MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

VIETNAM NATIONAL BIODIVERSITY STRATEGY TO 2020, VISION TO 2030

INDEX

LIST OF ACRONYMS AND ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
FSC	Forest Stewardship Council
GDP	Gross Domestic Product
GEF	Global Environment Facility
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
PA	Protected Area
NR	Nature Reserve
MAP	Medicinal and Aromatic Plants
NBSAP	National Biodiversity Strategy and Action Plan
NTFP	Non-Timber Forest Products
MARD	Ministry of Agriculture and Rural Development
MONRE	Ministry of Natural Resources and Environment
ODA	Official Development Assistance
PES	Payment for Ecosystem Service
REDD+	Reduced Emissions from Deforestation and Degradation
UNFCC	United Nations Framework Convention on Climate Change
PC	People's Committee
NP	National Park
WWF	World Wildlife Fund

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PREFACE

Viet Nam is endowed with extraordinary biodiversity, with many types of ecosystems, species and genetic resources, which are rich and endemic. In Vietnam, biodiversity brings direct benefits to humans, contributing substantially to the national economy, especially sectors such as agriculture, forestry and fisheries; ensuring the food security for the country; maintaining genetic resources for farming animals and crops; providing construction materials, pharmaceutical materials and food. In addition, ecosystems play an important role in climate regulation and environmental protection. Biodiversity has also been a cultural and artistic inspiration to humanity for millennia.

At present in Vietnam, some 49,200 species have been identified, consisting of nearly 7,500 microorganisms; 20,000 terrestrial and water plants; around 10,500 terrestrial animals; about 2,000 invertebrates and freshwater fish; and in the sea, there are over 11,000 marine species[1].

The research results show that hundreds of terrestrial and inland freshwater species new to science have been described for the first time in Vietnam, reflecting the high endemism of the biota. From 2006 to 2011 alone, over 100 species new to science were discovered and described for the first time in Vietnam, in particular there were 21 reptile species, 6 frog species and 1 ferret species. Many scientists believe that there are many other wildlife species in Vietnam still unknown, and the number of such known species may be much lower than the actual number of species in nature[2].

[1] National Biodiversity Report 2011

[2] Updated information based on the National Biodiversity Report 2011

In the composition of the identified species, 882 rare plants and animals with high economic value are threatened at different levels, which are listed in the Vietnam Red Book 2007. According to estimations, Vietnam is one of the centres with highly diverse local genetic resources of plants and animals in the world, including about 800 agricultural crop varieties, and 14 key cattle and poultry varieties. These are valuable native genetic resources in Vietnam, which need to be protected, conserved and developed.

In recognition of the importance of biodiversity, in the last two decades, the Government has issued a relatively complete legal framework related to biodiversity conservation. Many important laws in the field of natural resource management have been enacted and completed, such as the Forest Protection and Development Law 1991 (amended in 2004); the Land Use Law, 1993 (amended in 1998, 2003, and 2013); the Environmental Protection Law, 1993 (amended in 2005 and 2014); the Water Resources Law, 1998 (amended in 2012); and the Fisheries Law, 2003. In particular, the Biodiversity Law, 2008 marks an important milestone for conservation that has identified the principles and priorities of biodiversity conservation at all levels, from national and ministerial to local levels; creating the legal basis for local community involvement in the conservation of natural resources through new mechanisms of co-management and benefit sharing.

In recent years, the Government has issued policies, strategies and plans in order to promote the conservation of biodiversity. In 1995, the first Biodiversity Action Plan (BAP 1995) was issued after Vietnam became a member of the Convention on Biological Diversity in 1994. BAP 1995 became the guideline for biodiversity conservation in Vietnam during the period 1995-2005. By 2005, the Ministry of Natural Resources and Environment had submitted the "Biodiversity Action Plan to 2010 with vision to 2020" (BAP 2007) to the Prime Minister for approval. BAP 2007 issued by the Prime Minister at Decision 79/2007/QD-TTg dated May 31, 2007. After three years of implementation of BAP 2007, the Ministry of Natural Resources and Environment conducted a review and reported to the Prime Minister on the implementation of Decision 79/2007/QD-TTg. The report pointed out that there were a number of achievements obtained in biodiversity conservation such as the increase in the area of protected ecosystems, discovery of new species meaningful to science, and the conservation, restoration and development of genetic resources valuable in selection and breeding. On the other hand, there were still many challenges requiring a vision and strategic steps in line with the international and domestic context of the new period.

