timber volume a year. Additionally, firewood is not collected evenly in each forest area and is mainly overexploited in areas near villages, leading to rapid dwindling and degradation of those forest areas.

✍ Use of Non-timber Forest Products (including wildlife)

In Vietnam's forests, there are about 2,300 species of non-timber forest products (NTFPs) such as rattan, palm leaves, bamboo, fungi ('mushrooms') and herbal plants (about 1,000 species) being collected for food, construction materials, handicrafts, herbal medicine and export. Particularly, there are about 70 species of birds, mammals and reptiles being exploited frequently for food or medicinal purposes and for export. These activities pose great threats to the survival of a lot

of species such as dugong, turtles, many species of snakes, gaur, tiger, rhino, snub-nosed monkey, golden-headed langur, black gibbon, Edwards and imperial pheasants, Ngoc Linh ginseng and red shoe-shaped orchid, etc. The effects on many species are unknown.

Wildlife trading, especially in species such as snakes, tortoises, turtles, chameleons, pangolins, etc. for food, medicinal or illegal export purposes is on the increase. Trading activities are spreading to areas in different regions of the country and are difficult to control. Many endangered and vulnerable species have been seen for sale in various markets, even in the larger cities.

✍ Fishing

It is now not rare to see people fishing using destructive methods such as dynamite, poisons (cyanide) and electric-shocking. Over-fishing can be seen clearly in declines in total catch volume, fish sizes and catch-for-effort statistics. In addition, some seafood specialties such as lobster (*Panulirus)*, abalone (*Halioles*), shell fish (*Chalamys*) and squid (*Loligo*) have experienced output decreases. Mother-of-pearl has disappeared in the northern sea in Vietnam. The exploitation of the above-mentioned species has continued, even though five spotted herring species, four lobster species and two abalone species are listed as vulnerable.

✍ Infrastructure Construction

Together with the socio-economic development processes of the country, the construction of infrastructure, including the road network, bridges, harbours, right-of-ways for electricity powerlines, sewage and water supply system, etc. is indispensable. Road and electricity grid construction and other infrastructure development can have key influences on biodiversity. For example, the Ho Chi Minh Highway construction and its impacts on some National Parks such as Cuc Phuong, Phong Nha, etc. and roads going through the Plain of Reeds (Dong Thap Muoi), roads connecting Ha Tien Province with Ca Mau Province and the 500 KV trans-Vietnam electricity powerline, etc., could divide the continuity of a region and degrade the natural environment because of dust, noise and population concentration along the main roads. Reservoirs that form behind dams flood tens of thousands of hectares.

✍ Introduced Faunal and Floral Species

In the past years, exchange and introduction of some breeds, seedlings and animals have brought about increased economic effectiveness to production. With plants, new species and varieties have accounted for up to 70 - 80% of plantings and resulted in high productivity. Nevertheless, introduction of various new breeds and species occurs widely without control and is a potential threat to the integrity of indigenous ones, e.g. some traditional Vietnamese rice breeds have vanished. Direct and obvious damage can be seen with some of the introduced biological species in Vietnam such as freshwater golden snail, marsh mimosa, etc. These have developed to epidemic proportions and brought serious

damage, primarily because of lack of knowledge, limited resources and loose management.

Introduced species such as eucalyptus could have advantages as they are easy to plant, develop rapidly and have a high timber return. However, they give virtually no support for biodiversity and provide very little habitat for native wildlife.

✍ Forest Fires

Forest fire is a serious threat to biodiversity. In Vietnam, there are about six million ha, equivalent to 56% of forest areas, vulnerable to fire (Pham Binh Quyen et al., 1997). Forest-burnt areas nationwide from 1992-2002 were about 6,000 hectares a year on average. Regions that often have forest fires are Cuu Long (Mekong) Delta, southeastern, central highlands and northwestern regions.

Forest fire usually originates from slash-and-burn practices, nomadic living style, cooking, heating in forests and for honey collection. The nation's geography stretches over many different climate belts and regions. Therefore, forest fire threats remain all the year around. Forest fires not only directly damage flora and fauna but also degrade land and water resources, destroy crops and cause property loss.

✍ Pollution of the Environment

Human activities such as industry and urban development, mineral ore extraction, rural and traditional handicraft village development, industrial and domestic wastes, discharge from means of transport and utilization of agricultural chemicals, etc, cause pollution of water, air, land and marine environments and is a direct cause leading to biodiversity degradation.

The environment in many urban areas in Vietnam has been polluted because of poor solid waste disposal, untreated wastewater discharges, discharges from smokestacks and hazardous wastes that are not disposed of in accordance with current legislation. Obsolete and degraded sewage and water supply systems cannot meet the current demands. Industrial entities in the country are mainly of small scale with out-of-date technology. A lot of industrial, processing and high-tech zones have not developed a central technical infrastructure and sewage systems. Most of these untreated wastes find there way into rivers and streams and underground water sources and frequently contaminate land. These rivers and streams carry pollutants and wastes into wetlands and the coastal and marine environments, significantly degrading freshwater fisheries, marine fish nurseries and coral reef ecosystems.

The rural environment is polluted by inappropriate use of agricultural chemicals, poor hygienic conditions and weak infrastructure. Handicraft production with obsolete technology in traditional villages, small-scale units sporadically located in residential areas and lack of waste collection tools and equipment, as well as waste treatment facilities all pose serious environmental pollution hazards.

✍ Shifting Cultivation

Shifting cultivation is an obsolete, though traditional, agricultural production method still used by some ethnic minority groups in mountainous areas to meet their living needs. Among 54 ethnic groups in Vietnam, there are 50 minority groups with a total population of about nine million people with that tradition (Pham Binh Quyen et al., 1997). Shifting cultivators may be nomadic or live in fixed settlements. Subsequently, it causes biodiversity degradation and loss.

b. Root Causes Leading to Biodiversity Loss

✍ Population Growth and Migration

Population challenges in Vietnam are serious in terms of resource availability, environment capacity and health, and biodiversity conservation issues. In the ten years 1989 to 1999, the population growth rate was 1.7% per year on average. The population is still increasing at a high rate while the availability of land, water and other resources remains static. Rapid population growth near protected areas, including in-migration, is one of main causes leading to biodiversity loss in Vietnam. Population growth results in increases in living and other essential demands while resources are limited especially land resources for agricultural production. Consequently, arable land expansion is on the rise affecting forest land encroachment and biodiversity degradation.

Both controlled and free migration policies impact on biodiversity conservation. Since the 1960s, the Government has encouraged about one million people to move from the lowland plains areas and to live in and develop mountainous regions. This mobilization has changed ethnic group structure in the central and northern mountainous regions in particular.

In the period following the unification of the country (1975-1989), all migrations were supported by the State. Among the 2.4 million people who migrated in 1981-1990, 75% were provincial internal migrants and 25% were provincial external migrants. Most external migrants moved from the Red River Delta to the Central Highlands.

Migrants are often the poor who lack production experience. Arriving in new lands, they usually cut down trees for housing, destroy forested areas for residential purposes and cultivate the land. These practices cause forest resource degradation and biodiversity loss in many places, including PAs.

✍ Poverty

Vietnam is considered one of the poorest countries in the world with nearly 80% of the population living in rural areas. The key economic activities are agriculture, forestry and fishing. The economic situation still has many difficulties. According to 2001 figures, poor households make up 17% of the population; most of them are in rural, mountainous, and remote and border areas.

The poor often do not have land or are pushed to live in impoverished, steep and infertile lands. They also lack long-term capital to invest in production and environment protection. They have no other choice but to exploit their land rapidly or destroy forests for arable land. This leads to decreasing living standards: Poverty leads to unsustainable resource utilization and the resource degradation makes life poorer.

There are cause and effect relationships between poverty reduction and environment protection as well as for socio-economic development. Therefore, poverty reduction is one of the development targets and a precondition for environment protection. In the past ten years, significant achievements have been gained in poverty reduction, improving greatly the living standards of a major portion of the population. Over two million poor households have been raised above the poverty line.

In order to implement more effectively hunger elimination and poverty reduction, which will help protect biodiversity, it is necessary to put hunger eradication and poverty alleviation at the forefront of socio-economic development strategies for poor areas of the country.

✍ Economic Policy

Up to 1975 economic policies of our country were adjusted for the prevailing war conditions. Essential requirements for the war were met urgently, including the exploitation of natural resources, including biological resources. After 1975, the country was unified but the economy faced many difficulties. During that period, timber was logged very heavily for construction and export to fund economic development.

Policies in the "Doi Moi" (renovation) period (since 1986) helped on one hand to boost the economy but on the other hand they had negative impacts on biodiversity. For instance, the promotion of agricultural and fishery product exports has encouraged mangrove destruction for fish and shrimp farming and investments in forest clearance in order to have more land for such crops as coffee, rubber and cashews. Parallel with economic development policies in market mechanisms, their effects leading to biodiversity degradation will be inevitable in the coming time at national level if effective and timely measures for ecosystem management and protection are not put in place. It is essential to review and integrate environmental issues into policy planning in order to solve properly the relationship between socio-economic development and environment protection.

✍ Legislation Enforcement

Resource and environment management and protection have received attention since the 1960s. Many legal documents, guidelines and policies have been issued and some action programmes related to biodiversity have been implemented. Nevertheless, the implementation has not been thorough and people's perception of biodiversity protection, particularly ethnic people in mountainous areas has

been poor. On the other hand, in regard to state management, the forest protection force has not been strong enough, welfare and benefit policies for them have been limited, they generally have poor technical equipment, and sanctions and legislation have not been specific. Sometimes these constraints discourage forest rangers and communities from taking part in forest conservation efforts.

1.2. Current status of the Protected Areas System

1.2.1. Protected areas

(1) SPECIAL-USE FORESTS

Forested Areas in Vietnam

According to statistics of MARD (2002), in Vietnam there are 11.314.626 ha of forests covering 34.45% of the country area, of which 9,444,198 ha are natural forest. There will be over 2 million ha of Special-use Forests (SUFs), 6 million ha of catchments Protection Forests and 8 million ha of Production Forests, according to the Forestry Development Strategy for Vietnam 2001 - 2010.

In the past few decades forest resources in Vietnam have degraded seriously from various causes, reducing or destroying important ecosystems. Coverage rate in 1995 was only 28% compared to 1943 when it was 43%. Consequently, the management of Vietnam's forests is an important ecological, economic and social issue.

Trends in forest area in Vietnam

Year	Forest area (*1,000 ha*)			Coverage (%)	Hectares per capita
	Natural	Plantation	Total		
1943	14,300	0	14,300	43.0	0.70
1976	11,077	92	11,169	33.8	0.22
1980	10,186	422	10,608	32.1	0.19
1985	9,308	584	9,872	30.0	0.16
1990	8,430	745	9,175	27.8	0.14
1995	8,252	1,050	9,302	28.2	0.12
2000	9,444	1,491	11,314	34.45	0.14

(Source: Forest Inventory and Planning Institute, 2000)

Special-use Forests in Vietnam

The still-developing system that exists today commenced in 1962 with the creation of Cuc Phuong Prohibited Forest pursuant to the Decision No. 72-TTg of the Prime Minister dated 7July 1962. However, the system has been under increasing pressure since then, primarily as a result of illegal commercial-level exploitation of timber and wildlife, along with a wide range of other non-timber products, and increasing human population pressures. There are nearly 121 SUFs established representing most of the forest ecosystems of the country.

As development proceeds at pace in Vietnam inevitable conflicts have arisen and often remain as problems in the long term. For instance, the development of the north-south Ho Chi Minh Highway cuts through some SUFs and opens up the forests to more threats. Now, as planned by the Ministry of Transportation, the Ho Chi Minh Highway will cut through Bach Ma, Yok Don, Phong Nha and Cuc Phuong National Parks. Other planned large infrastructure projects (dams, land drainage, etc.) may also contradict conservation objectives. The biogeographical and very high biodiversity characteristics of SUFs are attributed primarily to combinations of global location, latitude, elevation and climate differences leading to marked variability from east to west and north to south.

The establishment of SUFs has a relatively short history in Vietnam and can be divided into three socio-political periods. During the first period, 1962-1975 when the country was divided, the forestry sector was founded and 49 prohibited forests were proposed in the Northern provinces. During this period, there was only one prohibited forest established by the Government (Cuc Phuong Prohibited Forest) and other prohibited forests were set up at provincial level. The prohibited forests established created an important foundation to develop the SUF system later.

In the second period, 1976-1986 following reunification, many valuable forests for nature conservation and biodiversity were established in the Central Highlands, the southern central, southeastern and southwestern regions. The then Ministry of Forestry issued *Regulations on Special-use Forest Management* in1986 and the term *Special-use Forest* replaced *Prohibited Forest*. During this period, more than one million ha of SUFs were classified into three categories as National Parks, Nature Reserves and Cultural-Historical-Environmental Sites. They were rich and pristine forests containing endemic and rare floral and faunal species. At that time, there was no international assistance.

From 1986 up to now has been the period of *'Doi Moi'* or renovation. This has been a time of rapid development of the SUF system both in area and quality as well as management capacity. A lot of surveys and research by domestic and international scientists have been carried out in remote areas of the country and much information has been gathered. Biodiversity and environmental conservation have been paid special attention by the State as well as international communities. Vietnam has received a lot of valuable support and assistance from organisations, individuals and scientists when the country is still in difficult times. The SUF system has been established from the north to the south, representing various climate belts and regions, different biogeographical areas, typical and important ecosystems. In this period, legislation on forest protection, nature conservation and biodiversity protection has been issued and amended to improve the situation.

As at Febuary 2003, there were 121 SUFs with the total area of 2,478,295 ha (accounting over 7% of the national area) officially established. Pursuant to the most comprehensive legislation to date (Decision 8/2001/QD-TTg dated 11 January 2001 by the Prime Minister) on regulations mandating the management of special-use, protection and production forests in Vietnam, a proposal for a

national SUF system was developed by the Forest Protection Department by 2/2003 as follows:

I. National Park:	25 areas	883,391ha
II. Nature Conservation Areas:	59	1,388,010 ha
IIa. Nature Reserve:	46	1,262,147 ha
IIb. Species/Habitat Areas:	13	125,863 ha
III. Land/Seascape Areas:	37	206,892 ha

However, this is under review pending the outcomes of recommendations from this strategy.

(2) WETLANDS

Potential and Coverage of the Wetland System for Conservation of Biodiversity Values

Vietnam has an extensive coastline, more than 2500 rivers and streams, and thousands of natural and artificial reservoirs, which create abundant and diversified wetland ecosystems. These ecosystems include ponds, lakes, swamps, irrigated paddy fields, river mouths, and coastal mangrove areas. Wetlands provide valuable forest products, agriculture crops and fisheries, supply water and other services that have environmental importance, e.g. making climate equable, as windbreaks and wave-breaks and recharging underground water reserves. In addition, wetlands are habitats for many valuable wild species. (*Strategy for Sustainable Wetland Management in Vietnam*).

However, Vietnam does not have official definition and classification categories of wetlands. The existing legal documents and mass media mention the "wetland" concept without any definition available. Land Law, the highest legal documents on land management and utilization, clearly defines different land types and their utilization but does not classify wetlands. According to this document, land with a water surface can be understood with the narrow meaning of "land with water area for aquaculture" and is considered as one kind of agricultural land.

Due to the above-mentioned reasons, the meanings and roles of wetlands are not fully recognised and evaluated. As a consequence, insufficient attention is paid to planning for wetland exploitation, utilization and protection. Depending on current utilization, wetland areas can be classified into the following land use types: forest land, agricultural land, bare land and water surface, etc. The shortage of knowledge about the roles and inappropriate utilization of wetlands has led to many bad economic and environmental consequences. From a conservation point of view, even with the acknowledgement of the Xuan Thuy Ramsar protected area, Can Gio Biosphere Reserve, Cham Chim National Park

and Thanh Phu Wetland Protected Area, etc., the number of wetlands in the national protected area system is very limited. Furthermore, they do not represent the different wetland types and the variety of typical environmental and biodiversity values in Vietnam.

The NEA under MONRE acts as the executive agency for the national Biodiversity Action Plan of Vietnam and it cooperated with FIPI (MARD), the Centre for Natural Resources and Environmental Studies (CRES) of VNU, and concerned institutions to develop a strategy for sustainable wetland management in Vietnam. This strategy is being completed and is to be submitted to the Government for comments and approval. Within the framework of strategy preparation, an inventory of wetlands with high biodiversity and environmental values was carried out covering the whole country. In 2001, NEA proposed 68 wetland protected areas (WPAs), representative of various kinds of wetlands in Vietnam. The following three major studies on wetlands in Vietnam were used for the analysis:

- Inventory and proposal for WPAs in Vietnam, implemented by FIPI;
- Study on wetlands in the Mekong Delta, implemented by Birdlife International and the Institute of Ecology and Biological Resources (IEBR); and
- Proposals of scientists from CRES.

As there is no wetland system in Vietnam yet, these WPAs were proposed based on the Ramsar classifications. Among the 68 WPAs are 18 areas already approved by the Government as Special-Use Forests. Several newly proposed WPAs do not have sufficient necessary scientific data. Acknowledging the pressing situation of wetland ecosystems that are negatively influenced by uncontrolled utilization, NEA provided this list to local authorities and concerned sectors as a basis to select or make a decision to protect and preserve valuable areas, which are degrading.

(3) COASTAL AND MARINE AREAS

Current Marine and Coastal Protected Areas

Marine and coastal protection was initiated in 1986 when Cat Ba National Park was established with a marine area of 5400 ha included. Nevertheless, the conservation activities there have concentrated on forest protection. Later, in 1993, Con Dao National Park, including a substantial marine area, was defined for protection. Like Cat Ba National Park, Con Dao National Park was not officially acknowledged as an area for marine protection. However, it has had initial achievements in marine conservation thanks to the combined efforts of the central and provincial governments and international organisations such as WWF, Danida, ADB, etc. These achievements are considered to be a good example of integration between the conservation of marine and forest ecosystems in Vietnam currently. The continuing marine conservation programme comprises sea turtle conservation, seagrass and coral reef monitoring and dugong

conservation. The staffs of the national parks have been trained in forest management, environmental education and marine resources management.

Even though the above-mentioned activities were implemented, the important coastal marine system of Vietnam is largely unmanaged and an MPA system for Vietnam has only just begun in Khanh Hoa Province.

1. Nha Trang Bay

In January 2001, the Government of Vietnam (MOFi), international donors (WB/GEF, Danida) and IUCN agreed to implement a pilot project for the Hon Mun area in Nha Trang Bay, Khanh Hoa Province. The Khanh Hoa Provincial People's Committee has now approved Temporary Regulations for Hon Mun MPA Management. Located 10 km from Nha Trang City in the area of highest coral ecosystem biodiversity in Vietnam (193 coral species and 176 fish species), the marine area of the MPA covers 122 km^2 surrounding Mun, Mot, Noc, Tre, Mieu, Tam, Cau and Vung Islands, which provide another 38 km^2 of land area.

The objective of the project is to enable local island communities to improve their livelihoods and, in partnership with other stakeholders, effectively to protect and manage the marine biodiversity at Hon Mun as a model for MPA management in Vietnam. This is to be achieved through the establishment of a multiple-use area, suitably zoned, which protects nationally and globally important coral reefs, mangroves and seagrass ecosystems.

In order to implement the project, the National Steering Committee, the Provincial Steering Committee and a Project Management Board have been established. An MPA Management Board also will be established. The Vice-Director of Khanh Hoa DoFi will take the chair as the Hon Mun MPA Management Board Director. The MPA Management Board will carry out its tasks and mandates after project termination.

Other on-going activities here are biodiversity assessment, temporary functional zoning, the establishment of monitoring systems for ecosystems, water quality and resources, environment education, awareness improvement and developing solutions for alternative employment for local communities. The project activities are facing difficulties such as lack of a law enforcement institution to prevent harmful impacts (e.g. destructive fishing and uncontrolled anchorage, etc.), poor coordination between concerned institutions at local levels and insufficient awareness by communities or even managers and policies makers about conservation needs and activities. The conflicts between conservation and development (tourism and fisheries exploitation) have still to be resolved.

2. Trao Reef

This is the first locally managed marine reserve in Vietnam. It is located in Xuan Tu Village, Van Hung Commune, Van Ninh District, 60 km from Nha Trang City. The village has a four-kilometre border with Van Phong Bay, one of the largest bays in southern Vietnam. 13 prominent in-shore reefs and an expanse of seagrass are present.

Developed by the villagers with the assistance of the NGO International Marinelife Alliance and in consultation with the Hon Mun marine area management, this reserve brings together the community, local authorities, scientists and other stakeholders in a cooperative management and decision-making arrangement for the long-term viability and use of the resource base. This will include activities to decrease the harvesting of reef fish, modify the technology currently in use for lobster and prawn culture and the development of alternative livelihoods for some villagers.

Decision No. 2479 of the Provincial Peoples' Committee gives permission to the District Peoples' Committee to have the project in the commune for the period 2001-2004.

3. The Potential for a Comprehensive MPA System in Vietnam

MPA development was mentioned in the national marine program in 1990 and highlighted in the BAP of Vietnam (1994), developed with the support of WWF and IUCN. It is also noted in various recommendations following marine biodiversity surveys carried out by the Nha Trang Oceanography Institute and Hai Phong Sub-institute with the financial assistance of the Government and WWF. However, due to many reasons, including the inappropriately low evaluation of MPA importance in marine resource and diversity protection and economic development, the first proposed list of 15 MPAs was not submitted to government until March 2000. It was developed by the NEA with technical assistance from the Hai Phong Oceanography Sub-institute. These MPAs are Dao Tran, Co To, Bach Long Vi, Hon Me, Con Co, Hai Van-Son Tra, Cu Lao Cham, Ly Son, Hon Mun, Hon Cau, Phu Qui, Con Dao, Phu Quoc, and Truong Sa. Some of them are the extension of existing forested protected areas.

The proposed MPAs initially represent marine areas of high coverage and biodiversity values of coral reef ecosystems and seagrass beds. However, these 15 proposed MPAs do not cover all coastal marine areas of high biodiversity value such as estuaries, mangroves and wetlands. (According to the current classification of Vietnam, all coastal wetland ecosystems will be classified as wetland PAs).

After the NEA submitted these 15 MPAs as mentioned above, the Government officially delegated MoFi with the preparation of an implementation plan for them, including developing a proposed legal framework and management system, as well as an estimated investment budget. This document has not achieved full agreement among concerned sectors and is not yet approved by the Government.

1.2.2. Institutional, Organisational and Managerial System

(1) SPECIAL-USE FORESTS

The Forest Protection Department (FPD) within the Ministry of Agriculture and Rural Development (MARD) oversees the SUF system nationwide and is the administrator of eight national parks that have special importance or that overlap

provinces. Where aquatic ecosystems are included in a SUF, MARD collaborates with the Ministry of Fisheries to provide technical advice, investigations and monitoring for management. Provincial People's Committees are responsible for the remaining SUFs in the system. Although legislation requires all SUFs to have management boards, they have been established only in the 25 national parks and 30 of the nature reserves out of the total of 121 SUFs. (In practice, a Management Board is the Director of the SUF and the forest ranger staff.) Where management boards have not been established SUFs are placed under the management of local District Forest Protection Departments. Some nature reserves are still under the responsibilities of Provincial Departments of Agriculture and Rural Development (DARDs) or Provincial Departments of Culture and Information. Generally, the forest protection force performs management and protection tasks in SUFs.

The Ministry of Culture and Information (MOCI) directly manages and develops most of the Cultural-Historical-Environmental Sites. They cooperate with MARD in protecting and developing the associated forested areas.

In cases where SUFs are under 1,000 ha (except some special ones), no management boards are required. They are assigned to organisations, households and individuals (generally called forest owners) for management, protection and development in accordance with legislation.

Policies and Legislation

Despite much work, state policies on nature conservation have not been comprehensive and stable. They even create overlaps in management between line ministries, agencies and localities. Especially, relationships are not well developed between conservation and development, land utilisation and reasonable use of natural resources, task allocation and management decentralization and special-use forest categorization. Buffer zone management regulations and particularly wildlife and forest conservation laws have not been strictly followed. In addition, policies on investment and operational costs for SUFs and welfare and benefit policies for staff working in conservation have not been properly considered with appropriate supporting legislation.

(2) WETLANDS

Institutions, Relationships and Management System

Due to inadequate acknowledgement of wetland importance in catchments, the regulations on the management of these areas are not clearly defined. Catchments with forest cover are under the management of 'Protection Forest' Management Boards. (These catchments are not included in the above-mentioned list of 68 proposed WPAs). River basins, if excluded in the 18 approved PAs under MARD, are directly managed by provinces, district or commune authorities, depending on their economic aims, related to various sectors such as agriculture, aquaculture, transportation, tourism, or construction

material exploitation, etc. Similar to estuaries, valuable areas for aquaculture sometimes are managed and used by farmer households.

As mentioned above, since wetlands are not categorised in the PA system classification of Vietnam, a recognized WPA system does not exist. Hence, there is no legal institution to manage this type of PA. Some proposed WPAs are in existing special-use forests, managed by MARD. Other proposed WPAs are under the management of various sectors, depending on utilization and economic purposes such as agriculture, aquaculture, tourism and energy (occupied by hydroelectric stations). Due to missing a common coordinating agency for wetland-related issues, the collaboration of different sectors for wetland conservation, exploitation and utilization is rather weak. Recently, NEA, as a key national agency for the implementation of the Convention for Biological Diversity Conservation and the Ramsar Convention, has actively promoted studies, awareness improvement and wetland conservation. The NEA is currently responsible for preparation and proposal of documents related to WPA management.

The NEA proposed that wetlands protected within Special-use Forests continue to be managed by MARD or provincial authorities as relevant. Other important WPAs will be managed at a central level. The other small-scale WPAs will be directly managed at the provincial level.

At the State level, water resources are currently managed by two organisations. The first one is NEA, responsible for water quality management, pursuant to the Environment Protection Law. Several monitoring stations for water quality are located in strategic places in the mountains, at river mouths and along the coastline of Vietnam. The second organisation is the Department for Water Resources and Hydraulic Works Management in MARD, responsible for the management of water utilization, pursuant to the Law on Water Resources. In fact, there are many overlaps in management mandates and activities.

Together with promulgating the Law on Water Resources, a National Committee on Water Resources was established, comprising representatives from concerned sectors, including MARD, MONRE, and the General Department of Meteorology and Hydrography and other relevant agencies. The Committee has a mandate to advise the Government on the utilization of water resources.

Policies and Legislation

There is no existing legal document specifically for WPA management. The existing wetlands that are being protected in SUFs are protected pursuant to the regulations for special-use forest protection. However, Vietnam has a legal framework on environment and nature resource protection relevant to wetlands, including:

- Environment Protection Law,
- Water Resource Law,
- Forest Protection and Development Law, and

- State Law on Fishery Resource Protection and related guiding legal documents.

The participation of Vietnam in the Convention on Biological Diversity and the Ramsar Convention, as well as the existing implementation of the national Biodiversity Action Plan, are favourable legal foundations for the protection of biodiversity and wetland ecosystems at central and local levels. Many provinces have promulgated documents, directly defining the protection of high value wetlands in their local areas.

In addition to these positive actions, Programme 661 (5 Million Ha Reforestation Programme) currently assists the significant restoration of destroyed mangrove forests.

(3) COASTAL AND MARINE AREAS

Policy and Legislation

There is no central government legislation or legal regulations related to Vietnam's MPA system and no management and monitoring system because the system has not been officially established. However, as noted above, the Khanh Hoa PPC has issued Temporary Regulations for the Hon Mun MPA (Decision 26/2002/QD-UB).

In the context of depleting fisheries resources, the Government of Vietnam has made efforts to reduce inshore fisheries exploitation through encouraging offshore fishing activities and aquaculture. In fact, these efforts have been ineffective and marine conservation and aquatic resources continue to be depleted. In addition, fishing is considered to be an economic advantage by the Vietnamese government and development and exploitation has been receiving strong support and investment. Spontaneous and uncontrolled development in this field is one of the root causes of negative impacts on marine resources and the environment in many localities. Currently, Vietnam has no restriction on the movements of its fishing vessels and permits them total open access to fisheries resources.

Nevertheless, there are some existing legal documents related to marine resources and environment conservation, including:

- Law on Environment Protection promulgated by the National Assembly on 27 December 1993, which mainly focuses on environmental management such as pollution rather than resource management. However, there are some regulations that can be applied to implement marine ecosystem protection. Marine pollution control also plays an important role in resource protection. Furthermore, the National Environment Action Plan 1995 focused more on regeneration of mangrove and coral reef ecosystems, etc.

- State Law on Fishery Protection and Development, signed by the President in 1989. Besides regulations defining the sizes and season

allowed for fishing and species limitation for fishing, the State Law also mentions the management of fishing limitations or banned areas. This is an element of marine conservation, even though biodiversity conservation has not been highlighted.

There are many legal documents issued to facilitate the implementation of this State Law, including two documents on the enforcement of legal regulations as follows:

- Decree 48-CP, dated 12/08/1996, defining administrative fines for the violation of fishery resource protection regulations; and
- Decree 26-CP dated 26/04/1996, defining the administrative fines for the violation of environment protection regulations.

The national Biodiversity Action Plan (BAP), approved by the Government in 1995, paid great attention to biodiversity conservation on land but it is also the national policy considered the most relevant to the establishment of MPAs. The BAP proposed a working framework for marine nature conservation, including the establishment of MPAs, sustainable fishery development and integrated coastal management.

Furthermore, several existing policies will have positive impacts on future management and conservation, such as the government decentralization process.

Institutions, organisation and administration

Currently, institutional organisation and administration for marine and coastal protected areas are arguable issues. Three ministries currently are involved with MPA management, MONRE, MARD and MoFi. In accordance with the regulations on MPA management, drafted by MoFi to submit to the Government, MoFi will be in charge of direct management over most MPAs. This proposal has not yet achieved the mutual agreement of concerned ministries and sectors. It is inconsistent with the proposals in this strategy for an integrated protected area system. As mentioned above, several out of the 15 proposed MPAs are to be developed based on existing special-use forest PAs, including Cat Ba National Park, currently managed by MARD. In addition, MARD has also decentralised the management of some other PAs to provinces, e.g. Con Dao and Phu Quoc National Parks and Cu Lao Cham Nature Reserve. Also mentioned in this document of MoFi and related to the establishment of MPAs, the Fisheries Protection Department (FiDP) is nominated to be the direct management agency of the MPA system. However, this body actually carries out very few activities in this field, even for the demonstration project for Hon Mun MPA.

1.2.3. Investment

(1) SPECIAL-USE FORESTS

Investments in National Parks and Nature Reserves

Funds for operations in SUFs come from the three sources of state budget, revenue from tourism and excursion services and internationally financed projects. SUFs under MARD (eight of the national parks) have funds approved by MARD annually according to work plans. This funding is quite stable and increasing steadily, mainly for administrative costs (VND 9-14 million per staff per year, not per forest areas that need protecting), for infrastructure and from other national programmes (661 and 135 programmes) and approved scientific research.

There are still some limitations such as poor funding levels and scattered investment, without a focus on key SUFs or priority activities. Most SUFs only receive provincial funds for recurrent costs. Only a few SUFs funded from the Central Government or with assistance from international organisations have favorable conditions to commence such activities as infrastructure construction, conservation management and protection, buffer zone development and scientific studies.

Projects funded by international organisations provide significant support for PA operations. However, there is no suitable and powerful appraisal committee to control and receive external assistance for important SUFs. That results in delays in project implementation.

(2) WETLANDS

As with all nature conservation activities in Vietnam, financial resources for adequate protection for the sustainability of important wetland ecosystems is urgently required but in short supply. Priority issues for financing currently are as follows:

- Technical advice;
- Review and re-evaluation of the biodiversity values of the 68 proposed WPAs. Development of the list of prioritised MPAs for investment and protection;
- Biodiversity and socio-economic studies to serve management planning and sustainable utilization;
- Improve management capacity and facilities;
- Environment and resource monitoring equipment;
- Creation of alternative employment for communities in and nearby WPAs; and
- Communication and community education.

(3) COASTAL AND MARINE AREAS

The establishment and efficient management of MPAs require the following:

- Functional zoning and demarcation at sea (marking buoy system, etc.);
- Biodiversity research and socio-economic studies for functional zoning and management plan development;
- Patrol boats;
- Guard posts;
- Facilities and equipment for environment and resource monitoring;
- Communication system;
- A centre for communication and community education;
- Training for managers and technical officers; and
- Solutions to create alternative employment for communities living in and around MPAs.

1.2.4. Requirements for Changes

(1) SPECIAL-USE FORESTS

Policies for developing and managing SUFs are inconsistent across the country. Policies that maintain a consistent focus on populations inside and adjacent to SUFs, on management oriented research and on ecologically sustainable ecotourism are in urgent need of development.

A staff training policy is needed. Training professional staff working in conservation has taken some initial steps but is far from meeting requirements and fulfilling the needs of changing situations. Expertise level and skills of staff, even managers working in nature conservation at grassroots level, are weak.

MARD is currently managing 8 out of 25 national parks. PPCs manage the rest plus most nature reserves. Management level and task assignments in SUFs are unclear resulting in loose management, overlap and inefficiency.

Regarding Cultural-Historical-Environmental Sites, there are two management systems existing: (i) cultural and tourism sectors manage historical relics and landscapes/seascapes; (ii) forest rangers manage and protect forests. Cooperation between these two systems has not been close despite the forested nature of most historical and relic sites.

A suitable organisation to assist the MARD Minister to manage the SUF system well is not now in place. Functional departments operate separately with little cooperation. In MARD, the understaffed FPD is assigned to provide technical expertise for management of the SUF system.

At the local level, the management of operations in SUFs has not been timely and lacks consistency. It is necessary to stress that if the SUF Management

Boards alone - the direct management level - receive attention but not the development of participatory management roles and tasks of authorities at other levels (especially communal level), forest protection will not be successful.

The area of SUFs in Vietnam accounts for about 6.7% of the total national area. It is low compared with IUCN's 10% recommended international standard. Meanwhile, many SUFs are too small to be viable and representative areas for some ecotypes are still missing, especially those representing lowland tropical forests, coastal and marine areas, wetlands and areas of importance to migratory birds, marine mammals and turtles.

Comprehensive management plans with the role of directing management activities exist for only a few PAs. Feasibility studies for all NPs and some key NRs are in fact investment plans and do not provide management guidance.

Boundaries of most SUFs are not clearly indicated on maps or on the ground and basic surveys of resources in SUFs are often lacking in sufficiency and reliability. Facilities and equipment are poor. Labour management mechanisms are loose and there have not been enough incentive measures for people working in remote, difficult and mountainous areas. This has led to decreased effectiveness and efficiency in work performance at these levels. The following are proposed priorities for SUFs:

- Development of a suitable and consistent management mechanism for the SUF system starting from decision-making, investment project approval, fund allocation, direction on technical expertise, monitoring and supervision. That could bring consistent, effective and timely governance.

- Frequent review of SUFs so that viable, quality areas only are conserved in the system, with rationalization of boundaries and deletion of and supplementation for the sytem as determined by comprehensive criteria and categories. Especially important are those areas representing missing ecotypes. The development of corridors connecting key PAs, as well as further collaboration with neighbouring countries in trans-frontier conservation, is needed.

- Development of buffer zone policies that ensure a balance between conservation, economic development, stablisation and improvement of people's lives are very important. It is crucial that local economic development plans consider the conservation requirements of SUFs in conjunction with support for improving income sources for local people to stabilise and establish their lives. Strengthening the collaboration and cooperation between SUF management boards and local authorities is essential.

- Establishment of policies centreing on development management so that development and facilities for villages and communes only occurs outside the boundaries of SUFs to encourage passive resettlement out of the interiors of SUFs. Commune development on SUF boundaries is cheaper for the State

initially and in the long term and has far less negative conservation impact than further development of communes inside SUFs.

- Improve management in SUFs through management plan development, increasing training, retraining and capacity building for current staff working in SUFs and more incentive policies for staff and managers working in SUFs to compensate for the disadvantages of living in remote, poorly serviced, mountainous areas.
- More baseline surveys to identify current resources including biodiversity existing in SUFs, as well as social studies, should be carried out. They are the basis to develop conservation strategies and correct development directions for SUFs and at the same time they are necessary for biodiversity and natural resource monitoring.

(2) WETLANDS

Priorities:

- Develop a specific national programme for smart management and utilization of wetlands and promulgate related legal documents.
- Establish a WPA system as part of a national system of protected areas and develop regulations for their management and utilization.
- Clarify management mechanisms and clear policies and regulations for each type of wetland to facilitate efficient inter-sectoral management and collaboration.
- Improve the capacity of government institutions and supervisory departments at central level for policy development and macroscopic management.
- Improve the role of local level authorities in inter-sectoral management and coordination in each WPA under the framework of the regulations for this land type.
- Identify the mechanism of local community participation in wetland conservation and utilization.

(3) COASTAL AND MARINE AREAS

A number of priority activities are needed to improve the implementation of a viable MPA system. These are:

- The development of a legal system for marine protected areas. Currently there is no legislation addressing all essential management issues;
- Development of a national strategy specifically for the MPA system;
- Investment to establish a completed MPAs system based on the experiences at Hon Mun, including marine area extension and improved management of existing PAs;

- ✍ Improvement of the institutional capacity for supervisory organisations at central level and abilities in policy development and macroscopic management;
- ✍ Improvement of the role of local level government for management and coordination of inter-sectoral operations in individual MPAs;
- ✍ Identification of a mechanism for the involvement of local communities in MPA operations.

1.2.5 Buffer Zones / Management Zonation

(1) SPECIAL-USE FORESTS

Buffer zones of SUFs have been given extra attention in recent years as the recognition increases that the activities outside reserves affect nature conservation objectives inside SUFs. A clearer understanding of the role of SUFs in the socio-economic development of provinces and the nation is developing.

The first legal definition of a buffer zone was given in 1993 when the Ministry of Forestry issued Document 1586LN/KL. This subsequently has been updated in Decision 8/2001/QD-TTg of 11 January 2001 by the Prime Minister, which states:

"*A buffer zone is a forest, land or wetland area that has residents, near and adjacent to national parks or nature reserves preventing or reducing violations in special-use forests. All activities in buffer zones are aimed at supporting conservation, management and protection of special-use forests; limiting migration from outside into buffer zones; hunting animals and destroying designated wildlife species under protection are strictly prohibited. The buffer zone area is not included in the total area of a special-use forest. Investment and development projects in buffer zones are approved together with the ones in special-use forests*".

(2) WETLANDS

No recognised buffer zone system exists in Vietnam specific to wetlands. The principles applying to Special-use Forests should apply here also.

(3) COASTAL AND MARINE AREAS

Zonation and area management capacity

Marine areas and marine resources management are a major concern of many sectors, including security and defence. On the other hand, delimitation at sea is difficult and costly to carry out. Thus, even though this matter has been discussed in several national workshops on marine resources management, no final conclusion has been reached on this issue. Wider use of GPS technology now permits clear definition, makes locations easy to determine and should assist the resolution of this problem.

Nevertheless, the Hon Mun MPA has a preliminary zoning system and a zoning demonstration for Con Dao National Park recently was implemented in the framework of ADB Project 5712 REG. Functional marine zoning in the National Park's area was carried out and approved by Ba Ria-Vung Tau Province. Currently, the staffs of the National Parks are demarcating the boundary at sea step-by-step with the available financial assistance from the provincial annual budget. In addition, the Regulations on MPA management drafted by MoFi and submitted to the Government also propose required functional zoning for MPAs. During many interviews and workshops, marine functional zoning has been mentioned by local authorities and people as an efficient solution for the existing conflicts and an effective tool for environment protection.

There are several agencies directly concerned with marine resources and environmental management. FiPD has a vertical structure from central to local levels with sub-departments in provinces and a network of fishery protection stations. This is the main force to protect the fishery resource and has already achieved good results in this field. However, this force in many provinces is still insufficient in terms of personnel, vessels and working facilities to manage large marine areas. The current activities focus directly on protection of fisheries but not ecosystem or marine environment conservation.

An environment protection system under the National Environment Agency exists from central to provincial levels. At the moment, there is a policy to establish environment management units at district level. These bodies (including environmental management and inspection) have insufficient forces but are responsible for managing all environment-related issues on land and on sea. In some provinces, this is the key stakeholder required to coordinate with other concerned sectors to deal successfully with complicated marine environment issues. This agency is not strong enough in terms of personnel and capacities to deal with all environmental issues in the local areas.

Border army bases along the coastline currently make important contributions to marine resource and environment protection. Their presence and power, properly equipped, in remote areas would help to prevent destructive fishing methods, including explosive and cyanide fishing, if collaboration is encouraged. Border guard-posts are also in charge of the management of boats coming from other provinces. Several models of coordination between border army personnel and local communities have been carried out successfully, such as forest protection and regeneration and marine protection in Cu Lao Cham.

1.2.6. Awareness and community participation

a. Community awareness and participation assessment

Since the 1960s a lot of legal documents, directives and policies related to the protection of forests have been issued. However, due to a focus on socio-economic development and poverty control priorities Vietnam has not paid sufficient attention to the relationship between development and the conservation of biological resources. Particularly, in the past there was no appropriate

recognition of the importance of wetlands or the conservation of coral reefs, coastal areas and mangrove forests.

The Government has paid additional attention, since 1980 specifically, to resource utilization and development and environment protection. Many more specific legal documents related to protected areas have been issued. At the same time, large projects and programmes have commenced and helped to promote economic, cultural and social development of communities and create the basis for awareness-raising about PAs and biodiversity. However, in many communities in different regions of the country, especially in the mountainous and more remote ones, many people are not aware of protected areas or of the need for them. As well, their difficult lives require them to concentrate on harvesting biological resources to meet their daily needs, their obvious first priority.

Changes that may be brought about by increased awareness and understanding can help to improve life quality. This can be attained through improving awareness of PA importance and values in relation to the sustainable socio-economic development course of the country.

Though biodiversity conservation and the level of PA knowledge has made significant advancements over recent years, there are still serious limitations, especially in education, including:

- Education on biodiversity and PAs organized by relevant bodies has not been consistent and continuous and it has lacked central direction and collaboration between functional agencies, leading to low effectiveness.
- The quality of education materials on biodiversity conservation has not been high.
- Education methods and formats have not been designed so that local people can relate to them or suitable for different target groups (age, gender, social groupings, etc.).

At present, awareness-raising in communities about biodiversity conservation issues and the role of protected areas is still an urgent issue. Changes in awareness about the inconsistency of age-old resource use traditions with existing resource availability, basic changes in awareness of the roles, functions and tasks of protected areas and the economic and ecological values of natural systems are needed. Increased awareness can lead to positive changes in activities to protect the complex ecosystems and species of natural areas.

A suitable mechanism is needed to consult communities and create conditions for them to participate actively in conservation. They are important targets since they contribute directly to biodiversity losses and also are the ones capable of conserving biodiversity in their locality. However, these populations belong to different ethnic groups and geographical regions with various knowledge levels and traditions. It is essential to have education programmes and their contents suitable for each target group. It is also necessary to socialize the activity of biodiversity awareness-raising by mobilizing all individuals, organisations, state agencies and mass organizations with assistance from international bodies.

Many projects in conservation have not gained the desired results and the resources in PAs are still under threat. One of the causes for the lack of success of those projects is the lack of proper benefits and a lack of management participation and integration of local communities. Projects should be designed on the principle of integrating local people as active counterparts, recognizing and appreciating their roles and attracting their participation in conservation work. PA management boards should collaborate with local authorities and mass organizations to discuss and reach agreements about requirements and conservation methods. They need also to implement effective measures to support the improvement of the material life of communities living in and around PAs.

b. Conflict settlement

Conflicts between the aspirations of individuals and local communities for development and the requirement to conserve biodiversity for the many benefits that accrue to communities at the broader regional, national and international levels take many forms and are perceived in different ways. For example, conflicts may occur between conservation activities and community utilisation of resources, between social and spiritual identities and economic development of the locality or between local cultures and nature conservation.

The settlement of conflicts between biodiversity protection in PAs, the need to meet the basic living requirements of many of the local communities and ensure socio-economic development is a very difficult and complex issue. In order to minimize and resolve these inevitable conflicts it is necessary to increase the sensitivity to the issues by PA managers and to increase communities' roles in PA management and decision-making. Outside of PAs, the development of methods for sustainable utilization of natural resources is needed, i.e., the provision of viable alternatives.

It requires, for example, sharing of benefits, continued promotion of agroforestry, land allocation in a progressive manner for stable and long-term management and development of community-based forestry and aquaculture models. This needs to be coupled to the development of financial incentive policies for community investment in establishing forestry and agricultural farms and aquaculture/mariculture enterprises.

1.3. International conventions

Vietnam is a nation that ranks in the list of underdeveloped countries in the world, aggravated by heavy deterioration caused by wars over a long period. Nevertheless, given its topographic and climatic characteristics, Vietnam is blessed with diverse natural resources, and considered to be one of the nations with the highest biodiversity in the world. However, due to many reasons, our natural resources are diminishing and biodiversity is decreasing, uncontrollably in some places and in some periods. Given increased illegal exploitation of natural resources for domestic consumption and export, it is obvious that internal efforts by themselves cannot be enough to halt the serious decrease of natural resources as presently seen.

Accordingly, the participation of Vietnam in international conventions is indispensably necessary, representing our duties towards international nature conservation concerns and enabling us to take advantage of international support through experience, knowledge, information, equipment, facilities and finance for implementing relevant programs and action plans developed with us for Vietnam.

1.3.1. Vietnam's Participation in International Conventions

Vietnam participates in four of the five global conventions related to biodiversity and the management of protected areas and wildlife species. These four are the Convention on Biological Diversity (CBD), the Convention on Wetlands (the Ramsar Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the World Heritage Convention (WHC). Vietnam is not a signatory to the closely-related Convention on the Conservation of Migratory Species of Wild Animals (CMS). We should consider signing and ratifying this convention.

The overall objectives for Vietnam in international cooperation activities for nature conservation, particularly in regard to managing and maintaining the integrity and roles of protected areas are:

- To improve the status of participation in those conventions which Vietnam has signed and ensure Vietnam's full implementation of the agreements;
- To sign and actively participate in other conventions, where adequate resources can be secured, that are relevant to Vietnam's protection of its natural heritage in all protected areas and elsewhere throughout the nation; and
- To seek other opportunities for contributing to global conservation objectives, for example, through representation in international fora, trans-frontier and other bilateral agreements whenever relevant.