Vietnam is a developing country and transitioning to a middle-income country. People's lives have improved and the pressure on biodiversity resources due to poverty has reduced; however, unsustainable consumption patterns and conservation planning problems have emerged as new challenges to biodiversity. In addition, there are biodiversity conservation issues that need to be resolved, and mechanisms that need to be developed, to share the benefits from biodiversity and ecosystem services in a fair and equitable way that promotes community participation and allows community-based management, conservation and development of biodiversity. Methodology and approaches for conservation and restoration of biodiversity in response and adaptation to climate change also need be considered. The government has initiated and is steering towards a green and sustainable economy for the country; but while rapid growth has bought economic and social benefits, it has also put a lot of pressure on biodiversity. Vietnam's population increased from less than 73 million in 1995, to over 90 million in 2014, making Vietnam one of the most populous countries in Asia and creating a large demand for resource consumption and land use.

The global context also brings new challenges and opportunities. On the one hand, climate change has become more severe and is having an increasingly negative impact on biodiversity; while on the other hand, biodiversity conservation has been given higher attention than ever before at the global scale, with 2010 being internationally identified as the biodiversity year and 2010-2020 as the biodiversity decade by the UN. For the first time in history, the United Nations General Assembly in its 65th session held a high-level meeting on biodiversity with the participation of the leaders of states and governments. Also, in the 10th Conference of the Parties to the Convention on Biological Diversity held in the city of Nagoya, Aichi province, Japan, the Parties pledged to build their new biodiversity strategy for the next decades including a vision to 2050 and mission to 2020, as well as implementation measures and mechanisms to monitor and evaluate progress towards achieving the global goals.

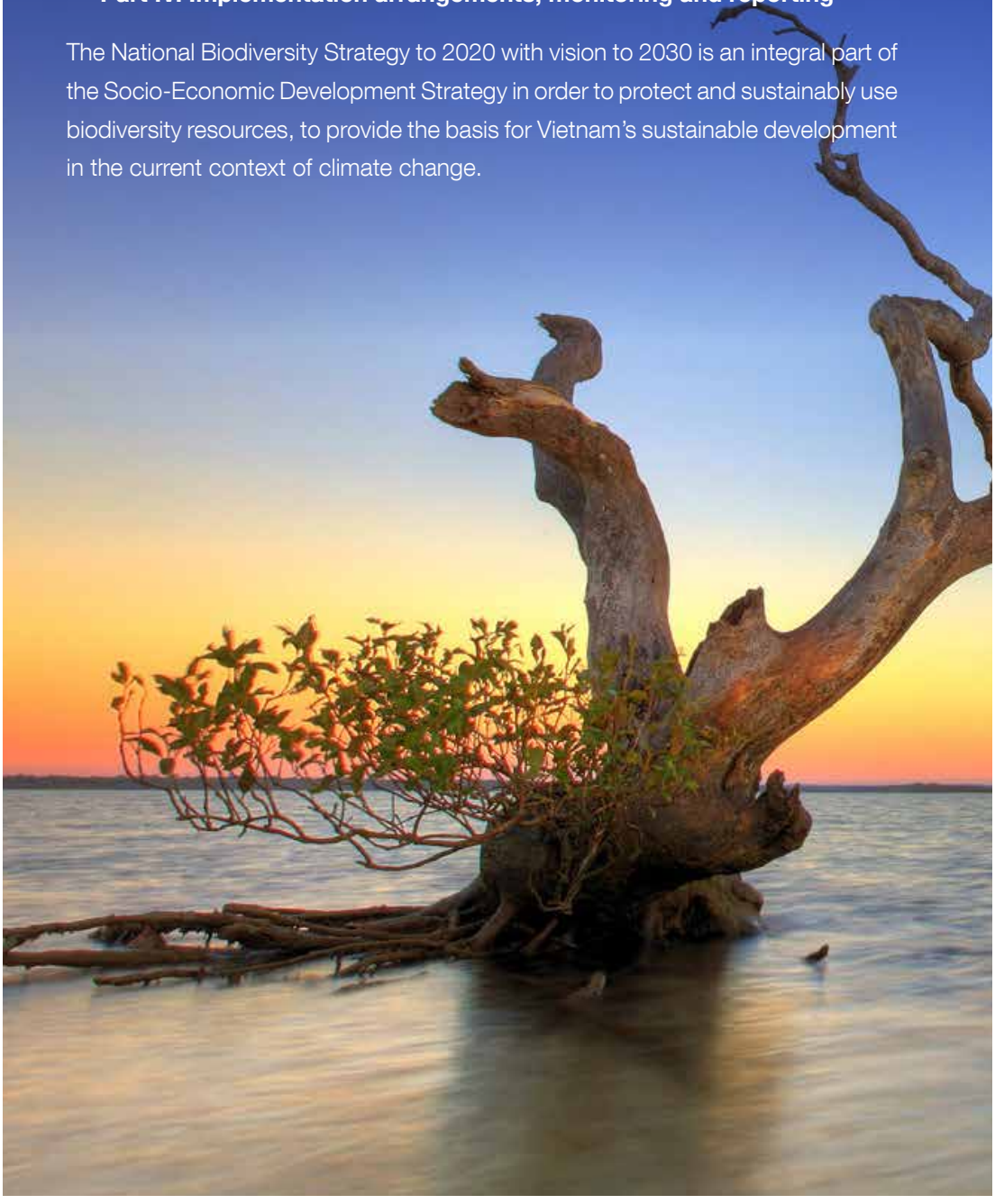
In this context, developing a National Biodiversity Strategy to 2020 with a vision to 2030 is both to fulfil commitments under the Convention on Biological Diversity to which Vietnam is a Party, and to identify goals, objectives and tasks for the conservation and sustainable use of biodiversity in accordance with developments in the new period; such as:

1. Identify the main causes of biodiversity loss; thereby reducing the pressure directly affecting biodiversity and preventing the decline of biodiversity in protected areas;
2. Properly resolve conflicts between conservation and development, especially the conversion of land use and water in areas with high biodiversity;
3. Conserve the system of protected areas (forests, wetlands, marine) containing typical ecosystems, and various key biodiversity areas, and promote ecosystem services. Priority is given to strengthen conservation status in a number of protected areas of ecological importance;
4. Enhance biodiversity conservation and development at the level of ecosystems, species and genetic resources. Reduce and then stop the exploitation, illegal trade, and overexploitation of biological resources, especially endangered, rare and precious species;
5. Genetic resources are conserved and developed through the investigation, study and inventory of biodiversity and biological resources, as well as indigenous knowledge on the use of biological resources on a national scale;
6. Promote the management and control the risks from invasive alien species, genetically modified organisms and their products, to the environment and human health;
7. Benefits from biodiversity and ecosystem services should be shared fairly and equitably with the participation of communities. Develop, improve and apply regimes on access to genetic resources and benefit sharing. Develop models for payments for ecological services in order to socialize conservation;
8. Study and evaluate the role of biodiversity in response to climate change and propose appropriate solutions.

Pursuant to document no. 3533/VPCP-QHQT dated May 31, 2011 and document no. 4148/VPCP-KGVX dated June 23, 2011 by the Prime Minister, the Ministry of Natural Resources and Environment submits the draft of the National Biodiversity Strategy to 2020, with a vision to 2030, including:

- **Part I: Context**
- **Part II: Viewpoints, vision, goals**
- **Part III: Strategic tasks and priority programs, plans and projects**
- **Part IV: Implementation arrangements, monitoring and reporting**

The National Biodiversity Strategy to 2020 with vision to 2030 is an integral part of the Socio-Economic Development Strategy in order to protect and sustainably use biodiversity resources, to provide the basis for Vietnam's sustainable development in the current context of climate change.