1.3.2. Additional international participation by Vietnam

In addition to the 4 signed and ratified international conventions, as soon as the requirements can be met, Vietnam needs to put in consideration for signing and eventual ratification of the Convention for the Conservation of Migratory Species of Wild Animals should occur.

Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention)

The CMS was concluded on 1 November 1983 with the initial signing by 15 countries. A total of 65 nations have become members of the Convention. In Vietnam, the Forest Protection Department appears to be best suited with the role of a leading agency to implement the Convention. Vietnam has carried out many international obligations with respect to the following migratory animals in particular, all of which utilize existing or proposed protected areas:

- Birds, including waterbirds (shore-birds, cranes, wading birds) and perching birds;
- Marine turtles, including the leatherback, green, hawksbill, olive ridley and loggerhead; and
- Marine mammals, including dolphins, whales and the dugong.

In 1999, Vietnam attended as an observer in the 6th Conference of Parties held in Cape Town, South Africa. The Conference approved the strategy of the Convention planned for 2000-2005 with the following objectives:

- Give priority to activities for the conservation of migratory animal species.
- Target conservation of major animal groups presented in the Appendixes of the Convention.
- Improve implementation of the Convention
- Supplement members of the Convention
- Boost awareness of matters related to the CMS and the global importance of biodiversity conservation.
- Strengthen cooperation and contact between organizations and member countries.
- Strictly implement Appendixes I and II of the Convention covering 220 species.

CHAPTER 2.

STRATEGIC MANAGEMENT TO 2010

Principles

The Management Strategy for A Protected Area System in Vietnam 2002 - 2010 is a dynamic document, designed for today and expected to meet the requirements of Vietnam for the next eight years. *The following principles are the basis for the Strategy's objectives and actions and serve as a public statement of intent that provide direction in the implementation of the Strategy.*

1. Management in protected areas and buffer zones requires a high level of inter-sectoral co-ordination and planning and cooperation with interest groups. Cross-sectoral linkages must work at the national, provincial, and district levels.
2. Biodiversity is conserved best in its natural environment and requires a management approach that includes considerations of the genetic, species and ecosystems levels of conservation and the identification and preventive management of processes which could cause the loss of these values.
3. Management planning and implementation for the conservation of protected areas must recognize the economic aspirations of people in neighbouring communities.
4. Where there is a threat of significant or irreversible ecological damage to an area in a protected area or the risk of extinction of indigenous species, management planning should be undertaken immediately followed by action as soon as the minimum necessary resources can be located.
5. Management must adapt to changes in knowledge and experience available, aiming at continual improvement, achieved by responding to feedback from research and information gathering, development of management policies and monitoring of the outcomes of management decisions.
6. The full economic and scientific value of Vietnam's protected areas needs to be recognized by governments and the community. These values include ecosystem services (such as nutrient recycling, soil protection, rainfall retention and the cycling of water), options for future use, and the value of biodiversity to future generations.
7. The traditional close associations and special relationships of ethnic minority groups with the land and its biodiversity must be recognized fully by government and the management agencies.

8. The Government must support protected area management through sufficient and increasing allocations from the State budget.

Strategic goal

To protect, within an ecologically sustainable development framework, the rich and unique biodiversity and landscape resources of Vietnam and their roles in socio-economic development, which are located within the protected area system.

Core objectives

1. To propose a complete protected area system of terrestrial, wetland, coastal and marine areas.
2. To reform protected area policy and management institutions and strengthen administrative and management capacity for relevant agencies at central and local levels.
3. To develop the roles of local people and communal authorities in conservation of protected areas.
4. To improve general awareness of biodiversity importance and values for Vietnam at the international, national, provincial and local levels.
5. To identify sources of funding and their accessibility.

2.1. Administration, management and financial reforms

Background

Protected area organization and management mechanisms have a close relationship with legislation on natural resources and environment protection. The legal system has been developed in different periods by many state agencies and management levels and under the long-term effect of centralized, bureaucratic and subsidized management mechanisms. As a result, the current PA administration systems and mechanisms are under different line Ministries and management levels. That has produced separate state management functions for PAs in various agencies. The state management system at lower levels has many weaknesses. The present management mechanism for PA categories/classifications is not consistent, has many contradictions and does not create favorable conditions for achieving PA management objectives.

The Socio-economic Development Strategy 2001-2010 has paid much attention to environment protection, including natural resource issues. It is essential to reform the current PA organization structure and management mechanism in order to manage natural resources and strengthen PA management effectively to

meet sustainable development requirements of the country in its industrialization course.

Current reforms include various activities related closely with national macro-economic renovation programs, especially with programs such as (1) Developing the legal system in general and legislation on environment protection in particular; (2) Public Administration Reform Programme 2001-2010; (3) Implementation of environment protection and biodiversity action plans and the Forestry Development Strategy 2001-2010.

As a result, a lot of PA organization and management mechanism reforms cannot be done in isolation. They have to be suitable with reforms of the state macro-management and organization. A strategy for PA organization and management reforms needs to clarify top priority actions to rapidly change out-of-date management mechanisms and ineffective organizations. Top priorities should be paid to organization and management reforms for established SUFs to overcome present overlaps, obstacles and irrational issues that have reduced the effectiveness of operations carried out by SUF Management Boards. At the same time, further studies should be promoted to renovate PA management and organization comprehensively and in a timely manner to catch up with the process in public administration reforms 2001-2010.

Objective 1.

To strengthen state management functions, decentralizing management, assigning specific tasks and improving cooperation and coordination among Ministries, agencies and mass organizations.

Primary Responsibility: NNCA.
Supporting Organisations: MOIA and General Department of Tourism (GDT) MOIA, REFAS Project and UNDP's PAR Project in MARD
Timeframe: 2004.
Funding source: State budget, NGOs and GAAs.

Box 1. Policy to improve the basic PA management and organization system.

During the public administration reform process, more attention from the Government is needed in developing a plan for organizing an appropriate and consistent State management agency for nature conservation at central level. The current practice is to establish multi-sectoral Ministries. A study on organizing a body under the Government (Ministry level) for overall management of nature conservation, including PAs, should be considered. Though a ministerial body may follow many models, it must be a dedicated agency and support one Ministry to manage all areas of nature conservation (including wildlife and PAs) in an integrated way.

Action 1. Define clearly State management duties of each Ministry for natural resources and PA categories/sub-categories in different ecosystems and for ecotourism. A proposal for developing a dedicated Authority for nature conservation and critical catchment protection and management should be considered.

Action 2. Strengthen capacity and reform the organization of the FPD to facilitate them to perform their tasks well as an advisory body supporting the Minister in SUF management. Capacity building for the CITES Office in the FPD is also needed so that it can fully perform its required tasks for wildlife conservation.

Action 3. Organize and develop working teams with proper capacity and facilities to support relevant Ministries in implementing and monitoring compliance with international conventions on biodiversity.

Action 4. Decree 15/CP dated 2/3/1993 of the Government on tasks, mandates and State management of Ministries and ministerial level agencies should be supplemented with regulations on clear responsibilities of Ministries for natural resource management. At the same time, amendment and addition of management tasks for each resource and PAs regulated by relevant legal documents for each Ministry should be considered (e.g. Decree 50/CP dated 21/6/1994 for MOFi, Decree 22/CP dated 22/5/1993 for MONRE, Decree 81/CP dated 8/11/1993 for MOCI).

Action 5. Build capacity for PCs at all levels, especially for district and communal levels to facilitate their performance of State management duties in SUFs in their localities, as stipulated in Decision 245/CP dated 21/12/1998 of the Prime Minister on management responsibilities of all levels for forests and forest lands.

Action 6. Improve cooperation between agencies, levels and mass organizations, from the beginning of legislation development for natural resource protection, planning, establishment and organization of PAs for better inter-sectoral relations.

Action 7. Clearly define (with supporting legislation) state management responsibilities of Ministries and PCs at all levels for the resources in PAs, including actions that specify PPCs must seek and consider line Ministries' comments for larger investments before making decisions.

Action 8. Develop regulations for ecotourism management decentralization in PAs in order to attract appropriate, ecologically-based participation of economic sectors and local communities in awareness improvement and conservation responsibilities

Objective 2.

To reform procedures to establish, invest in, develop and consolidate existing and proposed PA Management Boards.

Primary Responsibility: NNCA
Supporting Organisations: MPI, MOF, General Land Administration Department, NNCA, MPI, MOF
Timeframe: Commence from 2003
Funding source: State budget.

Action 1. Review, approve, and make plans for an overall stable PA system and create a clear legal basis for the membership of Management Boards in PAs, the establishment of operational programmes and for identifying and planning investments.

Action 2. Allocate sufficient necessary resources for meeting the requirements of approved operational plans for managing all established PAs by 2010.

Action 3. Submit plans for MPAs, wetlands, and natural heritage conservation to the Government for approval and provide facilitation to develop and establish the management and organization of them.

Action 4. Review and issue new legislation and re-define procedures and processes for the establishment of a PA in order to reduce overlaps.

Action 5. Prepare and issue legislation inter-sectorally on organization structure and management of the different PA categories/sub-categories, stipulating specific tasks of PA Management Boards in such aspects as biodiversity conservation, scientific studies, infrastructure, ecotourism development, etc.

Action 6. Define the specific role of PA Management Board representatives for socio-economic development in localities in buffer zones.

Action 7. Study models of organization and management mechanisms for PAs located in several provinces and/or districts in order to strengthen cooperation between different localities protecting PAs with similar ecosystems.

Action 8. Direct the improvement in organization of PA Management Boards to help them become a State local unit with active rights in performing assigned tasks in accordance with their identified legal positions. They are responsible for defining, establishing and directing the implementation of annual plans to achieve management objectives for each PA.

Action 9. Supplement essential management equipment for PAs, especially for communications, transport and investigations, to create favorable conditions for staff accessing their assignment areas and working with local inhabitants.

Objective 3.

To reform the protected area management mechanism, particularly investment and financial management in PAs, to bring about favourable conditions to increase PA management boards' activities and management input.

Primary Responsibility: NNCA.
Supporting Organisations: PPCs. PPCs, PA Managers, IEBR, CRES, Universities, Marine Institutes, FIPI, NGOs.
Timeframe: 2003-2010.
Funding source: State budget. GAAs and multilateral development assistance agencies.

Action 1. Issue legal documents clearly defining contents of periodical plans (annual, 5 and 10 year) on integrated natural resource management in PAs

Action 2. Update data and mapping of the PA system nationwide, developing a GIS database on national and local PA systems, preparing targets and plans to review PAs and improving information system connections among PAs to manage the whole PA system in an integrated way

Action 3. Maintain an updated listing of available funding opportunities including international sources (for both large and small grants) and notify PA management boards whenever proposals for funding are due

Action 4. Reform the mechanism for financial distributions from the state budget

Sub-action 4a. Examine the possible development of a Fund for Natural Resource Protection and Protected Area Development in order to allocate funds and provide consistent support for this task. Specific regulations on central financial supplements to support insufficient funding from provincial budgets for PA management should be in place since some PAs are being transferred to central management due to the lack of funds in the provinces.

Sub-action 4b. Develop regular expenditure norms in order to manage PAs based on area units (VND per 1,000 ha) that will be a basis for allocating regular budgets to PAs. (The policy on

regular budget allocations for PAs based on current staff numbers should be removed).

Sub-action 4c. Review and develop regulations on strengthening financial resources and fund mobilization from the public to invest in PAs (such as fees, taxes, lotteries, etc.); develop mechanisms to attract international funds for PAs (such as foreign investment incentives, new partnership regulations for more effective ODA performance, attract private donors and international organizations); prepare financial contribution mechanisms from individuals and organizations using PAs for business purposes in order to improve investment resources for PAs.

Objective 4.

To strengthen legislation enforcement in protected areas through policy and operational reforms.

Primary Responsibility: Ministry of Justice.
Supporting Organisations: Central and provincial People's Supreme organ of control and provincial PA management line departments, NNCA. General Department of Customs, Ministry of Police, People's Supreme Inspectorate, Provincial PA management line departments, NGOs.
Timeframe: 2003 to 2010.
Funding source: State and provincial budgets, GAAs, NGOs.

Action 1. Coordinate and collaborate with regulation and enforcement agencies to disseminate information about natural resources and biodiversity protection.

Action 2. Review and propose additional support legislation and regulations to enforce comprehensively the existing legislation for natural resources and environment protection; simplify and improve the effectiveness of regulations issued and proposed.

Action 3. Strengthen capacity for organizations implementing legislation and collaborate closely with wildlife, forest and marine resource protection forces so that laws on natural resource, forest protection and development, marine and environment protection are fully followed.

Action 4. Review and revise punishment levels applying for violations in natural resource protection to avoid gaps and irregularities as regulated in laws for different resource groups (e.g. forest, water, fishery, and environment). Consider a range of compulsory community service duties/periods as an alternative to fines for poor people.

Action 5. Strengthen and improve the effectiveness and efficiency of wildlife, forest and marine resource protection forces and customs officers, including increasing collaboration with other law enforcement agencies such as police, customs, courts, etc.

Action 6. Initiate studies on the reform of salaries and injury compensation mechanisms for staff implementing legislation for natural resource protection, particularly for those working in difficult regions and situations.

Action 7. Strengthen legislation, regulation and enforcement for protected area management, wildlife protection and biodiversity conservation.

Current Vietnam legislation covers many aspects of forest protection, protected area management and biodiversity conservation. However, partially due to low consistency in legal documents and partially due to lax enforcement, biodiversity in Vietnam is still degrading. In order to increase the effectiveness of legislation, the following activities need to be done:

- Improve biodiversity awareness and knowledge of legislation.
- Strengthening the implementation of existing laws on nature conservation and resource protection that includes review and integration of all existing requirements.
- Develop a protected area management institution, protected area establishment principles, investment mechanisms, research, and biodiversity conservation for nationwide consistency.
- Develop clear and consistent direction of activities for protected area managers from central to local levels.

2.2. Biodiversity conservation and management measures

Background

Although a lot of effort has been made in the development of a national PA system in Vietnam, protected area management still faces many issues such as comprehensive categorization and corresponding criteria, lack of scientific studies, limited biodiversity conservation knowledge and skills and insufficient cooperation in management. A lot of problems are persistent and they need practical solutions to strengthen our capacity for biodiversity conservation through the critical component of protected area management.

Basic information about biodiversity in national parks and nature reserves is available. However, information quality generally is low with low reliability and it does not reflect the actual situations accurately. Lists of faunal and floral species have not been comprehensive or consistent in terms of defining and applying scientific names. Reptiles (including marine turtles), amphibians, fishes

and coral reefs have not been studied intensively and there is also a marked lack of data about both terrestrial and marine invertebrates. Information about rare species often has not been accurate or complete. Specific data on communities of rare and endemic species is lacking. Even data on large mammals is limited. Studies on forestry ecosystems and vegetation mapping have not been done.

Biodiversity management, including the management of species and ecosystems and protecting the integrity of ecosystems, which contain and provide the living environment for species in protected areas, is considered a most important activity.

Based on analyses of causes and impact levels on biodiversity losses, the following are the proposed objectives with their necessary actions. The agencies responsible, timing and funding sources for undertaking those actions in order to prevent biodiversity degradation and to manage PAs better are also given.

Objective 1.

To develop a complete protected area system with agreed criteria for categorization.

The current SUF system in Vietnam consists of the three categories of National Park, Nature Reserve and Cultural-Historical-Environmental Site. This categorization has demonstrated its weaknesses as it does not represent and support all ecosystem types for biodiversity conservation activities in Vietnam (see Box 1). Tropical marine and wetland ecosystems, some areas of which have very rich biodiversity, have nearly been forgotten. In some cases, they have only been mentioned as an adjunct to national parks (e.g. the marine areas of Cat Ba and Con Dao National Parks). Xuan Thuy Nature Reserve in Nam Dinh Province is Vietnam's only designated Ramsar wetland site and Can Gio Biosphere Reserve in Ho Chi Minh City is the only other wetland protected area, although other wetlands are protected within the Special-use Forest system. Obviously, the current protected area system has focused on forests and less on other ecosystems. A general report on planning, organization and management of protected areas in November 1997 from the Ministry of Agriculture and Rural Development assessed strengths and weaknesses of activities in this area. Lists of existing and proposed PAs are provided in Annexes 4 and 5.

Primary Responsibility: NNCA
Supporting Organisations: FIPI, IEBR, University of Forestry, Hanoi National University, Oceanography Institute in Nha Trang, International NGOs, e.g. IUCN, WWF, Birdlife, FFI, IMA.
Timeframe: 2003 - 2005.
Funding sources: State budget, NGOs, GAAs.

Action 1. Complete the categorization of the protected area system in Vietnam including wetlands and marine protected areas (MPAs) and obtain a Decision of the Government on protected

area categorization (see Annex 6) and a listing of protected areas in the system for Vietnam.

Action 2. Prioritize protected area management based on biodiversity conservation priorities (see Annex 7) and seek agreement by the Government on protected area development criteria and management priorities.

Objective 2.

To strengthen management cooperation for protected are as and biodiversity conservation.

One of the important causes leading to weaknesses in protected area management in Vietnam in the past years has been the lack of management cooperation between levels and agencies from central to local levels, between social organizations and especially between local authorities, local communities and protected area management boards. An essential activity to improve management cooperation relationships among state agencies and between state agencies with local communities is to integrate development activities with conservation.

Primary Responsibility: PPCs.

Supporting Organisations: NNCA, Universities, research institutes and NGOs. CEMP, NNCA, Universities, research institutes, functional agencies in provinces (Land Administration Department, DARD, Provincial FPDs), District and Communal PCs, mass organisations (provincial and district women's unions, farmers' unions), UNDP, FAO, NGOs.

Time: Start in 2003 and end in 2010

Funding sources: State and provincial budgets, NGOs, conservation projects in protected areas.

Action 1. Strengthen buffer zone management to support biodiversity conservation in protected areas.

Box 2. Roles of buffer zones in biodiversity conservation in protected areas.

Buffer zones have not worked well to shield and support biodiversity conservation in current Special-use Forests. The main reason is that there have been few investment projects in buffer zones and activities in these areas have not been combined with conservation. Buffer zone (BZ) management needs changes. The same principles can be applied to developing systems in wetlands and marine protected areas. Changes required are as follows:

- Establish BZ project management boards including commune and district leaders, heads of local district FPDs and PA Directors. Technical direction to activities in BZs has to take into consideration the biodiversity conservation tasks of protected areas.
- Promote land allocation and forest assignment in BZs for long term to local communities.
- Increase investment projects on forest protection and development in BZs in accordance with the priority order of SUFs following models of conservation and development. Investment programmes for BZs should go to one focal management point so that it has enough resources to solve issues.
- Improve local people's living standards, minimise negative impacts on PAs, identify and shift from actions negatively affecting biodiversity to positive actions.
- Protected areas need to extend study areas to improve biodiversity conservation management in BZs, especially of species at low densities or those that extend their home ranges into BZs (e.g. some herbivorous and carnivorous mammals, some bird species).

Necessary outputs:

1. Operational regulations and cooperation principles between BZs with protected areas.
2. Regulations on benefits and tasks of stakeholders participating in BZ management, especially for local ethnic communities.
3. Long-term investment plans for BZ development.

Action 2. Improve community consultations for conservation and management of protected area by ensuring that ethnic minority groups and women are proportionally represented in meetings. [For opinions to be given freely, in some cases, it may be necessary to integrate women into the decision-making process by holding meetings that only women representatives attend.

Box 3. Improving protected area management and conservation with the participation of ethnic groups and women.

Vietnam's biodiversity has been degrading and the main causes are activities of human beings. Regretfully, awareness of officers and local people about biodiversity values has been limited, especially those of ethnic groups in remote and mountainous areas. Though functional agencies have been carrying out information dissemination activities on biodiversity conservation, particularly in protected areas, they have not been effective. The reasons are that most of the protected area system has not brought tangible economic benefits to ethnic groups living in and around protected areas. It is necessary to have local participation in order to have effective conservation. To have voluntary participation, their income and standard of living has to be improved so that their cultural and social life can be improved. This may be achieved through:

? Increased conservation education for communities living in and around protected area systems.

? Recognising that the roles and needs of women for products from protected areas are usually different to those of men in the different societies;

? Making plans for agricultural lands and sedentarisation; allocating lands and assigning forests for protection in BZs for long-term periods and with policies understood by the communities.

? Studying and developing economic production models such as forest gardening, mixed agro-forestry, sustainable utilization of marine resources and non-timber forest products (NTFPs), and increasing technology transfer. Traditional production such as weaving, handicrafts, herbal medicine, reforestation with perennial trees for long-term produce should be promoted.

? Gradually changing and eliminating living traditions adversely affecting biodiversity conservation (e.g. nomadic living, slash-and-burn practices, all day wood burning, etc.)

? Developing preferential credits to improve community economies.

Necessary outputs:

- Village commitments to biodiversity management and conservation.
- Conservation awareness of ethnic communities increased; some traditions changed (all-day firewood burning, wild animal hunting, etc.)

- Community participation in protected area management and biodiversity conservation is voluntary, active and improved with representation from ethnic minorities and women.
- Various sustainable economic development models for households in BZs are produced.

Action 3. Improve peripheral ex-situ conservation activities for endangered wild flora and fauna species.

There are some botanical gardens, two zoos and two rescue centres for animals in Vietnam. Although their operations have been difficult, they have helped to educate the public about many species, their threatened habitats, hunting pressures and conservation requirements. The continuing issues for these establishments are as follows:

- Botanical gardens have not clearly demonstrated their significance or identified their roles in conserving threatened species or as places for storing rare genetic resources.

- Zoos have few threatened species and mainly raise common species or have species that are easily raised for tourism and school excursion purposes and thus their conservation service values are low.

- The Rescue Centre for wildlife in Soc Son District, Hanoi is poor with weak technical levels and poor investment. The rescue capacity is very low. The Primate Rescue Centre in Cuc Phuong National Park rescues injured and confiscated primates successfully but faces the very difficult problem of successfully returning animals to the wild after they are held for lengthy periods of time. It may be possible to do so with the leaf-eating langurs only. Other species need to be reintroduced to their native habitats quickly.

In order to effectively support the conservation of Vietnam's biodiversity, especially threatened and endangered species, botanical gardens, zoos and rescue centres need dramatic changes in organization and awareness as well as their tasks. These include:

? *Strengthen and reorientate activities in the current botanical gardens, particularly those in Tam Dao, Ba Vi, Cuc Phuong and Bach Ma National Parks, Cau Hai Forestry Centre (Phu Tho Province) and the one in the Forestry University of Vietnam, so that they serve biodiversity conservation objectives.*

? *Some more botanical gardens need developing to store and provide floral genetic resources for the Central Highlands region, for storing and providing floral genetic resources for the Southeastern and Southern regions. A facility for southern coastal species also needs to be established.*

? *Change the name of rescue centres to "Wildlife Rehabilitation Centres" to emphasise that they are not developed to exhibit wildlife (zoos) but rather*

that their role is to return animals to the wild. Otherwise, the wildlife should be euthanased.

? *Change the activities and greatly improve the technical capacity of the "rescue centre" for wildlife in Soc Son to perform services that support the implementation of wildlife protection legislation.*

? *Develop soon two more centres for wildlife rehabilitation and for supporting the implementation of wildlife protection legislation in the central and the southern regions, not only creating favourable conditions for the activities but also meeting the ecological and behavioural requirements of rescued animals and only for their recuperation and release back into their native habitats.*

? *Invest in infrastructure and human resources to strengthen and develop the current zoos in accordance with a basic function of being places to raise and reproduce endemic and rare wildlife, including for release into the wild if feasible. This need not be an exclusive function.*

Assumed outputs:

- A system of botanical gardens and wild animal centres strengthened and serving conservation objectives, including some new ones established.