Part 1: CONTEXT

1.1. RICHNESS AND ROLE OF VIETNAM'S BIODIVERSITY

1.1.1. Richness of Vietnam biodiversity

Vietnam's territory stretches over 15 latitudes from North to South, with a length of about 1,650 km on the Indochina Peninsula and a total natural land area of 330,591 km^2. Due to the bisected topography with a relatively high annual average rainfall, the network of rivers and streams is relatively dense with the river network density ranging from under 0.5-2 km/km^2. On the continental part, there are 16 major river basins, of which 10 river basins cover an area of more than 10,000 km^2, accounting for 80% of the total country area. The two largest river systems are the Red River in the North and Mekong River in the South, which create two major basins consisting of the Red River Delta and Mekong Delta. The majority of Vietnam's territory is hilly and mountainous with the highest peak in Hoang Lien Son range being the Fanxipan at 3,143 m above sea level. Vietnam's topography and climate have given rise to a diverse range of natural ecosystems including a wide variety of forest ecosystem types: Evergreen closed tropical humidforest; Semi-deciduous closed tropical humidforest; Evergreen broad-leaved forests onlimestone; Coniferous forests; Dry dipterocarp forest; Mangrove forests, Melaleuca cajuputi forests; and Bamboo forest.Besides the eight types of forest ecosystems, scientists have classified 14 types of forest vegetation based on ecological factors (Thai Van Trung, 1999). Based on the natural factors of climate, topography, geology, and soil, Vietnam's continent is divided into eight forest eco-regions with 47 sub-regions that have their own vegetation and landscape characteristics.

In addition to forest ecosystems, other important ecosystems include grasslands, inland wetlands, dunes, inter-tidal mudflats, estuaries, sea grass beds, coral reefs and deep-sea areas. Also due to natural conditions, ecosystems and species in Vietnam are small in size, and very vulnerable.

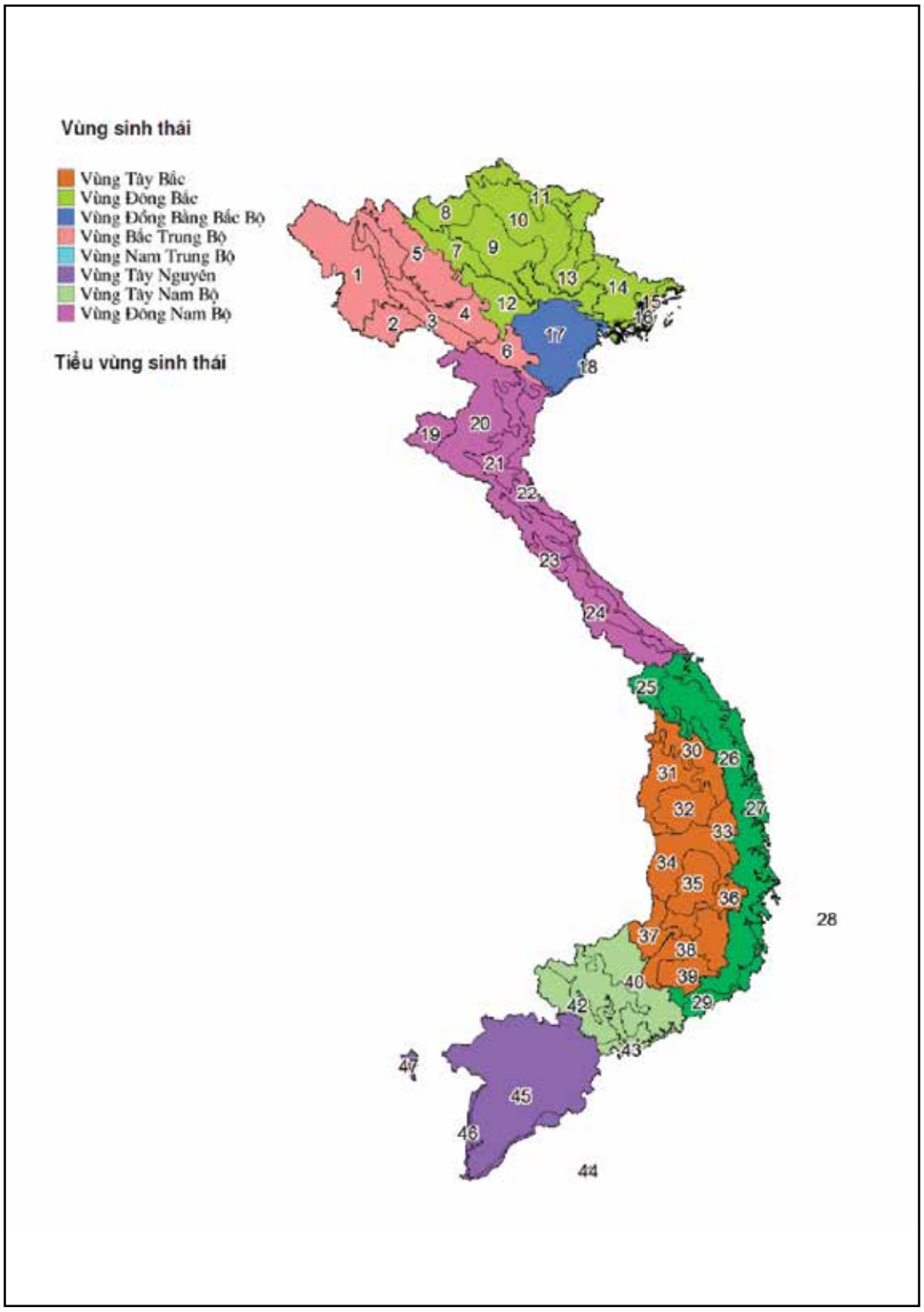


Figure 1. Map of forest ecoregions in Vietnam

(Source: Report on Forest Ecoregions in Vietnam, UN-REDD, Research Center for Forest Ecology and Environment - RCFEE, 2011)

Based on study documents of Wege et al. (1999), in 2013, BCA, WWF and Stockholm University developed a map of Vietnam's ecoregions according to UNESCO's forest plantation classification.

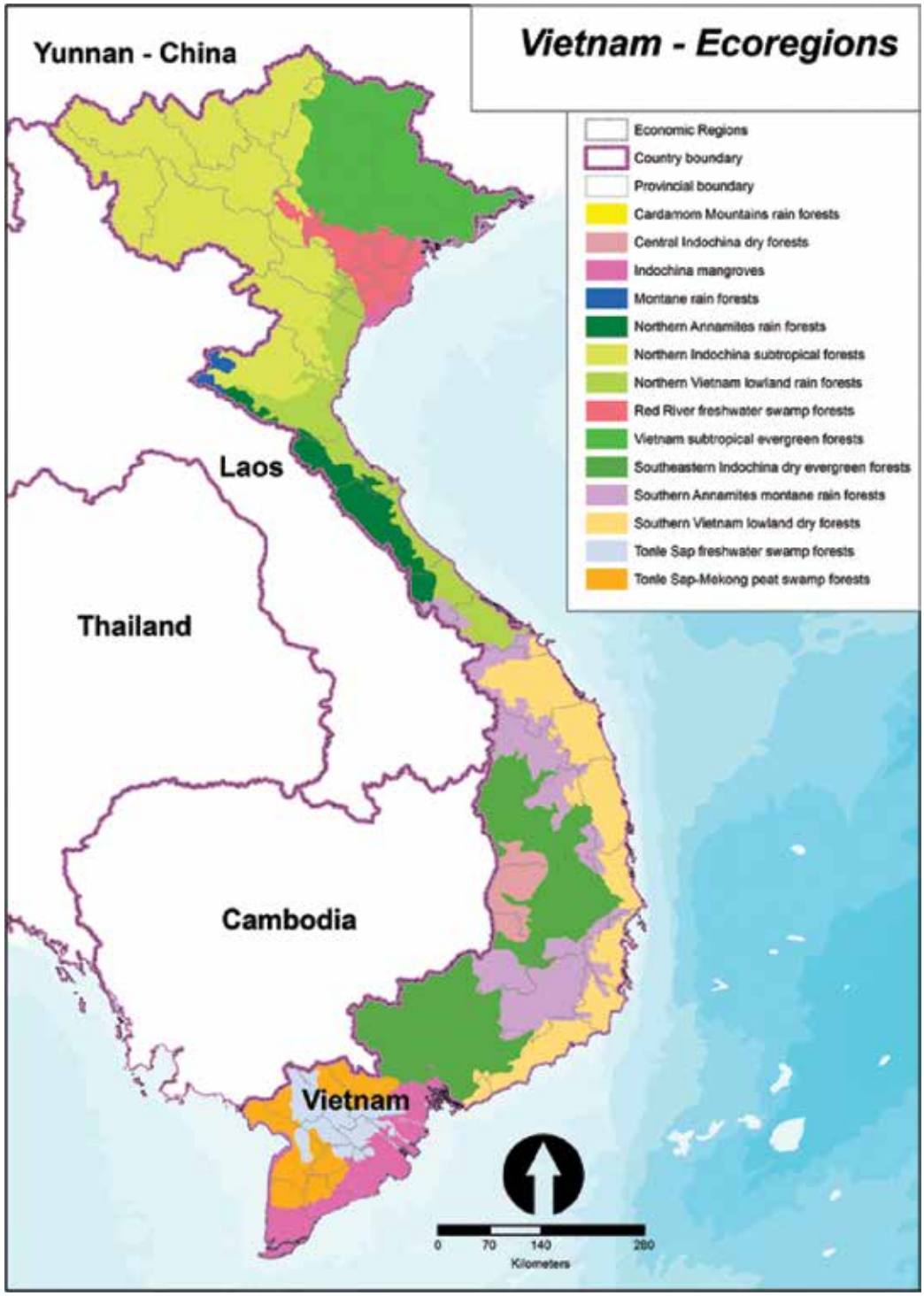


Figure 2. Forest ecoregions in Vietnam (under forest vegetation classification)