- Threatened faunal and floral species raised and released/established in ecologically suitable places.

Action 4. Increase international cooperation in protected area management and biodiversity conservation.

Since 1990, many NGOs (e.g. WWF, IUCN, FFI, Birdlife International), banks and overseas development funds in several countries have helped Vietnam through projects on protected area management and biodiversity conservation. Thank to those projects, not only protected area management is better but also expertise and skills of protected area staff have been improved. On the other hand, some projects have shown their ineffectiveness, lacking technical transfer and training for human resource development in-country. These have used mainly international consultants, not Vietnamese ones. National coordination of NGO projects has sometimes been loose and needs improvement.

With a sound approach, more projects on protected area management and biodiversity conservation will be funded, there will be better participation of Vietnamese scientists and protected area staff and experiences and information about protected area management and biodiversity conservation will be available and shared.

The following actions need to occur in the future to strengthen international cooperation and increase benefits flowing to Vietnam:

? Create favourable conditions for international organizations to provide support and assistance for financing, scientific management and technology transfer for protected area systems.

? Provide nationally consistent direction and coordination of development assistance projects funded by external and non-government organisations in protected area management, research and biodiversity conservation, consistent with this strategy.

? Clearly define responsibility of organisations and agencies implementing projects in the aspects of recruitment of international and national experts in accordance with the aim of strengthening staff capacity for protected areas management.

? Share achievements of biodiversity projects with protected area management agencies and domestic and international scientific bodies through distributed or easily accessed information.

Action 5. Improve the level of tourism management and monitoring in the protected area system.

Up to the present, tourism has not paid, or paid little, attention to biodiversity conservation in protected areas. In the past few years, the concept of ecotourism has been adopted rapidly in Vietnam and its controlled and sustainable development, meeting conservation objectives, is a challenge for protected area system management. Moreover, Vietnam has not had clear benefit-sharing mechanisms for activities occurring in protected areas. All tourism activities in protected areas in the coming years should be controlled to meet conservation objectives as follow:

? Develop policies at the national level for the development of cooperation principles and identifying responsibilities for ecotourism in protected areas. Appropriate new legislation should be promulgated and corresponding amendments to existing legislation made (e.g. Laws on Forest Protection and Development and Environment Protection).

? Produce inter-sectoral regulations on functions and tasks for provincial agencies and tourism companies for improved protected area management and biodiversity conservation with tourism activities.

? Establish, through regulations, agreements on the mechanism for sharing benefits gained from tourism and returns to management and biodiversity conservation in protected areas.

Assumed outputs:

- Legal documents, inter-sectoral regulations on tourism management in protected areas issued.

- Legislation on benefit mechanisms and specific environment tax duties promulgated.

Objective 3.

To strengthen legislation effectiveness for biodiversity conservation and protected area management.

Primary Responsibility: NNCA.
Supporting Organisations: PPCs, CEMP, PA Management Boards, NGOs. General Customs Department, IEBR, Universities, dedicated training centres.
Timeframe: 2003 to 2007.
Funding sources: State budget, provincial budgets, GAAs, NGOs.

Action 1. Translate and/or interpret regulations on PA management and biodiversity protection to suit local people's knowledge so that they can be aware of policies and legislation about PAs and biodiversity conservation.

Action 2. Improve the performance and effectiveness of forest rangers, fishery control officers and customs officers by increasing training for law enforcement staff on biodiversity management and related issues.

Action 3. Develop national and provincial guidelines and regulations to establish uniformity in settling violations of laws and regulations on nature protection.

Objective 4.

To limit firewood collection and ensure sustainable uses of NTFPs.

Primary Responsibility: Ministry of Industry.
Supporting Organisations: NNCA, CEMP, PPCs, PA Management Boards, NSTC, NGOs.
Timeframe: 2003 to 2010.
Funding sources: State budget, NGOs.

Action 1. Promote the development of energy sources to replace firewood such as coal, gas, biogas, small-scale hydroelectricity, solar and wind energy. Encourage the use of energy-efficient heating and cooking technology.

Action 2. Improve policies and procedures for use of firewood and NTFPs and develop buffer zone development projects including

development of models for firewood plantation to meet local needs for these products.

Action 3. Develop and apply widely the implementation of demonstration projects on NTFPs and medicinal plants.

Objective 5.

To prevent illegal hunting, taking, holding and trading in marine organisms, wildlife and plant species.

Primary Responsibility: NNCA.
Supporting Organisations: General Customs Dept., Ministry of Police (MOP), PPCs, TRAFFIC.
Timeframe: 2003-2010
Funding sources: State budget, NGOs, GAAs.

Action 1. Capacity building for police and customs officers for executing regulations on wildlife protection with special attention paid to control wildlife trading at international seaports, land borders and airports.

Action 2. Increase trans-boundary cooperation in nature conservation, illegal hunting, trading control, fire control, information and technical exchange.

Action 3. Increase monitoring of the implementation of regulations to control fishing techniques harmful to biodiversity conservation, especially in reef areas and other key fishing grounds. Support technology transfer and finance for villagers to change harmful fishing practices.

Action 4. Study the production of marine species and plants and animals for commercial benefits to help raise local incomes and assist wild resources to persist.

Objective 6.

To prevent and control pollution and minimise environment impacts, especially on wetlands ecosystems, due to economic development.

Primary Responsibility: NNCA.
Supporting Organisations: MPI, PPCs, PA Management.
Timeframe: 2003-2010
Funding sources: State and provincial budgets, GAAs, NGOs.

Action 1. Capacity building for environmental management system, improve policies and legislation on development requirements in relation to natural resources and the environment.

Action 2. Promote and develop the application of suitable technology for production and for pollution treatment.

Action 3. Better implementation of environment impact assessment (EIA), select environmental friendly approaches, and carry out appropriate measures to minimize impacts, especially activities in PAs and environmentally sensitive areas.

Objective 7.

To improve implementation of forest fire prevention and control.

Primary Responsibility: NNCA.
Supporting Organisations: Government, MOP, Ministry of Defence, PCs at all levels, PA Management Boards
Timeframe: 2003 to 2005.
Funding sources: State budget.

Action 1. Develop national forest fire prevention and control policies for PAs. Establish social organizations for forest fire prevention, including public monitoring and control force, from central to provincial, district, communal and village levels. Develop forest fire control plans.

Action 2. Review management experiences in community-based traditional methods of fire control; encourage community's involvement in forest fire control.

Objective 8.

To reduce forestland encroachment.

Primary Responsibility: General Dept. of Land Administration.
Supporting Organisations: PCs at all levels, PA Management Boards.
Timeframe: 2003 to 2010.
Funding sources: State and provincial budgets.

Action 1. Develop a land use map down to district and communal levels; complete land allocation and forest assignments, consistent with PA management objectives, to inhabitants living in buffer zones.

Action 2. Encourage and support agricultural, forestry and ecological activities; develop agro-forestry farming models, increase processing activities and agricultural product exports.

Objective 9.

To control exotic faunal and floral species.

Primary Responsibility: MARD.
Supporting Organisations: MOFi, NNCA, PPCs, PA managers.
Timeframe: Development 2003 to 2005 and on-going to 2010.
Funding sources: State and provincial budgets, GAAs, NGOs.

Action 1. Improve the Act on faunal and floral importations. Better carry out verification of new exotic species and design control strategies. Apply strict measures to prevent invasion and expansion of exotic species.

Action 2. Study and promote the utilization of indigenous plants to enrich degraded natural forests in PAs or for supplementary planting under the 5MHRP. Give training courses to local people on classification, planting and tending of local plants.

Objective 10.

To discover gaps in management and conservation of biodiversity and effective solutions based on the opinions of scientists, managers, conservationists and local people.

The most effective methods for disseminating information about studies and requirements for conservation of biodiversity are different kinds of assistance, organization of conferences, workshops and seminars among scientists, managers, conservationists and local communities.

Primary Responsibility: NNCA.
Supporting Organisations: IEBR, HNU, FUV, FIPI, FSIV, NCNST, PPCs, and PA managers.
Timeframe: 2003 to 2010.
Funding sources: State and provincial budgets, NGOs.

Action 1. Organize short programs for increasing awareness or improving knowledge and understanding about conservation of natural resources through classes, meetings, workshops, and training, among policy makers, decision makers, managers and governmental bodies.

Action 2. Organize local, national, regional or international workshops, whenever practical together with local communities living in or around protected areas.

Action 3. Publish and/or distribute books and materials for teaching and reference.

2.3. Improving knowledge and skills

Background

Understanding of the importance and roles of biodiversity and the skills required for nature conservation needs to be improved by the general population to give additional support to the country for the development of a sustainable socio-economy. The lack of knowledge and misunderstandings about the sustainable uses of forest resources and the causes of degradation of these resources are some of the main obstacles for nature and environment protection. The goal of improving knowledge and skills is to push towards better cooperation and understanding about biodiversity conservation and the urgent measures needed. Clearly, no efforts for nature conservation can be successful if most of the people managing those resources do not have a deep and broad knowledge and understanding plus good skills.

In order to protect and sustainably develop the valuable natural resources of the country there is a need to underline the contribution PAs, as a critical part of those natural resources, make to public health and the quality of life and to formalize the links between technological, economic and social issues. Economic analysis and evaluation of conservation of natural resources is one of the most difficult and complicated tasks. The conservation value often is difficult to quantify. However, it is generally understood that conservation of biodiversity has a large and strategic value in the socio-economic development program. Investments for conservation can be quantified but outcomes from conservation are frequently priceless. It is essential that we aim to obtain full value from nature through PAs and biodiversity conservation, limiting ecological, social and economic damage from uncontrolled exploitation of natural resources and environmental pollution.

Objective 1.

To ensure that biodiversity surveys and monitoring contribute to management knowledge with clear goals, methods and detailed programs with good quality museum reference material available.

? **Biodiversity surveys, monitoring and management activities:**

Biodiversity surveys have been carried out for many years. However in many areas, biodiversity surveys must be commenced, completed, updated or improved. Other research is needed to discover measures to reduce threats, determine species' status and determine the relationships between limiting factors. Also there is a need for management program development, determination of funding sources and to include participation of local people in planning and management. There is a need to increase investment for basic biodiversity studies (species and ecosystem diversity) in protected areas. Organization, direction and coordination at the national level for basic biodiversity studies need to be united to avoid overlaps. Distribution mapping,

especially for rare and endemic faunal and floral species and for those under high harvesting threats, should be developed.

Data and information sharing: The results of studies on fauna and flora have contributed a great deal to the development of the country, biodiversity conservation and rational utilization of our natural resources. However, there are still many weaknesses in carrying out studies, such as professional level, organizational ability and fundraising. The data on biodiversity are plentiful but scattered in different governmental and non-governmental organizations within and outside the country. Up to now there has not been consistent management and use of these databases, which leads to wastefulness and inefficiency.

Plant specimens: Most herbariums have no person responsible for the collection. Some workers in herbariums do not understand their role in maintaining samples. No herbarium has a complete list of the plant species they have in their collections. Therefore, they cannot be involved fully in an information sharing process. As well, most herbariums are not provided with sufficient funds for their own activities.

Animal specimens: At the present time, specimens kept in museums are insufficient to provide a technical base for research. Electronic databases, programs or management tools have not been established in museums yet and this causes many difficulties in updating information and finding specimens.

Monitoring is a process of following the trends in populations, distribution of a species or groups of species, vegetation cover or some other aspect of biodiversity over a period of time. This practice is quite new in Vietnam. In fact a lot of effort is concentrated on developing lists of threatened species and the composition of ecosystems but there is very little effort concentrated on monitoring the status of species and ecosystems over time.

Primary Responsibility: NNCA.
Supporting Organisations: IEBR, FIPI, CRES, Marine Institutes, Universities, NCST, PPCs, PA managers.
Timeframe: 2003 - 2010.
Funding sources: State and provincial budgets, NGOs, GAAs.

Action 1. Build programs and include in management plans management-oriented research on biodiversity resources, resource utilization (legal and illegal) and related socio-economic issues in PAs over the long term.

Action 2. Organize education and training courses on the following:

i. Biodiversity surveys and monitoring in protected areas for junior scientists and technicians (short and long term);

ii. Improving skills in building and management of database programs for staff in different level organizations (short and medium term); and

iii. Methods of collection, preparation and maintenance of plant and animal specimens for field workers and herbarium and museum staff (short and medium term).

Objective 2.

Improve skills in the profession of ecosystem management, information collection and processing for managers and technical staff in PAs.

? **Information for management**:

Protected area features: Protected areas should be understood as the areas set aside to meet specific objectives such as protection of nature, ecosystems, animal and plant gene pools, to conserve historical, cultural and seascape/landscape sites, for education, enjoyment, tourism and scientific research. At present, the management of PAs face many difficulties. Among them are collection and distribution of information and the lack of equipment and technical support. Budgets severely limit activities in many cases.

Primary Responsibility: NNCA.
Supporting Organisations: FC, FIPI, PPCs, PFPDs, DARDs, PAs.
Timeframe: 2003 - 2010.
Funding sources: State and provincial budgets, NGOs and GAAs.

Action 1. Organize training courses on:

1. Ecosystem management using modern techniques, for managers at provincial and district levels (short-medium term); and on
2. Improving skills in management and using modern techniques and field gear, for technical staff in PAs (long term).

Objective 3.

To increase the application of GIS technology for PA management.

? **Technological support:**

Geographical Information Systems (GIS) allow digital input from photographs and other images, integration of all components of maps and data from other sources, spatial analysis of data and the separation of discrete areas for study. GIS not only allows the display of the changes in areas surrounding a study site over different periods of time but can answer questions such as why these changes appear and can predict what may happen in the future.

At the present time, due to equipment shortages and utilisation skills, it is possible generally to use GIS systems at regional and country level only.

Primary Responsibility: MARD.
Supporting Organisations: CIAS, HNU, NNCA, NCSNT, IEBR, FIPI, PFPD, PPCs, PAs.
Timeframe: Development 2003 to 2005 and on-going to 2010.
Funding sources: State and provincial budgets, GAAs, NGOs.

Action 1. Organize classes and training courses on GIS, building reports and using software for integrating database management for

management staff at provincial and regional levels (long term, medium term and short term).

Objective 4.

To develop a national training program suitable for three categories: Policy and decision makers, professionals and technicians, and users of biological resources.

? Training needs

The difficulties facing land management and biodiversity conservation in many protected areas are due in part to a shortage of staff with good professional expertise. At present, staff graduated from universities or post-graduates working in national parks and nature reserves are very few and some of them have been poorly trained. This situation has lasted for a long time and has had significant effects on scientific studies in national parks and nature reserves, limiting the development of databases and the sharing of biodiversity information. If training is not done well, this lack will become more obvious and serious in the future.

Improving knowledge about conservation of nature for policy makers and law enforcement personnel also should be done. Conservation of natural resources cannot be separated from government policies and socio-economic development programs.

In addition, training trainers to suit conditions in each area at city, provincial, district and commune levels is needed for conducting conservation programs and improvement of knowledge of local people. Training about biodiversity conservation is required for most government organizations at different levels from the commune to central authorities. Different courses must be targeted and organized for different groups.

Primary Responsibility : NNCA.
Supporting Organisations: IEBR, NUH, FC, FIPI, institutions for aquaculture, NCST, MET, PPCs, PFPDs, PAs.
Timeframe: 2003 and on-going.
Funding sources: State and provincial budgets, NGOs and GAAs.

Action 1. Develop and provide education and training programs to meet the wide range of needs for those people directly involved with nature conservation as well as for supporting personnel and policy makers. (More detailed requirements are provided at Annex 8).

Action 2. Develop agreed management principles, staff recruitment policies and competency levels for all staff for Vietnam's protected area system.

Action 3. Provide training courses to improve the number, quality and capacity of staff for scientific studies, monitoring natural resource trends, biodiversity and environmental surveillance in protected areas (see Box 4).

Box 4. Organisation and staff capacity in some national parks and nature reserves and recruitment principles.

National parks, nature reserves	Total staff	Current qualifications				Specialised staff			
		MSc	Eng.	Secondary	No training	Flora	Fauna	Ecology	Biodiversity
Hoang Lien Sa Pa	11	0	7	3	1	0	0	0	0
Tam Dao	76	2	20	34	30	0	0	0	0
Phong Nha-Ke Bang	20	0	6	10	4	0	0	0	0
Bach Ma	70	2	30	21	17	4	2	5	30
Kon Ka Kinh	12	0	7	5	0	0	0	0	0
Binh Chau- Phuoc Buu	60	0	3	8	49	0	0	0	0
Cat Tien	181	0	25	47	109	0	2	0	0

- Staff in some national parks and nature reserves have not been in stable working positions. There are often changes in task assignments. Therefore, though staff of national parks and nature reserves are numerous, they do not have expertise, dedication and enthusiasm for their work.
- Staff selection principles:

? *Regulations on number of staff working in protected areas must be based on area, management requirements and conservation priority level and be shown in NNCA stipulations.*

? *Application of civil servant recruitment procedures of the Government.*

? *Staff is trained properly. Preferential policies based on academic results, local people and ethnic minority groups.*

Necessary outputs:

- By 2005, at least one leader of a relevant Provincial Department who is in charge of conservation activities and protected area management boards is given training in protected area management skills and biodiversity conservation.

- By 2005, 50% of technical and scientific officers are trained and have professional expertise and up to 100% by 2010.

- By 2005, 50% of forest rangers are trained in biodiversity conservation skills and up to 100% by 2010 (Regarding other skills, they have been trained to the standard currently applied for rangers).

- By 2005, 100% of elders and heads of villages that pose strong pressures on protected areas are given training in biodiversity and by 2010 100% of the remaining village elders and heads are given training.

- By 2006, protected areas complete baseline survey programs, develop lists of fauna (including fish and invertebrates in reef systems) and flora. By 2007, detailed vegetation cover/reef distribution maps will be finished.

Objective 5.

To develop a national and PA database of biodiversity.

? **Capacity building**:

A rapid up-dating of biodiversity information, building modern database management programs and preparing materials for a unified management strategy for plant and animal resources for the whole country is a necessity for Vietnam. This must be done for scie ntifically-based, socio-economic and natural resources development and environmental protection, particularly in this time of industrialization and modernization. It is necessary for the management of huge volumes of biodiversity data for quick and immediate access to researchers, policymakers and managers.

The national biodiversity database needs vast improvement, initially for protected areas, and Vietnam's biodiversity information requires the establishment of a data-sharing programme. The national and scientific and technological management agencies are urged to develop database management programs for natural resources.

Primary Responsibility: IEBR.
Supporting Organisations: FIPI, NNCA, NCST, MET.
Timeframe: 2003 finish 2007
Funding sources: State and provincial budgets, GAAs.

Action 1. Train scientists and technicians on building database programs (long term) and on search strategies for information on the internet (short term).

Objective 6.

To improve the level of ecotourism management and skills for monitoring environmental impacts of tourism activities in the protected area system.

Up to the present, tourism development has paid little, if any, attention to biodiversity conservation in protected areas. However, the concept of ecotourism is being adopted rapidly in Vietnam and its controlled and sustainable development while meeting conservation objectives is a challenge for protected area system management. Moreover, Vietnam has not had clear benefit-sharing mechanisms for activities occurring in protected areas. All tourism activities in protected areas in the coming years should be controlled to meet conservation objectives as follows:

Primary Responsibility: NNCA.
Supporting Organisations: General Tourism Department, Institute for Strategies and Development of MPI, provincial agencies, tourism companies, PA managers.
Time: Start in 2003 and end in 2005
Funding source: State budget.

Action 1. a) National level direction is needed for the development of cooperation principles and identifying responsibilities for ecotourism in protected areas. Appropriate new legislation should be promulgated and corresponding amendments to existing legislation made (e.g. Law on Forest Protection and Development and Environment Protection).

b) Inter-sectoral regulations on functions and tasks are needed for provincial agencies and tourism companies for improved protected area management and biodiversity conservation with tourism activities.

c) Regulations are needed on the mechanism for sharing benefits gained from tourism and returns to protected areas management and biodiversity conservation.

d) Survey needs and develop a national ecotourism plan for protected areas.

Assumed outputs:

- Legal documents, inter-sectoral regulations on tourism management in protected areas issued.
- Legislation on benefit mechanisms and specific environment tax duties promulgated.

Ecotourism is a new area of interest not only for managers but also for scientists. Different target groups will need different training content and emphasis (such as disturbance of vulnerable species and habitats, directing tourists to suitable areas, providing trained guides and the provision of interpretative materials).

Action 2. Provide training courses on ecotourism management, services and the monitoring of use and impacts for managers and field staff in PAs (short term).

Action 3. Organize meetings, forum, symposia, etc. on ecotourism for managers, policymakers, law enforcement personnel, tourist companies and guides, hotel managers, conservationists and local communities.

Objective 7.

To develop collaboration through exchange programs and study tours for managers and rangers among protected areas, within and outside the country, in order to learn and exchange experiences and establish professional networks.

Primary Responsibility : NNCA.
Supporting Organisations: PPCs, PFPDs, DARDs, DARPs, PA Directors, NGOs.
Timeframe: 2003 and on-going.
Funding sources: State and provincial budgets, NGOs and GAAs.

Action 1. Develop programs for short-term work experience exchanges for protected area staff within the country and abroad.

Action 2. Develop study tour programs for PA staff throughout the country, and internationally where possible, for exchange of information and experiences.

Objective 8.

To articulate clearly the values of biodiversity for the economy, ecology, environment, aesthetics and social issues for humans and the reasons for degradation and losses of value.

? **Biodiversity technical knowledge:**

Biodiversity has an irreplaceable value to humankind in the existing and developing biological world. In the last several decades in Vietnam degradation of forests, wetlands and the marine environment has progressed rapidly. Most ecosystems have changed in quality, species have been lost and genetic diversity has been reduced. The reasons for this degradation are both natural calamities and human activities.

The second reason results from a low level of knowledge about biodiversity conservation and the negative long term economic effects of poor environmental management.

Primary Responsibility: NNCA
Supporting Organisations: IEBR, CRES, Marine Institutes, Universities, FIPI, NCST, PPCs.
Timeframe: 2003 and on-going to 2010.
Funding sources: State, provincial and institution budgets, NGOs, GAAs.

Action 1. Encourage the implementation of research projects centred on or including PAs that address the full range of evaluation issues, for input to government policy making.

Objective 9.

To strengthen skills for rehabilitation of degraded areas in terrestrial PAs.

? **Regeneration, reforestation activities:**

The government is carrying out the 5MHRP (661 Program for replanting 5 million ha of forest) throughout the country under the direction of MARD. The project will last for about 10 years and is applicable in PAs.

Primary Responsibility: NNCA.
Supporting Organisations: PPCs, FIPI, FC, FSRI, DFD, ISD/MPI, PA managers.
Timeframe: 2003 - 2010
Funding sources: State and provincial budgets, International agencies, NGOs and GAAs.

Action 1. Improve the appraisal process for the areas possible for planting or regeneration of forests in PAs and determine local native plant species suitable for the areas.

Action 2. Organize training courses on improvement skills in forest regeneration for managers and staff of PAs (short and medium term)

? **Management of resource use:**

One of the main reasons for environmental degradation is human activities. The management and sustainable, rational use of biodiversity resources are essential for sound economic and social development.