(Source: BCA, WWF and Stockholm University, 2013)

Under the project "Mainstreaming an Ecosystem-based approach to Climate Change into Biodiversity Conservation Planning in Vietnam" (EBA Project), BCA incooperation with WWF and Stockholm University, developed a map of ecosystems in Vietnam. However, this map does not show marine ecosystems, particularly the important ecosystems such as coral reefs and sea grass beds.

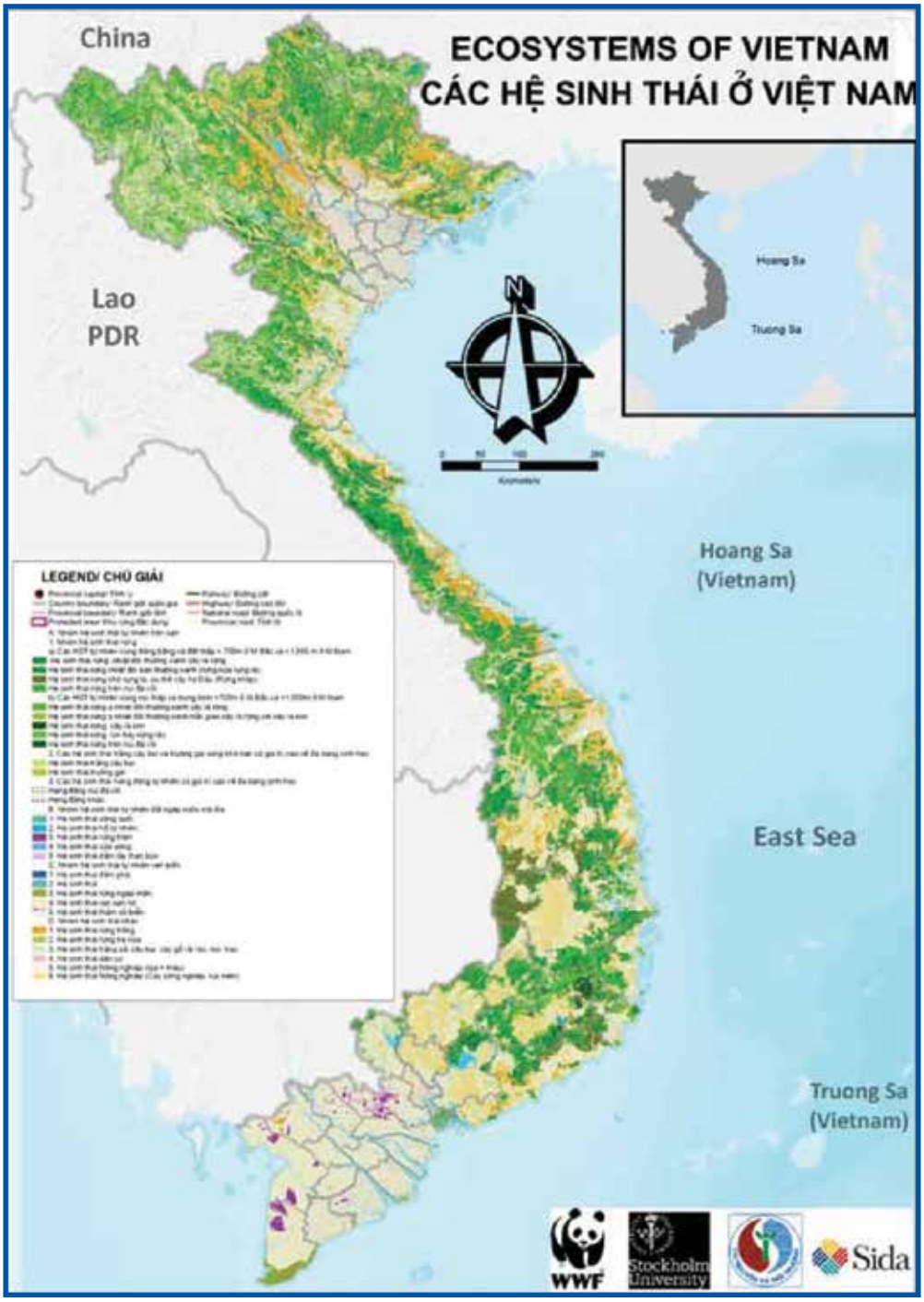


Figure 3. Map of terrestrial ecosystems of Vietnam based on types of forest vegetation

(Source: BCA, WWF and Stockholm University, 2013)

Tropical moist ever-green forest

Dipterocarp woodland ecosystem

Coniferous forest ecosystem

Limestone forest ecosystem

Mangrove forest ecosystem

Melaleuca forest ecosystem in freshwater swamp

Bamboo forest ecosystem

Cave ecosystem (Sơn Đòong cave)

River ecosystem (Côn River, Bình Định)

Lake ecosystem (West lake, Hanoi)

Agricultural ecosystem

Urban ecosystem

Figure 4. Some typical terrestrial ecosystems in Vietnam

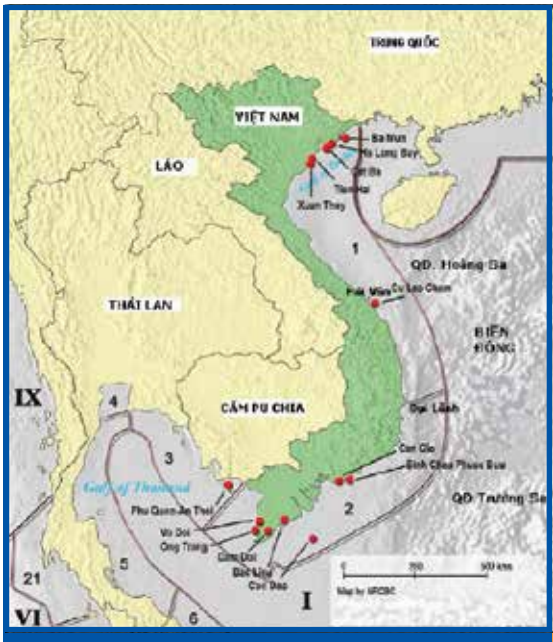
The coastline is over 3,260 km long with thousands of coastal islands, the Paracel and Spratly archipelagos, and an exclusive economic ocean zone of over 1 million km2. Based on the terrain and hydrography, there are five sea regions including the Northern, North-Central, Mid-Central, South East, and South West regions. Within these sea regions there are 11 coastal areas including Mong Cai-Do Son; Do Son-Mui Ron; Mui Ron-Hai Van; Hai Van-Sa Huynh; Sa Huynh-Dai Lanh cape; Dai Lanh-Ca Na; Ca Na-Vung Tau; Vung Tau-Ca Mau cape; Ca Mau-Rach Gia; and Rach Gia-Ha Tien (Tran Duc Thanh, 2015).

Vietnam's continental shelf is an extension of the Asian continent, with a depth of 150-300m at the outer boundary. The continental slope has an average depth of 2,500 - 3,000m, and up to 4,000m at the deepest points. The abyssal zone has an average depth of 4,000m, with the deepest areas up to 5,500m. The abyssal plain also has a system of underground mountains with a height of 200-3800m, with coral stone crests very specific to the sea terrain conditions (Resources and Environment Sea, Volume IV, 2003). So far, there is very limited data available on biodiversity in the continental shelf, continental slope and deep-sea areas of Vietnam. If a survey of marine biodiversity is conducted, there would certainly be some interesting discoveries.

At the geographical level, some experts from IUCN (1995) showed that Vietnam's sea is located in the sub-tropical eastern edge of the region 13- East Asia Sea including Vietnam's North and South; and the Eastern Gulf of Thailand.