Action 3. Improve skills for development of projects in buffer zones and other areas adjacent to PAs, for sustainable uses of PA resources and for rehabilitation projects within PAs.

2.4. Community awareness and participation in conservation

Background

In recent years, the recognition of PA roles and values by the general public, managers, policy makers and decision makers has increased. However, that recognition has still been limited and has not been turned into frequent and practical actions. In order for these individuals and communities to change their behaviours and participate in conservation, three things must occur (Matarasso and Nguyen Viet Dung, 2002). First, they must understand and acknowledge the problems they and the environment are confronting. Secondly, they need to recognize the benefits that will occur with change and the consequences, especially in the longer term, if they don't change. Thirdly, they need to identify viable alternatives to meet their current lifestyle needs. With communities living in and adjacent to PAs, these needs are often their basic living requirements.

These communities (all of the people who live in the same area whether it is big or small, e.g. village, commune, the whole country, whichever is applicable) are one of the keys to successful conservation. Increased awareness will enable changes in their attitudes, generate the distribution of knowledge, lead people to seek new skills and gain greater participation in management of PAs for their own futures. These issues are addressed in other sections of this strategy.

Objective 1.

To improve awareness by communities of biodiversity conservation and PAs.

Improving people's understanding of the value of biodiversity and the roles of PAs to their lives will help to bring about changes in behavior, harvesting habits and biological resource utilization. This in turn can lead to protection actions for ecosystems, PAs, endemic and rare faunal and floral species.

Primary Responsibility: NNCA.
Supporting Organisations: MET, Universities and environment Research Institutes, PA management, PCs at all levels, mass organisations.
Timeframe: Start 2003, on-going to 2010.
Funding sources: State budget, provincial budgets, GAAs, NGOs.

Action 1. Develop education programmes and carry out biodiversity and PA awareness-raising for target groups such as communities in core and buffer zones of PAs, PA managers, authorities and policy-makers at all levels.

Action 2. Create opportunities for public access to information on biodiversity and PAs.

Action 3. Train government communication staff in biodiversity conservation and PAs protection as they are core staff in biodiversity conservation awareness-raising at local levels.

Action 4. Actively incorporate members of the mass organisations (e.g. Women's Union, Farmers' Union, Veterans' Associations) and village communities in planning and implementing awareness-raising activities.

Objective 2.

To improve education and training on biodiversity and PAs at schools.

Education of teachers should include information about legislation on environment protection, such as the Law on Forest Protection and Development, Decisions, Decrees, Directives and Circulars related to PAs and biodiversity. Teachers should also receive information about ecological, economic, tourism and scientific values of PAs in order to develop different community thinking, habits and actions supporting sustainable uses of biological resources.

As it is an inter-sectoral field, teaching material can be integrated into different subjects such as biology, geography, social science and humanity, natural sciences, law, citizenship education and outdoor activities. Contents must be varied, active and applicable to natural, socio-economic and living conditions in each locality.

Primary Responsibility: MET.
Supporting Organisations: Schools, universities, teachers' colleges, NNCA.
Time frame: 2003 to 2010.
Funding sources: State budget, provincial budgets, GAAs, NGOs.

Action 1. Put knowledge relevant to biodiversity and PAs in curricula at primary, secondary and tertiary levels, especially at teacher's training colleges and at boarding schools in mountainous provinces.

Objective 3

To develop consistent input and monitoring of biodiversity conservation content in education courses to improve awareness about PA roles and functions.

MET is responsible for developing curricula and research into educational formats suitable for each target group, training officers working in education and communication, carrying out education activities and expanding international cooperation in education. This is equally true about awareness-raising for biodiversity conservation and PAs.

Primary Responsibility: MET
Supporting Organisations: NNCA, PPCs at all levels, NGOs.
Timeframe: 2003 to 2010.
Funding sources: State budget.

Action 1. Establish a dedicated entity at national level, working in the education sector, for awareness-raising about biodiversity conservation and PAs.

Objective 4.

To require the participation of local communities in planning and developing investment projects to improve the feasibility and socio-economic effectiveness and efficiency of projects/programmes in buffer zones and PAs.

Primary Responsibility: NNCA.
Supporting Organisations: PPCs at all levels, PA managers, NGOs.
Timeframe: 2003 to 2005.
Funding sources: State budget, provincial budgets.

Action 1. Develop a legal framework to assist the mobilization of communities' participation in buffer zone development and nature conservation initiatives.

Action 2. Increase community roles and participation in environmental impact assessments of development projects.

Objective 5.

To increase responsibilities of the population for issues of biodiversity conservation and resource utilisation locally.

Primary Responsibility: MPI.
Supporting Organisations: NNCA, PPCs at all levels, PA managers, NGOs.
Timeframe: 2003 and on-going.
Funding sources: State budget, provincial budgets, GAAs.

Action 1. Integrate environment protection activities into programmes, projects and socio-economic development plans and develop economically sound demonstration models in marine, coastal and agricultural areas that impact on PAs.

Action 2. Encourage NGOs to be more active in transferring knowledge and in their research, training and support for management of PAs and buffer zone development, especially for agroforestry.

Objective 6.

To establish policies those stop population increases and expansion of living areas within PAs and encourage the passive resettlement of people to areas outside the boundaries of PAs.

Primary Responsibility: NNCA.
Supporting Organisations: MPI, MARD, MLIS, General Land Administration Dept., PPCs at all levels, PA managers, NGOs.
Timeframe: 2003 to 2007.
Funding sources: State budget, provincial budgets, GAAs.

Action 1. Develop policies and legal frameworks that stop further development of villages and communes within PAs. [Such action must go together with the provision of suitable land and improved social services and infrastructure at or near the boundary of PAs. Land swaps with villages and communes should be considered for their long-term conservation benefits.]

Action 2. Rehabilitate abandoned sites within PAs with the participation of the community.

Objective 7.

To develop and improve institutions and organisations to strongly attract the participation of the population, especially communities living adjacent to protected areas.

Primary Responsibility: NNCA.
Supporting Organisations: PPCs, provincial PA managers, NGOs, mass organisations.
Timeframe: 2003 - 2010
Funding source: State and provincial budgets, NGOs.

Action 1. Prepare mechanisms for community participation in natural resource protection and management in order to attract people's involvement.

Action 2. Develop institutions and policies for ecotourism development and clearly identify benefit-sharing rights of relevant stakeholders to encourage the private sector to invest in ecotourism development near or in PAs (in accordance with conservation objectives) and local people to invest in ecotourism services.

Action 3. Increase knowledge and skill improvement for managers, firstly for PA Management Board managers and staff of provincial level agencies in social knowledge and community communications.

Action 4. Develop communication and information on PAs and biodiversity conservation to communities in order to improve awareness and management capacity. Continual capacity building for NGOs and communities is essential to facilitate their more effective participation in PA management.

Action 5. Train key staff of communes on PA management where PAs and buffer zones are located.

Action 6. Establish a clear legal status and tasks in PA management for NGOs and mass organizations. These are important entities to call for local people's involvement in natural resource management.

Action 7. Develop incentive policies for encouraging the private sector to invest in PAs for co-management and mutual benefit and responsibility sharing.

Objective 8.

To improve knowledge and skills in environmental education and communications for central and provincial PA staff.

Primary Responsibility: NNCA.
Supporting Organisations: NGOs, PA management boards, VNU, CBOs.
Timeframe: 2003 finish 2010
Funding sources: State and provincial budgets, NGOs and GAAs.

Action 1. Provide training opportunities for PA staff in the principles, practices and techniques of environmental education and in the development of adult education programs for community members.

Action 2. Encourage the participation of PA management staff in the education programs of local schools.

Action 3. Provide awareness and techniques training for central and provincial PA line department staff in communications with the media and the general community.

2.5. International cooperation in biodiversity conservation

Background

It is widely recognized that the effective and efficient implementation of environmental protection and natural resource conservation globally requires not only individual efforts of each nation but also integrated sustainable development efforts by the international community. If global environment issues are to be addressed efficiently they require the participation and cooperation of all nations based on an international legal framework of Conventions. Accordingly, various international conventions have been issued including for biodiversity conservation (Annex 9).

? **The Convention on Biological Diversity (CBD):** See Annex 9.1

Objective 1.

To protect characteristic and sensitive ecosystems.

Primary Responsibility: PPCs.
Supporting Organisations: NNCA, GDLA, Provincial and District PA managers.
Timeframe: 2003-2005
Funding sources: State and Provincial budgets, NGOs, GAAs.

Action 1. Ensure that protected areas are clearly demarcated and zoned and their purpose well understood by those living in and near the PAs.

Action 2. Develop cooperative management arrangements with local communities so that their roles in biodiversity management can be improved.

Objective 2.

To protect over-exploited biodiversity components.

Primary Responsibility: NNCA.
Supporting Organisations: PPCs, protected area managers, mass organisations.
Timeframe: 2003 and on-going.
***Funding** sources:* State and provincial budgets, GAAs and NGOs.

Action 1. Develop policies cooperatively with stakeholders to provide guidance to field managers, develop and enact legislation, and provide training and facilities for enforcement personnel.

Action 2. Monitor and report on exploited natural resources within the PAs, design intervention activities, including awareness raising, regulatory processes, and enforcement and prosecution actions especially targeted at endangered fauna and flora traders acting illegally.

Objective 3.

To use biodiversity components in PAs in a responsible and sustainable way so that national nature conservation, social and economic goals are met.

Primary Responsibility: NNCA.
Supporting Organisations: PCs at all levels, PA managers, Ministry of Justice, NGOs, mass organisations, IEBR, CRES, universities and research institutes.
Time frame: 2003 to 2005
Funding source: State and provincial budgets, NGOs, GAAs.

Action 1. Develop policies and legislation that permit ecologically based and scientifically sound access to resources that are required for subsistence living.

? **The Ramsar Convention on Wetlands** (see Annex 9.2)

Objective 4.

To ensure that the values of wetland protected areas are recognized by all sections of the community and that they are managed to provide continued protective and health benefits to human communities and habitats for wildlife.

Primary Responsibility: NNCA.
Supporting Organisations: PCs at all levels, Ministry of Public Health, PA managers, NGOs, NCST, IEBR, CRES, universities.
Time frame: 2003 to 2005
Funding source: State budget, NGOs.

Action 1. Review the proposed list of wetland protected areas and nominate additional sites for the Ramsar List so that they receive wide recognition throughout national and international communities.

Action 2. Promote sustainable wetland conservation and the maintenance of wetland protected areas, both small and large, protecting them from drainage or alternative uses that degrade their biodiversity and community service values.

Objective 5.

To ensure that Vietnam meets its obligations under the agreement and provides appropriate training in wetland research and management for field-based staff, particularly in wetland protected areas.

Primary Responsibility: NNCA.
Supporting Organisations: MPI, MOF PCs at all levels, PA managers, CRES.
Time: 2003 and on-going.
Funding source: State and provincial budgets.

Action 1. Assign responsibilities and provide resources and facilities for monitoring compliance with Convention requirements, especially in PAs.

Action 2. Ensure accountability through provision of tri-annual National Reports on progress and attendance at the Conference of the Contracting Parties, and maintain contact with the Ramsar Convention Secretariat (the Ramsar Bureau).

? **CITES** (see Annex 9.3)

Objective 6.

To stop illegal acts with better impleme ntation of wildlife laws and policies.

Primary Responsibility: NNCA (FPD)
Supporting Organizations: Qualified NGO
Time: 2003 - 2005
Funding source: Has been provided by Danida.

Action 1. Undertake national wildlife law enforcement and CITES training workshops for Vietnam's relevant agencies.

Action 2. Increase CITES implementation capacity of the CITES authorities by improved accessibility (i.e. translation from English to Vietnamese) of CITES documents and attendance at the Conference of the Parties (COP) to CITES. Effectiveness cooperation in activities of TRAFFIC.

Action 3. Improve enforcement controls along Vietnam's international borders.

Action 4. Encourage collaboration on enforcement between Vietnam and its neighbours.

Objective 7.

To ensure that wildlife laws and policies are rational and based on science.

Primary Responsibility: NNCA (FPD)
Supporting Organizations: Provincial FPDs; IEBR; CRES; NNCA; General Department of Customs; Police; Ministry of Trade; Ministry of Transport; NGOs.
Time: 2003 - 2005
Funding source: Provided by Danida, State budget.

Action 1. Develop a National Action Plan to strategically and comprehensively address illegal and unsustainable wildlife trade.

Action 2. Develop a Regional Wildlife Trade Strategy to ensure international cooperative efforts in addressing wildlife trade issues.

Action 3. Increase the numbers of surveys of illegally traded wildlife and plants (e.g. as for marine turtles) in close cooperation with TRAFFIC.

Objective 8.

To reduce demand for wild fauna and flora products by increasing consumer awareness.

Primary Responsibility: NNCA.
Supporting Organizations: PCs at all levels, PA management, TRAFFIC and other NGOS.
Time: 2003 and on-going.
Funding source: Central and provincial budgets, GAAs and NGOs.

Action 1. Increase awareness of wildlife trade laws and fines.

Action 2. Provide relevant enforcement agencies with resource materials to better identify controlled species in trade.

Objective 9.

To reduce the supply or the harvest of wild species.

Primary Responsibility: PPCs.
Supporting Organizations: District and commune PCs, NNCA, Provincial managers of PAs, mass organisations, NGOs.
Time: 2003 and on-going.
Funding source: State and provincial budgets, NGOs, GAAs.

Action 1. Provide economic alternatives for those who directly harvest wild flora and fauna.

Action 2. Develop guidelines for captive breeding of CITES-listed species.

Action 3. Establish controlled storage facilities to retain confiscated materials (dead animals or animal parts, plants and plant parts) to enable appropriate judicial procedures.

Action 4. Amend legislation to prohibit enforcement officials from selling confiscated live wildlife to restaurants.

? **The World Heritage Convention** (see Annex 9.4)

Objective 10.

To ensure that management of the World Heritage Site is done with the maximum attention paid to biodiversity conservation in protected areas.

Primary Responsibility: MCI.
Supporting Organizations: NNCA (FPD), PPCs, Cat Ba National Park Management Board, NGOs.
Time: Formal agreement made in 2003 and coordination on-going.
Funding source: State and provincial budgets.

Action 1. Integrate the management of the World Heritage Site with the biodiversity conservation and other objectives for Cat Ba National Park (the island and its surrounding marine protected area) through a formal agreement and regular consultations between the responsible Ministries and local authorities.

CHAPTER 3.

ACTION AND INVESTMENT PROGRAMME

3.1. Implementation steps

Some of the actions detailed in this strategy are already being carried out by the central and provincial governments to some degree under existing programs within the boundaries set by funding. Others are being implemented by NGOs while the majority is being addressed in a cursory manner or not at all. Obviously, to meet all objectives considerable additional funds and support are needed both from national and international sources, as well as from creating mechanisms to attract domestic investment compatible with conservation objectives, over an extended period of time. However, the provision of funds must consider the capacity of the PA management boards to use them effectively and legitimately. Two levels of responsibility for implementing this strategy have been identified:

- First, government agencies identified as having primary responsibility will be required to take the lead in implementing actions and meeting objectives. They will coordinate their activities with other stakeholders and interest groups with supporting responsibilities. *The objections and actions for which they are responsible must be included in their agency planning*.

- Secondly, those noted as supporting agencies or organisations must cooperate with lead agencies to implement activities efficiently and effectively.

There currently is no central NNCA or similar organisation. This may eventually be set up in the new Ministry of Natural Resources and the Environment but, initially, it is proposed that the Forest Protection Department in MARD, working closely with provincial PA management agencies, will co-ordinate and monitor the implementation of the Strategy. This is because the FPD is the state management agency that has had the responsibility for developing the strategy and it currently oversees a large system of SUFs, has field staff in SUFs under its direction and has a close interagency relationship with provincial SUF area managers.

Human resource mobilization and funding sources

As a minimum, a team of two people with implementation responsibility will be clearly identified, initially within the Nature Conservation Section of the FPD. It will be the responsibility of this two-person FPD implementation team:

- To co-ordinate activities;
- To disseminate and exchange information widely among provinces;
- To identify actual and potential sources of funding more precisely;
- To seek commitments and co-operation from the Vietnamese Government agencies and GAAs;
- To assist the provinces to secure funding for the implementation of the Strategy's actions; and
- To monitor and report on progress.

It is not expected that the two-person team will be able to provide all of these services unaided. Other staff will need to be seconded or employed where the need is identified, for both short and long term periods. Where necessary, the implementation team may need to develop *Memoranda of Understanding* (MOU) with other agencies to secure commitment.

It is very important that there is continuity within the strategy implementation team and that a flexible approach to implementation is adopted Priorities need to be reviewed on an annual basis and be realistic in relation to the resources available. Continuity in the implementation team will help to ensure that the momentum, awareness and commitment achieved during the Strategy's development are not lost. It is the responsibility of the implementing agency (now MARD and the FPD) to ensure that at least one staff member is assigned permanently as the team leader for the task of strategy implementation, monitoring and reporting.

Initial input for the implementation of the MASPAS will come from the Forest Protection Department of MARD. However, in the longer term, the location of the office for the implementation team may best be within the MPI or the MONRE. The MPI has experience in monitoring programmes and can provide technical and occasional staffing assistance. Such a location should be maintained until a national agency for nature conservation is established. The implementation team will need to have additional staff sourced from MONRE (NEA) and the Ministry of Fisheries (DARP), as the current managers of wetlands and marine protected areas respectively, whenever possible This is essential to identify necessary policy development and supporting legislation requirements.

It will be necessary for MARD to ensure that the FPD receives additional funding to meet the costs of providing additional staff and equipment to support the critical tasks of the implementation team after the SPAM Project support finishes at the end of March 2003. This needs to be a Government commitment to ensure long-term sustainability. It will then be up to the implementation team personnel to locate the additional resources necessary for MASPAS implementation.

Funds and/or personnel may be sourced from the Government (existing or additional commitments), international and national NGOs, foundations, GAAs

and multilateral donors. Low-level additional funding from Government budgets may be used to engage technical or administrative fund-raising assistance from NGOs. Additional effect may be obtained through the implementation team's coordination of activities between provinces, e.g. training programs (including staff exchanges between protected areas) and joint (group) patrolling and enforcement actions. Financial resources also may be supplemented from revenue raised from ecotourism and service fees, etc.

Tasks and Responsibilities of Government Agencies

A major task of the implementing team will be to gain support for MASPAS implementation and to have the agencies with primary responsibility and the supporting agencies embrace the objectives and actions detailed in the MASPAS. Without this acceptance of responsibility it will not be possible to obtain the level of participation and coordination necessary for success. This should be made easier as the Government's Administration Reform Program reaches fulfilment. Hopefully, this will also lead to the accomplishment of the MASPAS objective seeking the establishment of a unified national administration and management system for nature conservation (the proposed NNCA). The establishment of the new Ministry of Natural Resources and Environment opens the possibilities for this to be achieved.

Of course, with any administration restructuring will come movement of responsibilities and it will be essential for the implementation team to monitor these and ensure that any new administration units are made fully aware of their responsibilities for meeting the objectives of the MASPAS. These should be carefully documented and circulated through the appropriate channels.

3.2. Investment development

Total investment demands

It is apparent that funding for protected areas in Vietnam requires a major boost if the myriad problems existing at the social, economic, policy, legislation, administration and field management levels are to be addressed in time to prevent the irretrievable degradation of the nation's established and proposed protected areas and the loss of the services and resources they provide to the people. A chronic lack of funds hampers nature conservation in many protected areas, while in others a reassessment of priorities and reassignment of available funds may be sufficient to meet needs through improved efficiency. Sufficient funds are required to meet effectively local and national social requirements as well.

Funding sources

Potential funding sources are identified for each Objective in the Strategy. However, these are only indicative. Gaining support and locating funds for projects is dependent on the skills and capacity of project managers.

There are several initiatives underway for securing increased long-term funding for protected area management. These are focused currently on the forest sector. They would better serve a wider range of national priorities if they were flexible and included wetlands, coastal mangrove forests and marine areas. Protected areas, especially in the poorer provinces, require a system of guaranteed funds in significant amounts to achieve conservation objectives. Designated funds from the Central Government are needed along with gradually increasing revenue for reinvestment in conservation, including from ecotourism and associated services.

The established 5 Million Hectare Reforestation Program (661 Program) provides government funds for rehabilitation activities. The developing Forest Sector Support Program will provide funds through associated projects, including for example, the World Bank-GEF Conservation Sinking Fund and its associated Technical Assistance Fund supported by the SNV and trust fund proposal for the Creating Protected Areas for Resource Conservation Using Landscape Ecology (PARC) Project targeted specifically at Na Hang- Ba Be and Yok Don National Parks.

Additional funding for protected area activities will come from externally-funded scientific studies, environmental education projects and other initiatives.

3.3 Integration with other strategies and programs

There are two important strategies that have been sanctioned by the government and which have direct relevance to the MASPAS. These are the *Biodiversity Action Plan* and the *Forest Development Strategy 2001-2010*. The Forest Sector Support Program (FSSP) is a major Agreement among the Government and various donors and NGOs, primarily to make most effective use of all available resources to implement the Forest Development Strategy including the 5 Million Hectare Reforestation Program (661 Program). In addition, the *National Strategy for Environmental Protection 2001-2010* was published in June 2000 but is yet to receive Government endorsement. The MASPAS has been developed to be consistent with these strategies and programs and its implementation must, of course, be consistent with established Government policy. This will provide a synergistic effect for the national purpose and significance of protected areas.

Important relationships exist with Government programs as mentioned above such as the established 5MHRP and developing project and multilateral funding.

The implementation team will need to identify other existing complimentary Government strategies and plans requiring integration of actions and ensure the co-ordination of that integration. Project design should identify cross-linkages with approved government strategies and other initiatives and the significance of those linkages. Such documents both endorsed by government and in the development stages, currently include:

- Biodiversity Action Plan;
- Forest Sector Management Strategy (particularly through the framework of the FSSP);

- Comprehensive Poverty Reduction and Growth Strategy;
- National Strategy for the Advancement of Women in Vietnam and its associated five-year Action Plan (Source: www.ubqgphunu.gov.vn);
- Strategy for Socio-economic Development 2001-2010;
- National Environmental Protection Strategy 2001-2010;
- Strategy for Sustainable Wetland Management in Vietnam;
- Draft Agriculture and Rural Development Strategy; and
- Draft National Environment Action Plan.

All national and international government or non-government programs and projects require sympathetic implementation with, and are expected to adhere to the principles and priorities established in, the MASPAS.

3.4. Monitoring and reporting progress

Reviews

As the implementation will occur within a long timeframe, the strategy is flexible. Implementation depends on resource availability and changes in stakeholder priorities. These changes will be incorporated into reviews of this Strategy.

The first full review should occur midway through the period covered by the strategy, i.e. in 2006. The second review, incorporating a national workshop of stakeholders should take place in mid-2010 so that new strategy objectives and actions can be incorporated, Government endorsement obtained and continuity of activities may occur into the next decade.

Monitoring

Each Objective in the strategy has a timeframe identified in which the Actions should be commenced and completed. These actions and timeframes will be used to review the progress of implementation. Monitoring of activities by the implementation team should be continuous with emphasis placed on written quarterly updates and reporting to the FPD Director.

Reports should indicate progress against each Objective and Action in the Strategy and identify weaknesses, poor performance and failure of responsible agencies and organisations to comply with strategy requirements and timelines. These reports need to recognize the level of priority given to each Objective and the difficulties existing in meeting resource requirements.

Where there are shortfalls in progress, a clear explanation should be given and the method to be used to overcome the obstacles must be detailed. Early identification will allow corrective steps to be taken in time and be effective. This is particularly important for High Priority Objectives.

3.5. Priorities

Immediate priorities are:

- A new and comprehensive law to address all issues related to nature conservation (A *Law on Nature Conservation*).
- Institutional and administration reform to establish a single integrated national agency for nature conservation.
- The strengthening of capacity and skills for managers and rangers through short-term and long-term training;
- Establishment of formal communication links between management boards and agencies responsible for buffer zone development to review development decisions in both protected areas and the buffer zones.
- The development of protected area management plans and zoning plans with allowable development and activities defined so that management actions and integrated financial planning can be assessed and reviewed readily;
- The provision and improvement of necessary infrastructure directly supporting management, and the updating and provision of field equipment;
- An increase in conservation information and education provision to the local communities who are using protected areas resources, so that they may adjust their habits to assist biodiversity conservation; and
- Increased scientific research, surveys and biodiversity monitoring consistent with management plan requirements for each PA.

Priorities (high, medium and low) have been assigned to all of the objectives in this strategy and are given below.

This listing makes no allowance for costs associated with the objective or availability of funds. Projects will be developed from these priorities.

High priority

1. ADMINISTRATION, MANAGEMENT, AND FINANCIAL REFORMS

- To strengthen state management functions, decentralizing management, assigning specific tasks and improving cooperation and coordination among Ministries, agencies and mass organizations (Objective 1).
- To reform procedures to establish, invest in, develop and consolidate existing and proposed PA Management Boards (Objective 2).

2. BIODIVERSITY CONSERVATION AND MANAGEMENT MEASURES

- To develop a complete protected area system with agreed criteria for categorization (Objective 1).
- To strengthen management cooperation for protected areas and biodiversity conservation (Objective 3).
- To control exotic faunal and floral species (Objective 9).
- To discover gaps in management and conservation of biodiversity and effective solutions based on the opinions of scientists, managers, conservationists, and local people (Objective 10).

3. IMPROVING KNOWLEDGE AND SKILLS

- To ensure that biodiversity surveys and monitoring contribute to management knowledge with clear goals, methods and detailed programs with good quality museum reference material available (Objective 1).
- To develop a national training program suitable for three categories: Policy and decision makers, professionals and technicians, and users of biological resources (Objective 4).
- To improve the level of ecotourism management and skills for monitoring environmental impacts of tourism activities in the protected area system. (Objective 6)
- To articulate clearly the values of biodiversity for the economy, ecology, environment, aesthetics and social issues for humans and the reasons for losses of value (Objective 8).

4. COMMUNITY AWARENESS AND PARTICIPATION IN CONSERVATION

- To improve awareness by communities of biodiversity conservation and PAs (Objective 1).
- To require the participation of local communities in planning and developing investment projects to improve the feasibility and socio-economic effectiveness and efficiency of projects/programmes in buffer zones and PAs (Objective 4).
- To establish policies that stops population increases and expansion of living areas within PAs and encourage the passive resettlement of people to areas outside the boundaries of PAs (Objective 6).

5. INTERNATIONAL COOPERATION IN BIODIVERSITY CONSERVATION

- To use biodiversity components in PAs in a responsible and sustainable way so that national nature conservation, social and economic goals are met (Objective 3).

- ☞ To ensure that the values of wetland protected areas are recognized by all sections of the community and that they are managed to provide continued protective and health benefits to human communities and habitats for wildlife (Objective 4).
- ☞ To stop illegal acts with better implementation of wildlife laws and policies (Objective 6).
- ☞ To ensure that wildlife laws and policies are rational and based on science (Objective 7).

Medium priority

1. ADMINISTRATION, MANAGEMENT, AND FINANCIAL REFORMS

- ☞ To strengthen legislation enforcement in protected areas through policy and operational reforms (Objective 4).

2. BIODIVERSITY CONSERVATION AND MANAGEMENT MEASURES

- ☞ To strengthen legislation effectiveness for biodiversity conservation and protected area management (Objective 2).
- ☞ To prevent illegal hunting, taking, holding and trading in marine organisms, wildlife and plant species (Objective 5).
- ☞ To prevent and control pollution and minimise environment impacts, especially on, wetlands ecosystems, due to economic development (Objective 6).

3. IMPROVING KNOWLEDGE AND SKILLS

- ☞ Improve skills in the profession of ecosystem management, information collection and processing for managers and technical staff in PAs (Objective 2).
- ☞ To increase the application of GIS technology for PA management (Objective 3).
- ☞ To develop a national and PA database of biodiversity (Objective 5).

4. COMMUNITY AWARENESS AND PARTICIPATION IN CONSERVATION

- ☞ To develop consistent input and monitoring of biodiversity conservation content in education courses to improve awareness about PA roles and functions (Objective 3).
- ☞ To increase responsibilities of the population for issues of biodiversity conservation and resource utilisation locally (Objective 5).

- To develop and improve institutions and organisations to strongly attract the participation of the population, especially communities living adjacent to protected areas (Objective 7).
- To improve knowledge and skills in environmental education and communications for central and provincial PA staff (Objective 8).

5. INTERNATIONAL COOPERATION IN BIODIVERSITY CONSERVATION

- To ensure that Vietnam meets its obligations under the agreement and provides appropriate training in wetland research and management for field-based staff, particularly in wetland protected areas (Objective 5).
- To reduce demand for wild fauna and flora products by increasing consumer awareness (Objective 8).
- To reduce the supply or the harvest of wild species (Objective 9).
- To ensure that management of the World Heritage Site is done with the maximum attention paid to biodiversity conservation in protected areas (Objective 10).

Low priority

1. ADMINISTRATION, MANAGEMENT, AND FINANCIAL REFORMS

- To reform the protected area management mechanism, particularly investment and financial management in PAs, to bring about favourable conditions to increase PA management boards' activities and management input (Objective 3).

2. BIODIVERSITY CONSERVATION AND MANAGEMENT MEASURES

- To limit firewood collection and ensure sustainable uses of NTFPs (Objective 4).
- To improve implementation of forest fire prevention and control (Objective 7).
- To reduce forestland encroachment (Objective 8).

3. IMPROVING KNOWLEDGE AND SKILLS

- To develop collaboration through exchange programs and study tours for managers and rangers, among protected areas within and outside the country, in order to learn and exchange experiences and establish professional networks (Objective 7).
- To strengthen skills for rehabilitation of degraded areas in terrestrial PAs (Objective 9).

4. COMMUNITY AWARENESS AND PARTICIPATION IN CONSERVATION

- ☞ To improve education and training on biodiversity and PAs at schools (Objective 2).

5. INTERNATIONAL COOPERATION IN BIODIVERSITY CONSERVATION

- ☞ To protect characteristic and sensitive ecosystems (Objective 1);
- ☞ To protect over-exploited biodiversity components (Objective 2).

GLOSSARY OF TERMS

Administration reform	Changes to the manner in which authority, relationships, decision-making and financial delegations operate and may involve structural and/or functional changes at the central, provincial, district or communal levels.
Agroforestry	Inter-planting of farm crops with trees for fruit, timber or other products.
Arboreal	Tree-dwelling.
Arboretum	Site where trees and shrubs are grown for study and display.
Aquaculture	The intensive commercial production of species in fresh or brackish water.
Biodiversity	The variety of life. It includes the complex of ecosystems, species and their genetic material.
Biomass	Amount of living plant or animal matter in a defined area.
Buffer zone	Buffer zone is a clearly marked area with boundaries, with or without forest, located adjacent to and outside the protected area and enclosing it to prevent or reduce encroachment into the protected area. All activities in the buffer zone should support conservation in the protected area and buffer zone, limiting migration from outside into the buffer zone in any form, actively developing the economic situation, contributing to stabilization and step-by-step improvement in the material, cultural and spiritual lives of the people living in the buffer zone.
Canopy	The upper layer (top) of a forest or woodland, which may be described as 'open' or 'closed'.
Catchment area	The area from which a river, stream or lake receives its water.
Clear felling	Complete clearance of an area of forest, as opposed to selective felling.
Climax vegetation	The final stage in the natural succession reached by a community under the existing environmental conditions.

Community	All of the people who live in the same area whether it is big or small, e.g. village, commune, the whole country, whichever is applicable.
Corridors	Strips or belts of vegetation (usually forest or woodland) joining larger blocks of forest or other habitats such as wetlands, grasslands, etc.
Dipterocarp	Belonging to the Family Dipterocarpaceae, a family of old-world tropical trees valuable for timber and resin.
Ecosystem	A natural unit consisting of organisms and their environment through which energy flows.
Endemic	Indigenous (native) or confined to a particular area.
Fauna	Native and alien animal life in a described area.
Flora	Native and alien plant life in a described area.
Hectare	A metric unit of a real measurement 100 metres by 100 metres (equal to 2.47 acres).
Mangroves	Forests that grow in saline water at or near the seashore providing soil and coastal protection and important habitats for marine life (especially as fish nurseries).
Mariculture	The intensive commercial production of species in a marine environment.
Monoculture	Commercial cultivation of the same plant species on an area of land.
Montane	Located in a mountainous area.
NTFP	Non-timber forest product (sometimes referred to as NWFP – non-wood forest product).
Old-growth forest	A fully mature forest in a primary, virgin or undisturbed state.
Primary forest	See *old-growth forest*.
Production forest	Forest designated for commercial exploitation of timber.
Protected Area	Any categorized area that is recognized in legislation for the conservation of biodiversity. It can be a terrestrial, wetland or marine area.
Protection forest	Forest that is preserved primarily for protection of the catchment and to preserve water quality.
Rain forest	Closed canopy forest occurring in areas with a pronounced wet season.

Rattan	A climbing palm of the Sub-family Calamoideae harvested for commercial purposes.
Refugium	Region where biological communities have remained largely undisturbed for very long periods of time.
Riparian vegetation	Plants growing on land immediately adjacent to streams.
Secondary forest	Forest that has not reached its final plant species composition, characterized by fast-growing trees established following forest disturbance.
Shifting cultivation	See *swidden agriculture.*
Silviculture	The cultivation and management of forests and woodlands.
Slash and burn	See swidden agriculture.
Storey	Layer or stratum of a forest.
Sustainable development	Economic growth activities implemented in such a manner that does not degrade biodiversity components (ecosystems, species and genetic resources) in quantity or quality.
Swidden agriculture	Shifting agriculture based on clearing and burning small areas of forest, with periods of fallow to restore soil fertility.
Ungulates	Hoofed mammals, such as muntjaks, the sao la, pigs, cattle, horses, rhinos.
Waterbirds	Bird species that are dependent on open water bodies or streams for all or part of their life requirements.
Watershed	The high land separating two river systems that forms the common boundary of the two catchment areas. Frequently used to mean a catchment area (see above).
Woodland	An area characterized by scattered trees, generally with less than 40% crown cover.

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ANNEXES

Annex 1. Membership of the Project Steering Committee.

1. Dr. Nguyen Ba Thu, Director, FPD – Steering Committee Chairman;
2. Mr. Nguyen Van Loi, Deputy Director, Planning and Projections Departme 7nt, MARD;
3. Mr. Vu Van Hong, Deputy Director, Finance and Accounting Department, MARD;
4. Mr. Dinh Quang Tuan, Deputy Director, Organization and Personnel Department, MARD;
5. Mr. Nguyen Hoang Lam, External Finance Department, Ministry of Finance;
6. Mr. Nguyen Dinh Huong, Deputy Director, International Cooperation Department, MARD;
7. Ms. Le Thi Thong, Deputy Director, Agricultural and Rural Development Department, MPI;
8. Mr. Le Minh Sat, Deputy Director, Agricultural Technology and Science Management Department, MOSTE; and
9. Mr Ha Cong Tuan, Deputy Director, FPD and National Director, SPAM Project.

Annex 2. Membership of the National Protected Area Working Group.

1. Mr. Tran Quoc Bao, Former Head, Nature Conservation Section, FPD, MARD – Chairman;
2. Mr. Doan Minh Tuan, Head, Office of Operations, FPD (Former Deputy-Chief of Forest Management Section, FPD);
3. Mr. Pham Quoc Vang, Former Head, Legislation and Investigation Section, FPD;
4. Mr. Luong Van Thang, Head, Organisation and Communication Section, FPD;
5. Mr. Pham Mong Giao, Wildlife Expert, Nature Conservation Section, FPD;
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7. Dr. Pham Nhat, Dean, Department of Forest Management and Protection, FUV;
8. Dr. Nguyen Hoang Nghia, Deputy Director, FSIV;
9. Mr. Tran Lien Phong, Head, Nature Conservation Section, NEA, MONRE;
10. Mr. Nguyen Duc Khang, Chairman, National Parks and Protected Areas Association;
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15. Mr. Tran Van Thieu, Deputy Director,Gia Lai PFPD;
16. Mr. Hoang Ngoc Khanh, Director, Thua Thien Hue PFPD; and
17. Mr. Nguyen Quang Hung, Director, Lao Cai PFPD.

Annex 3. Membership of the Provincial Working Groups in the pilot provinces.

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1. Mr. Ky Huu Minh, Director, Ba Ria-Vung Tau DARD - Chairman of the Group;
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3. Mr. Le Xuan Ai, Director, Con Dao National Park;
4. Mr. Vo Van Sung, Director, Binh Chau-Phuoc Buu Nature Reserve;
5. Mr. Mai Van Dung, Vice-Chairman, Xuyen Moc District People's Committee;
6. Mr. Nguyen Hoang Tung, Vice-Chairman, Con Dao District People's Committee.
7. Mr. Phan Van Vuong, Head, Administrative, Cultural and Social Section, Finance Dept.;
8. Mr. Bui Ke Nhan, Head, Statistic Registration Section, Land Administration Dept.;
9. Mr. Tran Duy Lich, Deputy Head, Economic Section, Planning and Investment Dept.;
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6. Mr. Luong Kim Tan, Lao Cai DOSTE;
7. Mr. Nguyen Manh Hung, Deputy Chief, Technical Section, Lao Cai DARD;
8. Mr. Dinh Ngoc Cam, Head, Agriculture & Rural Development Section, Sa Pa District; and
9. Mr. Ngo Le Tru, Hoang Lien Nature Reserve.

   Contact Officer: Mr. Luong Cong Hoan

Annex 4. The existing protected areas system of Vietnam.

No.	Name	Location	Area (ha)	Priority
TOTAL			**2,478,293**	
I. National Park			**883,391**	
1	Ba Be	Bac Can	7,610	Primary forest with many endemic plant species and natural lake on limestone mountain
2	Ba Vi	Ha Tay	7,377	Evergreen forest on low mountain; *Libocedrus macrolepis*
3	Bach Ma	Thua Thien Hue	22,031	Evergreen forest on low mountain; many endemic primate species, *Rheinardtia ocellata*
4	Bai Tu Long	Quang Ninh	15,738	Forest on island; many threatened terrestrial and marine animal species
5	Ben En	Thanh Hoa	16,634	Evergreen forest on low mountain; the fauna is diverse with many primate species
6	Bu Gia Map	Binh Phuoc	22,330	Evergreen forest on lowland with elephant and many ungulate mammal species
7	Cat Ba	Hai Phong	15,200	Primary forest on limestone mountain. Podocarpus fleuryi and Golden head langur
8	Cat Tien	Dong Nai, Lam Dong, Binh Phuoc	73,878	Forest in lowland; Diverse forest type. Many large mammal species such as: *Rhinoceros sondaicus annamiticus*, gaur, elephant, crocodile and many threatened and endemic bird species
9	Con Dao	Ba Ria - Vung Tau	19,998	Island forest; Con Dao Squirrel; Long-tailed macca; turtle; dugon
10	Chu Mom Ray	Kon Tum	56,621	Evergreen and semi- deciduous forest on medium mountain. Elephant, tiger, gaur, banteng and many threatened primate species
11	Chu Yang Sing	Dak Lak	58,947	Evergreen forest on high and medium mountain with many endemic coniferous and bird species
12	Cuc Phuong	Ninh Binh, Thanh Hoa, Hoa Binh	22,200	Primary forest on limestone mountain. Diverse flora and fauna; Delacour's Langur
13	Hoang Lien Son - Sapa	Lao Cai	29,845	Evergreen forest on highest mountain of Vietnam. Many threatened and endemic gymnosperm species. And precious medicinal plants; *Hylobates concolor* and endemic bird species
14	Kon Ka Kinh	Gia Lai	41,710	Evergreen forest on medium mountain with many endemic gymnosperm species. Tiger, truong son deer, Hylobated sikki and endemic bird species
15	Lo Go Sa Mat	Tay Ninh	18,765	Semi- deciduous and deciduous forest; Seasonally flooded grassland; *Pavo muntiacus*

16	Phong Nha Ke Bang	Quang Binh	86,200	Primary forest with many precious timber species on limestone mountain. Many endemic primate species; famous caves with underground rivers
17	Phu Quoc	Kien Giang	31,422	Forest on island with many forest types and precious timber trees such as: *Hopea pierrei, Podocarpus fleuryi*; migrating bird species
18	Pu Mat	Nghe An	91,113	Evergreen montane forest on high or medium mountain, Many threatened gymnosperm species and large and endemic species such as: Sao la, Giant muntjak, tiger.
19	Tam Dao	Vinh Phuc, Thai Nguyen, Tuyen Quang	36,883	Evergreen forest on medium mountain: Fokienia hodginsi, Amentotaxus argotenia; Paramesotriton deloustani (a famous endemic amphibian species) and many new reptile and amphibian species
20	Tram Chim	Dong Thap	7,588	Melaleuca forest with special wetland ecosystem. Seasonally flooded grassland with Sarus crane
21	U Minh Thuong	Kien Giang	8,509	Melaleuca forest ecosystem with many large water bird species
22	Vu Quang	Ha Tinh	55,029	Forest on high and medium mountain; *Fokienia hodginsii*; Sao la, giant muntjak, elephant
23	Xuan Son	Phu Tho	15,048	Forest on limestone mountain; Many beautiful caves and bat species
24	Xuan Thuy	Nam Dinh	7,680	Coastal mangrove ecosystem. Many migrating bird species such as Black face spoonbill. Unique Ramsar Site of Vietnam
25	Yok Don	Dak Lak	115,545	Dry Dipterocarp deciduous Forrest. Elephant and large mammal species. *Pavo muntiacus*
II. Nature conservation area			**1,388,010**	
IIa. Nature Reserve			***1,262,147***	
1	Ba Na - Nui Chua	Da Nang, Quang Nam	38,210	Evergreen forest on medium mountain; Giant muntjak, Rheinardtia ocellata
2	Son Tra Peninsula	Da Nang	4,370	Evergreen forest on peninsular: beautiful landscape; Douc Langur
3	Bac Me	Ha Giang	27,800	Forest on limestone mountain; Many endemic and precious timber tree species. Capricornis sumatraensis and many primate species
4	Binh Chau Phuoc Buu	Ba Ria Vung Tau	11,293	Dry Dipterocarp forest on coastal sandsoil. Many big bird species of Bucerotidae family
5	Bidoup-Nui Ba	Lam Dong	71,062	Evergreen montane forest on high and medium species with many gymnosperm plant and bird species
6	Cham Chu	Tuyen Quang	58,187	Evergreen forest on limestone mountain with a famous endemic primate species: Rhinopithecus avunculus

7	Cu Lao Cha m	Quang Nam	1,535	Forest on island with many Macacca mulatta
8	Du Gia	Ha Giang	24,293	Forest on mixed limestone and hill with many endemic plant species
9	Dakr ong	Quang Tri	40,526	Evergreen forest on low mountain with many large mammal and primate species. Lophura edwarsii
10	Easo	Dak Lak	22,000	Dry open Dipterocarp forest; natural grassland; gaurs and bantengs
11	Huu Lien	Lang Son	10,640	Forest on limestone mountain; Cupressus torulosus, Burretiodendron tonkinensis and musc deet
12	Ke Go	Ha Tinh	24,801	Evergreen forest on lowland; Hylobates concolor; Lophura hatinhensis, Rheinardtia ocellata
13	Khe Ro	Bac Giang	5,675	Evergreen forest on medium mountain; Fokienia hodginsii
14	Kim Hy	Bac Can	18,555	Evergreen forest on medium limestone mountain; many coniferous species and Markhamia stipulata, Burretiodendron tonkinensis; musc deer
15	Kon Cha Rang	Gia Lai	15,900	Evergreen forest on low mountain; Podocarpus imbricatus and Dacrydium pierrei; tiger and many large mammal and primate species
16	Krong Trai	Phu Yen	22,290	Dry, deciduous Dipterocarp forest and semi - decoduous forest, gaur and banteng
17	Ky Thuong	Quang Ninh	17,640	Evergreen forest on lowland. Many primate species
18	Muong Nhe	Lai Chau	182,000	Evergreen, broad-leaved forest; many large mammal species
19	Nam Ca	Dak Lak	24,555	Evergreen forest on limestone mountain; Cupressus torulosa, Rhinapithecus avunculus
20	Nam Nung	Dak Lak	10,849	Evergreen forest on low mountain with many threatened and precious plant species; Douc Langur, crocodile and natural lake
21	Ngoc Linh Kon Tum	Kon Tum	41,424	Evergreen forest on high and medium mountain. Panax vietnamensis, Pinus dalatensis; tiger, truong son deer, Giant muntjak; endemic and new bird species
22	Nui Ong	Binh Thuan	35,377	Evergreen forest on medium mountain; Elephant and many large mammal species
23	Nui Dai Binh	Lam Dong	5,000	
24	Nui Cam	An Giang	1,500	
25	Nui Pia Oac	Cao Bang	10,000	
26	Pa Ca - Hang Kia	Hoa Binh	7,091	
27	Phong Quang	Ha Giang	18,397	Forest on limestone mountain; Burretiodendron; Garcinia fagraoides; many primate species
28	Phong Die n	Thua Thien Hue	41,548	Evergreen forest on low mountain; Lophura edwardsii. tiger, giant muntjak, gaur, primate

				species
29	Phu Canh	Hoa Binh	14,461	Evergreen forest on low mountain; high biodiversity
30	Phuoc Binh	Ninh Thuan	19,814	Evergreen forest on medium mountain. Fokienia hodginsi and many other threatened and endemic gymnosperm species
31	Pu Hoat	Nghe An	67,934	Evergreen forest on high and medium mountain; Folienia hodginsii, Cunninghamia konishii, Giant muntjak
32	Pu Hu	Thanh Hoa	35,089	Evergreen forest on low mountain; Chukrasia tabularis, Burretiodendron tonkinensis, Podocarpus neriifolius
33	Pu Huong	Nghe An	50,075	Evergreen forest on high and medium mountain; Many endemic and threatened gymnosperm species; Sao la and large mammal species
34	Pu Luong	Thanh Hoa	17,662	Forest on limestone mountain. Delacour 's Langur and other primate species
35	Song Thanh	Quang Nam	93,249	Evergreen forest on medium mountain; truong son deer, Giant muntjak, tiger and endemic primate species
36	Sop Cop	Son La	27,886	Evergreen forest on limestone mountain; high biodiversity
37	Ta Kou	Binh Thuan	17,823	Evergreen forest in low land with Dipterocarp dominant species
38	Tay Con Linh	Ha Giang	40,344	Forest limestone on area; high biodiversity
39	The West of Yen Tu	Bac Giang	15,411	
40	Thanh Phu	Ben Tre	4,510	Mangrove forest with many water bird species
41	Than Sa – Phuong Hoang	Thai Nguyen	11,220	
42	Thuong Tien	Hoa Binh	7,308	Forest on limestone mountain, Delacour 's Langur
43	Trung Khanh	Cao Bang	3,000	
44	Xuan Lien	Thanh Hoa	23,610	Evergreen forest on limestone; Fokienia hodginsii; gaur, Roosevelt Deer
45	Xuan Nha	Son La	38,069	Forest on limestone mountain with many threatened primate species
46	Yen Tu	Quang Ninh, Bac Giang	3,040	Forest on limestone mountain; Podocarpus nagi and many Angiosperm species
IIb. Species/habitat protected area			***125,863***	
1	Dat Mui – Bai Boi	Ca Mau	4,461	Mangrove forest with many migrating bird species
2	EaRal	Dak Lak	50	Water pine (*Glyptostrobus pensilis*)

3	Kien Luong	Kien Giang	14,605	Seasonally flooded grassland with high biodiversity; many water bird species
4	Lung Ngoc Hoang	Can Tho	6,000	Melaleuca and mangrove forest; water bird species
5	Mo Re-Bac Son	Lang Son	4,000	Forest on limestone mountain; musc deer
6	Na Hang	Tuyen Quang	41,930	Limestone forest, Podocarpus, and Tokin snub-nosed monkey, *Hylobates concolor*
7	Rung Kho Nui Chua	Ninh Thuan	35,553	Typical dry forest
8	The bird yard of Bac Lieu	Bac Lieu	127	Water bird population
9	Tam Quy	Thanh Hoa	500	Evergreen forest on lowland with Madhuca pasquieri dominant tree species
10	Tien Hai	Thai Binh	12,500	Coastal mangrove forest with many migrating bird species
11	Trap Kso	Dak Lak	100	Water pine (Glyptostrobus pensilis)
12	Van Long	Ninh Binh	2,643	Limestone and wetland ecosystems, the largest Delacour Langur population of Vietnam
13	Vo Doi	Ca Mau	3,394	Melaleuca forest ecosystem with many large water bird species
III. Landscape protected area			**206,892**	
1	An Toan Khu	Thai Nguyen	18,690	
2	Ai Chi Lang	Lang Son	1,000	
3	Ba To	Binh Dinh	6,770	
4	Bai Chay	Quang Ninh	562	
5	The North of Hai Van	Thua Thien Hue	14,547	Beautiful landscape
6	Thac Ba Islands	Yen Bai	5,000	
7	Ha Long IsLands	Quang Ninh	1,000	
8	Chang Riec	Tay Ninh	11,488	
9	Boi Loi Base	Tay Ninh	2,000	
10	Con Son Kiep Bac	Hai Duong	1,477	Pine forest; historical relic related to national Hero Nguyen Trai
11	Duong Minh Chau	Tay Ninh	5,000	
12	Ba Trieu Temple	Thanh Hoa	300	
13	Hung Temple	Phu Tho	285	Historical relic related to Hung King

14	Dao Ho Song Da	Hoa Binh	3,000	
15	Deo Ca – Hon Nua	Phu Yen	8,876	Beautiful landscape and coastal evergreen forest
16	Do Son	Hai Phong	267	
17	Ghenh Rang	Binh Dinh	2,616	Beautiful landscape
18	Cam Son Lake	Bac Giang	15,000	
19	Lac Lake	Dak Lak	12,744	Natural lake on high Plateau, beautiful landscape
20	Nui Coc Lake	Thai Nguyen	6,000	
21	Hoa Lu	Ninh Binh	5,624	Forest on limestone mountain; historical site related to Le and Dinh Kings
22	Hon Chong	Kien Giang	3,495	Beautiful landscape on limestone area
23	Huong Son	Ha Tay	4,355	Forest on limestone mountain; famous Huong (Perfume) Pagoda
24	Kim Binh	Tuyen Quang	1,937	Historical relic related to Second conference of Communist Party of Vietnam
25	Lam Son	Thanh Hoa	300	
26	The South of Hai Van	Da Nang	10,850	Beautiful landscape
27	Ngoc Trao	Thanh Hoa	300	
28	Ngu Hanh Son	Da Nang	400	
29	Ba Den Mountain	Tay Ninh	2,000	
30	Ba Ra Mountain	Binh Phuoc	940	
31	Nui Chung	Nghe An	600	Historical relic related to President Ho Chi Minh
32	Nui Thanh	Quang Nam	1,500	
33	Pac Po	Cao Bang	2,784	Forest on limestone mountain; historical site related to President Ho Chi Minh
34	Da Lat Pine Forest	Lam Dong	32,051	Pine forest, surrounding famous Da Lat Resort
35	Tan Trao	Tuyen Quang	6,633	Evergreen forest and historical site related to Resistance against French Colony
36	Vuc Mau	Nghe An	24,842	Beautiful landscape
37	Yen The	Bac Giang	1,883	Historical site, related to national Hero Hoang Hoa Tham

Annex 5: Proposed protected areas categorised under the new system

TT	Name	Location	Area	Objectives of protection
I. National Park				
1	Ba Be	Bac Can	7,610	Primary forest with many endemic plant species and natural lake on limestone mountain
2	Ba Vi	Ha Tay	7,377	Evergreen forest on low mountain; Libocedrus macrolepis
3	Bach Ma	Thua Thien Hue	22,031	Evergreen forest on low mountain; many endemic primate species, Rheinardtia ocellata
4	Bai Tu Long Marine NP	Quang Ninh	15,738	Forest on island; many threatened terrestrial and marine animal species
5	Ben En	Thanh Hoa	16,634	Evergreen forest on low mountain; the fauna is diverse with many primate species
6	Bi Dup-Nui Ba	Lam Dong	71,062	Evergreen montane forest on high and medium species with many gymnosperm plant and bird species
7	Bu Gia Map*	Binh Phuoc	22,330	Evergreen forest on lowland with elephant and many ungulate mammal species
8	Cat Ba	Hai Phong	15,200	Primary forest on limestone mountain. Podocarpus fleuryi and Thachypethicus francoisi poliocephalus
9	Cat Tien	Dong Nai, Lam Dong, Binh Phuoc	73,878	Forest in lowland; Diverse forest type. Many large mammal species such as : Rhinoceros sundaicus, gaur, elephant, crocodile and many threatened and endemic bird species
10	Chu Yang Sin*	Dak Lak	54,227	Evergreen forest on high and medium mountain with many endemic coniferous and bird species
11	Chu Mom Ray*	Kon Tum	48,658	Evergreen and semi- deciduous forest on medium mountain. Elephant, tiger, gaur, banteng and many threatened primate species
12	Con Dao Marine NP	Ba Ria – Vung Tau	5,998	Forest in Island, Con Dao Squirrel; Con Dao Long-tailed Macaque (Macaca fascilularsis); Chelone; Hasbill; Dugong
13	Cuc Phuong	Ninh Binh	22,200	Primary forest on limestone mountain. Diverse flora and fauna; Delacour Langur
14	Dakrong*	Quang Tri	40,526	Evergreen forest on low mountain with many large mammal and primate species. Lophura edwarsii
15	Hoang Lien Son Sapa and Van Ban*	Lao Cai	70,000	Evergreen forest on highest mountain of Vietnam. Many threatened and endemic gymnosperm species. and precious medicinal plants; Hylobates concolor and endemic bird species
16	Hon Mun Marine	Khanh Hoa	105,000	Diverse coral ecosystem. Many threatened and endemic marine fish species

TT	Name	Location	Area	Objectives of protection
	NP*			
17	Kon Ka Kinh*	Gia Lai	41,710	Evergreen forest on medium mountain with many endemic gymnosperm species. Tiger, truong son deer, Hylobated sikki and endemic bird species
18	Lo Go Sa Mat*	Tay Ninh	16,754	Semi- deciduous and deciduous forest; Seasonally flooded grassland; Pavo muntiacus
19	Dat Mui - Bai Boi*	Ca Mau	10.000	Mangrove forest with many migrating bird species
20	Phong Nha - Ke Bang	Quang Binh	86,200	Primary forest wit h many precious timber species on limestone mountain. Many endemic primate species; famous caves with underground rivers
21	Phu Quoc	Kien Giang	31,422	Forest on island with many forest types and precious timber trees such as : Hopea pierrei, Podocarpus fleuryi; migrating bird species
22	Pu Mat	Nghe An	91,113	Evergreen montane forest on high or medium mountain, Many threatened gymnosperm species and large and endemic species such as : Sao la, Giant muntjak, and tiger.
23	Song Thanh*	Quang Nam	93,249	Evergreen forest on medium mountain; truong son deer, Giant muntjak, tiger and endemic primate species
24	Tam Dao	Vinh Phuc, Thai Nguyen, Tuyen Quang	36,883	Evergreen forest on medium mountain : Fokienia hodginsi, Amentotaxus argotenia; Paramesotriton deloustani (a famous endemic amphibian species) and many new reptile and amphibian species
25	Ta Dung*	Dak Lak	18,893	Evergreen forest on medium mountain; many ungulate mammal species
26	Tay Con Linh*	Ha Giang	40,344	Forest limestone on area; high biodiversity
27	Tram Chim Wetland NP	Dong Thap	7,588	Melaleuca forest with special wetland ecosystem. Seasonally flooded grassland with Sarus crane
28	U Minh Thuong Wetland NP	Kien Giang	8,509	Melaleuca forest ecosystem with many large water bird species
29	Vu Quang*	Ha Tinh	55,950	Forest on high and medium mountain; Fokienia hodginsii; Sao la, giant muntjak, elephant
30	Xuan Son	Phu Tho	15.048	Forest on limestone mountain; Many beautiful caves and bat species
31	Xuan Thuy Wetland National Park*	Nam Dinh	7,680	Coastal mangrove ecosystem. Many migrating bird species such as Black face spoon bill. Unique Ramsar Site of Vietnam
32	Yok Don	Dak Lak	115.544	Dry Dipterocarp deciduous Forest. Elephant and large mammal species' Pavo muntiacus
II. Nature Reserve				
1	A Yun Pa*	Gia Lai	30,000	Dry Dipterocarp deciduous forest, semi deciduous forest; many threatened and endemic

TT	Name	Location	Area	Objectives of protection
				primate species; Pavo muntiacus, Lophura
2	An Toan*	Binh Dinh	26,044	
3	Ba Na – Nui Chua	Da Nang	38,210	Evergreen forest on medium mountain; Giant muntjak, Rheinardtia ocellata
4	Son Tra Peninsula	Da Nang	4,370	Evergreen forest on peninsular: beautiful landscape; Douc Langur
5	Bac Me	Ha Giang	27,800	Forest on limestone mountain; Many endemic and precious timber tree species. Capricornis sumatraensis and many primate species
6	Bat Dai Son*	Ha Giang	10,000	Evergreen forest on limestone mountain with many threatened and endemic gymnosperm plant species
7	Binh Chau – Phuoc Buu	Ba Ria – Vung Tau	11,293	Dry Dipterocarp forest on coastal sandsoil. Many big bird species of Bucerotidae family
8	Cham Chu*	Tuyen Quang		Evergreen forest on limestone mountain with a famous endemic primate species : Rhinapithecus avunculus
9	Chu Prong*	Gia Lai	46,925	
10	Cu Lao Cham Marine NR	Quang Nam	6,719	Forest on island with many Macacca mulatta
11	Du Gia	Ha Giang	24,293	Forest on mixed limestone and hill with many endemic plant species
12	Easo	Dak Lak	22,000	Dry open Dipterocarp forest; natural grassland; gaurs and bantengs
13	Hoang Lien Son-Phong Tho*	Lao Cai	19.739	Evergreen forest on high mountain; Tsuga sp., Abies pindrow, precious medicinal plant; many endemic bird species
14	Huu Lien	Lang Son	10,640	Forest on limestone mountain; Cupressus torulosus, Burretiodendron tonkinensis and musc deer
15	Ke Go	Ha Tinh	24,801	Evergreen forest on lowland; Hylobates concolor; Lophura hatinhensis, Rheinardtia ocellata
16	Khe Net*	Quang Binh	22,000	Evergreen forest on low land; Many endemic primate species. Lophura hatinhensis
17	Khe Ro	Bac Giang	5,675	Evergreen forest on medium mountain; Fokienia hodginsii
18	Pha Tam Giang Wetland NR	Thua Thien Hue	4189	Wetland ecosystem with high biodiversity rich in marine grasse species
19	Kim Hy	Bac Can	18,555	Evergreen forest on medium limestone mountain; many coniferous species and

TT	Name	Location	Area	Objectives of protection
20	Kon Cha Rang	Gia Lai	15,900	Markhamia stipulata, Burretiodendron tonkinensis; musc deer Evergreen forest on low mountain; Podocarpus imbricatus and Dacrydium pierrei; tiger and many large mammal and primate species
21	Krong Trai	Phu Yen	22,290	Dry, deciduous Dipterocarp forest and semi - decoduous forest, gaur and banteng
22	Ky Thuong	Quang Ninh	17,640	Evergreen forest on lowland. Many primate species
23	Muong Nhe	Lai Chau	182,000	Evergreen, broad-leaved forest; many large mammal species
24	Na Hang	Tuyen Quang	41.930	Evergreen forest on limestone mountain; Cupressus torulosa, Rhinapithecus avunculus
25	Nam Ca	Dak Lak	24,555	Evergreen forest on low mountain with many threatened and precious plant species; Douc Langur, crocodile and natural lake
26	Nam Nung	Dak Lak	10,849	Evergreen forest; Pinus kesiya, Hopea pierrei; ungulala large mammal species
27	Ngoc Linh Kon Tum	Kon Tum	41,424	Evergreen forest on high and medium mountain. Panax vietnamensis, Pinus dalatensis; tiger, Truong son deer, Giant muntjak; endemic and new bird species
28	Ngoc Linh Quang Nam	Quang Nam	18,430	Evergreen forest on high and medium forest. Panax vietnamensis, Pinus dalatensis; Tiger, Truong son Deer, Giant muntjak; endemic and new bird
29	Ngoc Son-Ngo Luong	Hoa Binh	17,073	Evergreen forest on limestone mountain; Delacour Langur and many threatened primate species
30	Nui Giang Man*	Ha Tinh, Quang Binh	40,000	Evergreen forest on high mountain; Many endemic gymnosperm forest
31	Nui Ong	Binh Thuan	35,377	Evergreen forest on medium mountain; Elephant and many large mammal species
32	Pa Co - Hang Kia	Hoa Binh	7.091	Evergreen forest on limestone mountain; Pinus kwangtungensis; Paphiopedilum spp.
33	Phong Quang	Ha Giang	18,397	Forest on limestone mountain; Burretiodendron; Garcinia fagraoides; many primate species
34	Phong Dien	Thua Thien Hue	41,548	Evergreen forest on low mountain; Lophura edwardsii. tiger, giant muntjak, gaur, primate species
35	Phu Canh	Hoa Binh	5,647	Evergreen forest on low mountain; high biodiversity
36	Phu Ninh	Quang Nam	23,000	Forest and flora representative for transition zones
37	Phuoc Binh	Ninh Thuan	7,400	Evergreen forest on medium mountain. Fokienia hodginsi and many other threatened and endemic gymnosperm species
38	Pu Hoat	Nghe An	67,934	Evergreen forest on high and medium mountain; Folienia hodginsii, Cunninghamia konishii, Giant muntjak

TT	Name	Location	Area	Objectives of protection
39	Pu Hu	Thanh Hoa	35,089	Evergreen forest on low mountain; Chukrasia tabularis, Burretiodendron tonkinensis, Podocarpus neriifolius
40	Pu Huong	Nghe An	50,075	Evergreen forest on high and medium mountain; Many endemic and threatened gymnosperm species; Sao la and large mammal species
41	Pu Luong	Thanh Hoa	17,662	Forest on limestone mountain. Delacour Langur and other primate species
42	Nui Chua dry forest	Ninh Thuan	16.775	
43	Sop Cop	Son La	27,886	Evergreen forest on limestone mountain; high biodiversity
44	Tam Tao	Bac Can	9,000	Evergreen forest on limestone, Snub-nosed monkey
45	Ta Kou	Binh Thuan	17,823	Evergreen forest in low land with Dipterocarp dominant species
46	Thanh Phu Wetland	Ben Tre	4,510	Mangrove forest with many water bird species
47	Thuong Tien	Hoa Binh	7,308	Forest on limestone mountain, Delacour Langur
48	Tri An	Dong Nai	50,000	Evergreen Dipterocarp forest on lowland, Many large mammals : Elephant, Gaur, primate species, etc.
49	Xuan Lien	Thanh Hoa	23,610	Evergreen forest on limestone; Fokienia hodginsii; gaur, Roosevelt Deer
50	Xuan Nha	Son La	38,069	Forest on limestone mountain with many threatened primate species
51	Van Ban	Lao Cai	40.000	Evergreen montane forest, many Gymnosper species, gibbon
52	West Yen Tu	Bac Giang	16.466	Forest on limestone mountain; Podocarpus nagi
53	Yen Tu	Quang Ninh	3,040	Forest on limestone mountain; Podocarpus nagi and many Angiosperm species
III. Habitat/Species Management area				
1	Che Tao (Mu Cang Chai)*	Yen Bai	15.000	Evegreen forest on medium mountain, Fokienia hodginsii, Hylobates concolor
2	EaRal	Dak Lak	50	Water pine (Glyptostrobus pensilis)
	Bach Long Vi (Marine)*	Hai Phong	90,000	Island district with diverse coral reef
4	Co To (Marine)*	Quang Ninh	2,490	Marine park with high biodiversity
5	Con Co (Marine) *	Quang Tri	2.490	Primary coral reef, with high biodiversity
6	Hai Van – Son Tra	Thua Thien Hue	27,416	Diverse marine fauna

TT	Name	Location	Area	Objectives of protection
7	(Marine)* Hon Cau (Marine) *	Binh Thuan	12,500	Primary coral reef with high biodiversity, many marine tortoise species
8	Hon Me Marine)*	Thanh Hoa	6,336	A large area of coral reef with 10 new fish species of Vietnam
9	Kien Luong (Wetland)*	Kien Giang	7,624	Seasonally flooded grassland with high biodiversity; many water bird species
10	Ly Son (Marine)*	Quang Ngai	7,925	Coral reef developed on volcano relic; many threatened marine animals
11	Phu Quoc (Marine)*	Kien Giang	33,657	Including an Thoi islands; high biodiversity, marine tortoises and Dugong
12	Phu Qui (Marine)*	Binh Thuan	18,980	Diverse fishery Resources and high production. Bases for fishery and marine ecotourism;
13	Truong Sa (Marine)*	Khanh Hoa	16,000,000	Biodiversity Center in international- level
14	Thai Binh Estuary (wetland),Tien Lang District*	Hai Phong	2,000	Protected Mangrove with water and migrating bird species
15	Tien Yen Estuary (Wetland)*	Quang Ninh	5,000	Protected Mangrove with water and migrating bird species
16	Van Uc Estuary (wetland)*	Hai Phong	1,500	Protected Mangrove with water and migrating bird species
17	Nghia Hung District (Wetland) *	Nam Dinh	7,600	Protected Mangrove with water and migrating bird species
18	Lang Sen (Wetland) *	Long An	1,124	Melaleuca forest ecosystem; water and magrating bird species
19	Lung Ngoc Hoang (Wetland)	Can Tho	6,000	Melaleuca and mangrove forest; water bird species
20	Mo Re-Bac Son	Lang Son	2,416	Forest on limestone mountain; musc deer
21	Bac Lieu Bird Colony	Bac Lieu	127	Water bird population
22	Tam Quy	Thanh Hoa	500	Evergreen forest on lowland with Madhuca pasquieri dominant tree species
23	Thai Thuy (Wetland)	Thai Binh	13,696	Water bird population
24	Tien Hai (Wetland)	Thai Binh	12,500	Coastal mangrove forest with many migrating bird species

TT	Name	Location	Area	Objectives of protection
25	Trap Kso (Wetland)	Dak Lak	100	Water pine (Glyptostrobus pensilis)
26	Van Long (Wetland)	Ninh Binh	3,500	Limestone and wetland ecosystems, the largest Delacour Langur population of Vietnam
27	Vo Doi (Wetland)	Ca Mau	3,394	Melaleuca forest ecosystem with many large water bird spe cies
28	Xuan Lac*	Bac Can	5,000	Evergreen forest on limestone mountain with Trachipeticus avunculus
IV. Protected Landscape/Seascape				
1	North Hai Van	Thua Thien Hue	14,547	Beautiful landscape
2	Chang Riec	Tay Ninh	11,659	Historical relic
3	Con Son Kiep Bac	Hai Duong	1,477	Pine forest; historical relic related to national Hero Nguyen Trai
4	Hung Temple	Phu Tho	285	Historical relic related to Hung King
5	Deo Ca-Hon Nua	Phu Yen	8,876	Beautiful landscape and coastal evergreen forest
6	Ghenh Rang	Binh Dinh	2,616	Beautiful landscape
7	Hang Phuong Hoang	Thai Nguyen	6,000	Forest on limestone mountain with many caves
8	Lac Lake	Dak Lak	12,744	Natural lake on high Plateau, be autiful landscape
9	Hoa Lu	Ninh Binh	5,624	Forest on limestone mountain; historicalsite related to Le and Dinh Kings
10	Hon Chong	Kien Giang	3,495	Beautiful landscape on limestone area
11	Huong Son	Ha Tay	4,355	Forest on limestone mountain; famous Huong (Perfume) Pagoda
12	Kim Binh	Tuyen Quang	1,937	Historical relic related to Second conference of Communist Party of Vietnam
13	South of Hai Van	Da Nang	10,850	Beautiful landscape
14	Nui Chung	Nghe An	600	Historical relic related to President Ho Chi Minh
15	Pac Bo	Cao Bang	2,784	Forest on limestone mountain; historical site related to President Ho Chi Minh
16	Da Lat Pine Forest	Lam Dong	32,051	Pine forest, surrounding famous Da Lat Resort
17	Tan Trao	Tuyen Quang	6,633	Evergreen forest and historical site related to Resistance against French Colony
18	Vuc Mau	Nghe An	24,842	Beautiful landscape
19	Yen The	Bac Giang	1,883	Historical site, related to national Hero Hoang Hoa Tham

Note: * Proposed new PAs or Proposed category change PAs

Annex 6. Categorization of protected areas

THE CURRENT SYSTEM AND ITS PROBLEMS

Vietnam's protected area categorisation system was founded in 1986 with 3 categories: National Park, Nature Reserve, and Cultural, Historical and Environment Area. Its development resulted from application of the IUCN's recommended categorisations for PA systems (IUCN, 1978) adapted to Vietnam's requirements. It suited the level of knowledge, management and information sources for nature and biodiversity in Vietnam during the 1980s.

Based on those categories, Vietnam carried out management and established Regulations for the foundation and development of PAs. Significant achievements have been made. However, in recent years with changes in conservation awareness, management standards and information from research results on forest ecology and biodiversity, the PA system of Vietnam has shown some shortcomings as follows:

- The former PA system is suited only to forest ecosystems and it does not consist of all ecosystems that need to be protected such as wetlands, marine and island ecosystems, etc. Areas with beautiful scenery or natural monuments without forest also are not specifically included in the system.

- The concept of "conservation and development coordination" is not recognised in the current system. All activities for non-wood forest product exploitation, marine product gathering and hunting by people, even local people living in or around Special-use Forests are prohibited, though their activities, if carefully managed, may not lead to a significant influence on protected components.

- There is no protected area where people can sustainably and legally use natural resources. Therefore we haven't got support and active participation from the local authority and people. Many of our management plans or investment plans for Special-use Forests have only a theoretical meaning and are of little use in practice.

- Protected components of the third category (Cultural, Historical and Environment Areas) are not natural ones. Hence there is an overlap for objectives and management of this category. In the new PA categorization system, natural elements are the main protected components and cultural or historical components would be managed separately by the Ministry of Culture and Information.

- In the past, the Ministry of Agriculture and Rural Development managed the Special-use Forest system. When the protected area system includes other unforested ecosystems this will cause an insufficiency in management.

PRINCIPLES FOR PROTECTED AREA CATEGORIZATION AND CRITERIA

Principles for protected area categorization

Categorization of a protected area system has to be based on the following principles:

a. Scientific principle. As with protected area categories of IUCN and other countries, PA categories of Vietnam also have four main components for protection:

- Outstanding and representative ecosystems of Vietnam.
- Nationally and globally threatened plant and animal species
- Specific habitats of threatened or endemic plant and animal species
- Natural landscape/seascape with significant aesthetic, ecological or cultural value and often with high biodiversity.

b. Legal principle. A system of PA categories has to be based in law and on environment and nature conservation policies of the Vietnam Government. Legislation can be amended or new legislation promulgated to accommodate new policy directions.

c. Practical principle. The terms used in the proposed system of PA categories must be easy to understand with clear criteria for definitions and be practical to implement. Categorization must consider management capacity and existing information on the nature and biodiversity of Vietnam. However, the desired situation should not be limited by current allocations of resources as these can be changed.

d. Co-operation principle. Protected area categorization system of Vietnam mainly is to be based on the IUCN's 1994 protected area categories but will be adapted to meet Vietnam's requirements.

e. Community benefit principle. The system of PA categories has to strengthen the involvement and support of communities and people living in or around protected areas. Lacking this involvement and support, the PA protection cannot be successful.

THE NEW SYSTEM OF PROTECTED AREA CATEGORIES FOR VIETNAM

The new PA Categorization System of Vietnam consists of four categories as follows:

- National Park
- Nature Reserve
- Habitat and Species Management Area
- Protected Landscape or Seascape

CATEGORY I. National Park: Protected area managed mainly for ecosystem protection, research, environment education and recreation.

Definition

A National Park is a natural area of land and/or sea, of sufficient area for protection of one or more specific, unmodified or slightly modified ecosystems and their endemic or threatened plant and animal species for present and future generations. A National Park provides a foundation for spiritual, scientific, educational, recreation and low impact ecotourism opportunities.

Objectives of management

- ✍ To maintain, in a natural state, representative examples of ecosystems, biotic communities, species and genetic resources and to provide ecological stability and diversity.
- ✍ To protect natural and scenic areas of national and international significance for spiritual, scientific, educational, recreational or ecotourism purposes.
- ✍ To implement scientific research on ecology, biology and conservation.
- ✍ To manage visitor use for inspirational, educational, cultural, recreational and ecotourism purposes at a level that will maintain the area in a natural state (low impact activities). Only new development directly supporting management (such as guard posts, access trails, etc.) is permitted inside the National Park boundary.
- ✍ To eliminate and thereafter prevent exploitation or people's occupation inimical to the purposes of designation as a national park.
- ✍ To maintain respect for the ecological, geomorphological, sacred or aesthetic attributes which warranted national park classification.
- ✍ To take into account the needs of ethnic minority people, including subsistence resource use, in so far as these will not adversely affect the other objectives of management.
- ✍ To deliver such benefits to people living within and around the designated area as are totally consistent with the other objectives of management.

Criteria for selection

- o The area should contain one or more representative samples of major natural regions or marine systems or scenic areas of special national and international significance;
- o The area should contain plant and animal or reef species, habitats and geomorphological sites of special spiritual, scientific, educational, and recreational or ecotourism significance.
- o Eac4h National Park should have at least 2 endemic plant and animal species or more than 10 threatened species listed in the Red Data Book of

Vietnam (except for MPAs because a Red Data Book does not exist for reef species).

- The total area should be large enough to be ecologically sustainable for the foreseeable future (more than 7,000 ha for terrestrial systems, 5,000 ha for marine areas and 3,000 ha for wetlands, in which the natural ecosystems with high biodiversity should be at least 70% of the total area).
- A national park should contain an area (where possible preferably in excess of 10,000 ha) zoned as a Strict Preservation Zone (no development permitted).
- The ratio of residential and agricultural land to PA area is less than 5%.
- National Parks are declared by Government level.

Organizational Responsibility

- ✍ For National Parks situated in the territory of two or more provinces, the best management unit is at Central level (Ministry of Agriculture & Rural Development and/or Ministry of Fisheries). National Parks can be managed by provincial Authorities if they have management capacity and can receive active support from related Ministries and PPCs.

- ✍ The Investment Plan and the Management Plan for a National Park must be approved by Government.

Equivalent category in the IUCN, 1994 system: Category II - National Park.

CATEGORY II. Nature Reserve: Protected area managed mainly for ecosystem or species protection, research, monitoring, recreation and environmental education.

Definition

A Nature Reserve is a natural area of land and/or sea for protection of unmodified or slightly modified ecosystems and their endemic or threatened plant and animal species for present and future generations. A Nature Reserve also contains specific natural and/or cultural features.

Management objectives

- ✍ To maintain established ecological process and safeguard structural landscape features;
- ✍ To secure examples of natural and scenic areas of national significance for spiritual, scientific, educational, recreational or ecotourism purposes;
- ✍ To manage visitor use for inspirational, educational, cultural, recreational and ecotourism purposes at a level that will maintain the area in a natural or near natural state. (New developments may be inside the nature reserve boundary but must be compatible with the other objectives stated);

- ✍ To protect or preserve in perpetuity specific natural features because of their natural significance, unique or representational quality, and/or spiritual or cultural significance; and
- ✍ To limit negative actions of humans on the environment and nature.
- ✍ To eliminate and thereafter prevent exploitation or people's occupation inimical to the purposes of designation as a nature reserve.
- ✍ To deliver such benefits to people living within and around the designated area as are totally consistent with the other objectives of management.

Criteria for selection

- ✍ The area should contain plant and animal or reef species, habitats and geomorphological sites of special spiritual, scientific, educational, and recreational or ecotourism significance.
- ✍ The area should have at least 1 endemic plant and animal species or 5 threatened species listed in Red Data Book of Vietnam (except for MPAs because a Red Data Book does not exist for reef species).
- ✍ The area should have enough capacity to develop environment education and ecotourism on a scale that does not have large impacts on the protection objectives.
- ✍ The minimum total area of a Nature Reserve is 5,000 ha for terrestrial systems, 3,000 ha for marine areas and 1,000 ha for wetlands, in which the natural ecosystems with high biodiversity should be at least 70% of the area.
- ✍ The ratio of residential and agricultural land to PA area is less than 5%.
- ✍ Nature Reserves are declared by Government level or Ministry or Provincial level.

Organizational Responsibility

- ✍ For nature reserves situated in the territory of two or more provinces, the best management unit is at Central level (Ministry of Agriculture and Rural Development and/or Ministry of Fisheries). All other nature reserves will be managed by provincial level departments and can receive management and technical support from related Ministries.
- ✍ The Investment Plan and the Management Plan for a Nature Reserve must be approved by the relevant line Ministry.

Equivalent category in the IUCN, 1994 System: No equivalent but similar to Category III – Natural Monument.

CATEGORY III. Habitat and Species Management Area Protected area managed mainly for environment and biodiversity conservation through management intervention.

Definition

An area of land or sea subject to active intervention for management purposes so as to ensure the maintenance of habitats and/or to meet the requirements of

threatened plant or animal species, including reef species, for the long term survival of their populations.

Management objectives

- To secure and maintain the habitat conditions necessary to protect significant species, groups of species, biotic communities or physical features of the environment where these require specific human manipulation for optimum management;
- To facilitate scientific research and environmental monitoring as primary activities associated with sustainable resource management;
- To develop limited areas for public education and appreciation of the characteristics of the habitats concerned and of the work of wildlife management and nature conservation;
- To eliminate and thereafter prevent exploitation or occupation inimical to the purpose of designation; and
- To deliver such benefits to people living within and around the designated area as are totally consistent with the other objectives of management.

Criteria for selection

- The area should play an important role in the protection of nature and the survival of species (incorporating, as appropriate, breeding areas, wetland, coral reefs, estuaries, and grasslands , forests, spawning areas, seagrass beds or meadows).
- The area should be one where the protection of the habitat is essential to the well-being of nationally or locally important flora, or to resident or migratory fauna.
- The area should have at least 1 endemic plant and animal species or more than 3 threatened species listed in Red Data Book of Vietnam (except for MPAs).
- Conservation of these habitats and species should depend upon active intervention by the management authority, if necessary through habitat manipulation.
- The size of the area should depend on the habitat requirement of the species to be protected and may range from quite small (e.g. if protection of an invertebrate species is the objective) to very extensive but normally at least 1000 ha in which the natural ecosystem is more than 50% of the area.
- The ratio of residential and agricultural land to PA area is less than 10%.
- This PA category is declared by Government level or Ministry or Provincial level.

Organizational Responsibility

- Habitat and species management areas will be the responsibility of a relevant provincial department but may be managed by a district authority.

- ✍ Investment Plan and Management Plans must be approved by the relevant Ministry or by the Provincial People's Committee.

Equivalent category in the IUCN, 1994 System: Category IV. - Habitat/Species Management Area

CATEGORY IV. Protected Landscape/Seascape: Protected area managed mainly for landscape or seascape conservation and recreation.

Definition

Area of land, with wetland, coast and sea as appropriate, where the interaction of people and nature over time has produced an area of distinctive character with significant aesthetic, ecological and/or cultural and historical value, and sometimes with high biological value. Safeguarding the integrity of this traditional interaction is vital to the protection, maintenance and evolution of such an area.

Management Objectives

- ✍ To maintain the harmonious interaction of nature and culture through the protection of landscape and/or seascape and the continuation of traditional land and aquatic/marine uses, building practices and social and cultural manifestations.
- ✍ To support lifestyles and economic activities which are in harmony with nature and the preservation of the social and cultural fabric of the communities concerned.
- ✍ To maintain the diversity of landscape and habitat and of associated species and ecosystems.
- ✍ To eliminate where necessary, and thereafter prevent, land uses and activities that are inappropriate in scale and /or character.
- ✍ To provide opportunities for public enjoyment through recreation and tourism appropriate in type and scale to the essential qualities of the areas.
- ✍ To encourage scientific and educational activities which will contribute to the long-term well-being of resident populations and to the development of public support for the environmental protection of such areas.
- ✍ To bring benefits to, and to contribute to welfare of, the local community through the provision of natural products (such as forest and fisheries products) and services (such as clean water or income derived from sustainable forms of tourism).
- ✍ Where relevant, to provide for fisheries activities in zones, which is consistent with the other objectives of management.

Criteria for selection

- ✍ The area should possess a landscape and/or coastal or island seascape of high scenic quality, with diverse associated habitats, flora and fauna along with

manifestation of unique or traditional resource-use patterns and social organization as evidenced in human settlements and local customs, livelihoods and beliefs;

- ✍ The area should have scenic beauty and contain significant historical and/or cultural heritage with educational and ecotourism opportunities within its normal lifestyle and economic activities;
- ✍ The area may or may not contain natural ecosystems and threatened plant and animal species; and
- ✍ The size of the area is at least 500 ha.
- ✍ The ratio of residential and agricultural land to PA area is less than 10%.
- ✍ This PA category is declared by Government level or Ministry or Provincial level.

Organizational Responsibility

- ✍ Protected Landscape/Seascape will be managed by a provincial department with the participation of the district authority and people.
- ✍ Investment Plans and Management Plans must be approved by the relevant Ministry or the Provincial Peoples' Committee.

Equivalent category in the IUCN, 1994 system: Category V. Protected Landscape or Seascape.

Summary of Management Objectives of PA Categories

Objectives relevant to each PA category of Vietnam are given in the table below. It is important to note that the difference between the categories of National Park and Nature Reserve are not closely related to differences in objectives. They are better understood by the relatively lower level of overall conservation value accorded to nature reserves that result as a consequence of:

- ✍ The usually smaller size of nature reserves,
- ✍ The fewer numbers of threatened species of plants, animals and habitats conserved in that space; and
- ✍ The recognition that these areas have a generally lower biodiversity conservation value than national parks.

As a result, a higher level and wider range of visitor facilities and activities will be allowed inside nature reserves, the areas of lower conservation value, than will be allowed in national parks. New development for visitors in national parks will be limited to park boundaries and buffer zones. New development in nature reserves must be compatible with other management objectives.

Management Objectives for Each PA Category.

Management objective	Categories			
	I. NP	**II. NR**	**III.H/S MA**	**IV. P L/S**
Maintain sample ecosystems in a natural state	1	1	2	2
Maintain ecological diversity and regulation of the environment.	1	1	2	2
Conservation of genetic resources, especially genetic resources of threatened plant and animal species.	1	1	1	3
Provide opportunities for education, research and environmental monitoring.	1	1	1	2
Conserve catchment condition.	1	1	2	2
Control erosion, sedimentation and protect downstream areas.	1	1	2	2
Produce protein and animal products from wildlife; permit controlled hunting and fishing	0	0	3	3
Provide recreation and tourism services	2	1	3	1
Produce timber, forage, or marine products on sustained yield basis	0	0	3	1
Protect sites and objects of cultural, historical and archaeological heritage	1	1	3	1
Protect scenic beauty and open space	1	2	2	1
Manage flexibility; permit multiple use	0	0	2	2
Stimulate rational, sustainable use of buffer zones and rural development	3	2	2	2

Note:
1. Primary objectives for management of the area and resources
2. Secondary objectives
3. Potentially applicable objectives
0. Not applicable

Annex 7. Priority criteria for protected area management and conservation

In difficult conditions and with a large number of national parks and nature reserves and a developing system of wetlands and marine protected areas, it is necessary for Vietnam to put them in priority order for management and nature conservation. The Biodiversity Action Plan for Vietnam (BAP, page 110) mentioned priorities for protected area conservation. In order to manage effectively with limited financial resources, insufficiently skilled human resources with a poor understanding of biodiversity, as well as inadequate legislation, the BAP listed five criteria for prioritization that should be applied. These are modified as follows:

1. ***Speciality:*** *A protected area will be more prioritized in protection activities if it has key ecosystems of many rare and endemic faunal and floral species than protected areas with common biological communities with typical species. In addition, a protected area will be given priority if it has taxonomically unique species compared with protected areas containing taxons with multiple species or subspecies.*

2. ***Endangeredness:*** *Protected areas with rare, threatened or endangered faunal and floral species should be given more attention than those without rare, threatened or endangered species. Communities and ecosystems that are threatened or on the verge of extinction will be prioritized higher than others.*

3. ***Utility:*** *Protected areas have many floral and faunal species with high economic values. Those that are currently harvested or heavily exploited, or with potential values for human beings will be prioritized above those with species of unclear value.*

4. ***Biodiversity:*** *Protected areas with high species and ecosystem diversity will be focused on more than those with low diversity.*

5. ***Threatened level****: A protected area threatened by various causes will be given higher priority compared with those that are less threatened.*

✍ A clear categorization system and specific conservation priorities will make it easier to receive attention and direction from functional agencies as well as receive priorities for financial investment. Thus, resource selection will follow agreed principles and areas with high biodiversity and/or rare and endemic species will be conserved with the highest efforts.

✍ Protected areas with these priority criteria should be invested in from the state budget, regardless if they are nature reserves or national parks managed by provincial authorities.

✍ These five priority criteria help to reject proposals to change the category of protected areas that do not follow the principles or lack a scientific basis.

Annex 8. Training needs.

The following training has been identified during the development of this strategy as necessary for capacity building among managers and field staff in the protected areas. The development of a comprehensive training programme to meet these needs has been identified as an immediate priority (see Chapter 3).

In-country training

Project design and management
- Logframe
- Project proposal writing
- Monitoring of activities and budgets
- Review and reporting

Management
- Management Plans (including Investment Plans)
- Zoning Plans
- Activity planning and budgeting

Biodiversity conservation
- Wildlife ecology and management
- Ecology of coral reefs and coastal zones
- Plant communities and forest ecology
- Surveys and monitoring
- Museum and herbarium collections
- Fire prevention and fire suppression

Legislation and its application
- Regulation and enforcement

Communications
- With local communities
- With the media

Tourism management
- Technical
- GIS applications and use
- Database development and applications
- Internet research skills

Regional training

To be implemented as opportunities arise to meet the needs identified above.

Staff exchanges

Nationally between PAs with management boards
Internationally as opportunities arise.

Annex 9. International conventions

1. The Convention on Biological Diversity (CBD)

The CBD was a major outcome of the Earth Summit (UNCED) in Rio de Janeiro in 1992.The Vietnamese Government signed the Convention on 16 November 1994 and approved the supporting national Biodiversity Action Plan in December 1995.

The Convention's objectives are:

- The conservation of biological diversity (the variety of life);
- The use of its components (ecosystems, species and genetic resources) in a manner that does not degrade them in quantity or quality (sustainable use); and
- The fair and equitable sharing of the benefits arising out of the utilisation of genetic resources.

The Convention emphasises the importance of conservation in natural conditions with activities supporting conservation outside natural areas. It addresses the requirements for identifying and monitoring important biodiversity components, establishment and maintenance of representative protected area systems, sustainable management of biological resources both inside and outside protected areas, the rehabilitation of degraded ecosystems, recovery actions for threatened species of flora and fauna, control of alien and pest species, the control of immediate and root causes of biodiversity loss, and the need for research and training.

Implementation in Vietnam: The CBD is under the overall management and monitoring /supervision of the Ministry of Natural Resources and Environment. However, the FPD and Department of Forest Development in MARD undertake forest management tasks in the Convention.

Vietnam has three major objectives for protected areas within the framework of the other components of the CBD.

2. The Ramsar Convention on Wetlands

This is the Convention on important wetland areas, originally focused on the conservation and wise use of wetlands where important waterbird habitats are found. This focus has been broadened over the years and wetlands are now clearly recognized as ecosystems that are vitally important for biodiversity conservation in general and for the well-being of human populations. The Convention entered into force in 1975 and, as of 4 April 2002, has 131 Contracting Parties protecting 1150 wetland sites. It was supplemented with a Protocol in Paris in 1982. Vietnam has participated in the Convention since 20 September 1988 and has designated one Ramsar site, Xuan Thuy Nature Reserve, for inclusion in the *'List of Wetlands of International Importance'*.

Implementation in Vietnam: The Ramsar Convention and the Ramsar Site is under the overall management, monitoring and supervision of the Ministry of Natural Resources and Environment. However, forest tasks in wetland areas are managed by MARD, which appears to match present management capacity.

3. CITES

CITES was concluded on 3 March 1973 in Washington with the initial participation of 13 countries and came into force in 1975. Currently, 158 nations have agreed to participate in CITES. In light of the significant international demand for Vietnam's wild species and the role Vietnam plays in facilitating Indochina's trade in wildlife, the country acceded to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and became a full member (No.121) on 20 January 1994. This Convention is a means to assist countries in curtailing unsustainable and illegal international wildlife trade. While recognizing that "…states are and should be the best protectors of their own wild fauna and flora", CITES facilitates international cooperation with an international legal framework. Vietnam fully participates in the Conference of Parties held every two years to decide the main issues for implementing the Convention (voting based on a majority) and maintains regular contact with the Secretariat Board of CITES and other member countries.

The participation of Vietnam in CITES and its efforts in recent years has contributed to reducing illegal trade in wild animal and plant species and has improved Vietnamese people's awareness of species conservation, especially rare and valuable species. Behaviors of trading, hunting, slaughtering and eating wildlife animal species have been strongly criticized, although little action against such practices has occurred, due in large part to the lack of appropriate legislation. Many organizations and individuals have followed CITES requirements in initial encouraging achievements raising and breeding some wildlife species, producing high value commercial products for export.

The illegal and unsustainable trade in wild species is considered to be the most urgent threat to the survival of Indochina's rare and endangered fauna and flora.

Wild species sourced both domestically and from neighbouring countries are increasingly being consumed within Vietnam. This is largely because of the increase in disposable income amongst urban dwellers. The majority of wild species are illegally exported to international markets, principally China (including Hong Kong) but also Japan, Taiwan, and South Korea.

Whilst becoming a Party to CITES is relatively straightforward, implementing and enforcing the provisions of the Convention is a challenging task for many nations. This is particularly true for developing countries that lack resources in terms of technically knowledgeable staff, equipment and adequate facilities. Vietnam has been no exception. Since becoming a Party to the Convention in 1994, it has struggled to comply effectively with its obligations. This situation has largely been due to untrained and inadequately paid enforcement staff, a lack of basic equipment, minimal public awareness about, or concern for, biodiversity conservation, a lack of cooperation amongst relevant enforcement agencies both within and outside of Vietnam and, until very recently, absence of legislation to implement CITES. This situation is, however, beginning to improve as the government has formally recognized the urgent need to address illegal and unsustainable wildlife trade. With the recent assistance of environmental NGOs, such as TRAFFIC and WWF, and international donor agencies, such as Danida and the British Government, for example, Vietnam now has legislation in place to implement CITES, a dedicated CITES office within the Forest Protection Department and increasingly, more training on CITES for its staff within the relevant enforcement agencies. Nevertheless, these efforts have been sporadic and both a strategic and comprehensive approach to implement and enforce CITES is required if Vietnam is effectively to gain control of the trade in its wild plant and animal species.

Four broad objectives need to be addressed in order to realistically curtail illegal and unsustainable wildlife trade in Vietnam through strengthening Vietnam's implementation and enforcement of CITES. Based on the above, and previous discussions with Vietnam's CITES Management Authority, and the CITES Secretariat, and research conducted by TRAFFIC and others, the objectives and their associated actions are given below.

4. The World Heritage Convention (WHC)

The goal of the WHC is to identify and put into place mechanisms to conserve the world's cultural and natural heritage by establishing a list of sites with outstanding values of importance for humankind. By doing so the Convention seeks to ensure their protection from degradation through closer cooperation among party states and other nations. The General Conference of UNESCO adopted this agreement, now signed by more than 150 State Parties, in 1972.

By signing the Convention, each country pledges to conserve the sites situated on its territory, some of which may be recognized as World Heritage. Their preservation then becomes a responsibility shared by the international community as a whole. Vietnam signed the Convention on 19 October 1987. Vietnam has one World Heritage Site, Ha Long Bay (which encompasses Cat Ba Island National Park), designated in 1994 because of its exceptional natural beauty and aesthetic importance. It is now recognized for its geological processes of exceptional nature.

Implementation in Vietnam: The Quang Ninh PPC established the Ha Long Bay Management Department, which now has in excess of 175 staff. The Department is guided by the Ministry of Culture and Information and the Vietnam National Committee for UNESCO. It is responsible for the protection of the values of the World Heritage Site and for overall management of the area and utilisation of the resources.

The Ha Long Bay Management Department has a wide mandate for management activities in the Bay, which includes Cat Ba National Park management coordination and cooperation with MARD.