Based on natural conditions, Vietnam's sea region can be divided into six biodiversity regions, as follows:

Zone 1: Tonkin Gulf (up to the southern edge of Con Co island, Quang Tri province)	Zone 4: Sea region in SouthEastern Coast (from Vung Tau to Ca Mau)
Zone 2: Sea region in mid-central coast (from Con Co island to Mui Dinh cape to Phan Rang – Varella cape)	Zone 5: Sea region in South Western Coast (from Ca Mau to Phu Quoc island in Thailand Gulf)
Zone 3: Sea region in South Central Coast (from Mui Dinh cape to Vung Tau)	Zone 6: Offshore sea region including Spratly and Paracel Islands



Marine bio-geographical zoning in Vietnam

(Source: IUCN, 1995)

Legend: I. Sub-tropical eastern edge of the region 13- East Asia Sea; 1.Northern Vietnam; 2.Southern Vietnam; 3.Eastern Gulf of Thailand; 4.Central Gulf of Thailand; 5.Western Gulf of Thailand; 6. NorthEast Malaysia.

Marine biodiversity and MPA groups of Viet Nam

(Nguyen Huy Yet, 2000)

Figure 5. Map of marine bio-geographical zoning, marine biodiversity zoning, and MPA groups of Vietnam

In the six marine biodiversity zones mentioned above, about 20 types of marine ecosystems can be identified. Typical marine ecosystems in coastal zones include tidal flats, mangrove forests, lagoons, bays, salt lakes on islands, coral reefs, and seagrass beds. In addition, there are ecosystems surrounding inshore and offshore islands, especially in the deep sea areas surrounding the Spratly and Paracel Islands. Of these ecosystems, mangrove forests, coral reefs and seagrass beds have highest biodiversity levels and most important value for conservation.

Coral reef ecosystem

Sea grass ecosystem

Lagoon ecosystem (Tam Giang Lagoon)

Châu Truc/Tra O swamp ecosystem (Binh Dinh)

Bay ecosystem (Ha Long Bay)

Salt-water lake ecosytem in Cong Do island, Ha Long Bay (Source: Waltham Tony)

Figure 6. Some typical coastal ecosystems in Vietnam

Due to the diversity of terrestrial and aquatic ecosysrems, including inland wetlands and marine ecosystems, species composition in Vietnam is also very diverse and abundant. Vietnam is home to nearly 16,500 species of terrestrial vascular plants, fungi and seaweed, a high percentage of which are believed to be endemic (about 30%). This shows a high diversity of flora in Vietnam. On land, there are about 10,500 species of animals, including approximately 8,000 species of insects and invertebrates in the soil, nearly 500 species of reptiles and amphibians, 850 species of birds and 312 species of mammals. In freshwater there are about 1,500 species of microalgae and seaweed, over 1,000 species of invertebrates and 600 species of fish; and in the sea there are more than 1,200 species of seaweed, grass and microalgae, over 7,000 species of invertebrates, 2,500 fish species and approximately 50 species of sea snakes, turtles and mammals[3]. In addition, scientists say that the number of species in Vietnam may be much higher than this, as species new to science are continually being discovered and described.

[3] East Sea monograph -Episode IV-organisms and marine ecology, Vietnam Academy of Science and Technology (2009); National Biodiversity Report, MONRE (2011).

Table 1: The abundance of species in Vietnam

Species Group	*The number of identified species*
1. Phytoplankton - Freshwater - Marine	About 2,000 1,438 537
2. Aquatic plants - Freshwater - Marine	About 680 About g 20 653
3. Sea grass	14
4. Mangrove plants	94
5. Terrestrial plants - Vascular plants - Non-vascular plants (moss, fungi)	16,428 13,747 2,681
6. Freshwater invertebrates	About 1000
7. Marine invertebrates - Zooplankton - Zoobenthic	About 7,000 657 About 6,300
8. Soil invertebrates	About 1,000
9. Parasitic helminthes	190
10. Insects	6,600
11. Fish - Freshwater fish - Marine fish	About 3,500 About 600 About 2,500
12. Frogs	167
13. Terrestrial reptiles	317
14. Marine reptiles (sea snakes, turtles)	21
15. Birds	840
16. Terrestrial mammals	312
17. Marine mammals	25

Source: National Biodiversity Report, MONRE (2011), East Sea monograph -Episode IV- organisms and marine ecology, Vietnam Academy of Science and Technology (2009)

Apart from the diverse natural biology, Vietnam also possesses a wealth of agricultural biodiversity. It is situated within one of the Vavilov Centres of Origin of domesticated plants and has been the source of some 40 domestic livestock breeds. Local crop varieties and livestock breeds, including the famous pot-bellied pig, have been developed over many hundreds of years and often possess valuable characteristics such as disease and pest resistance. More than 6,000 varieties and genotypes of rice have been recorded from Vietnam.

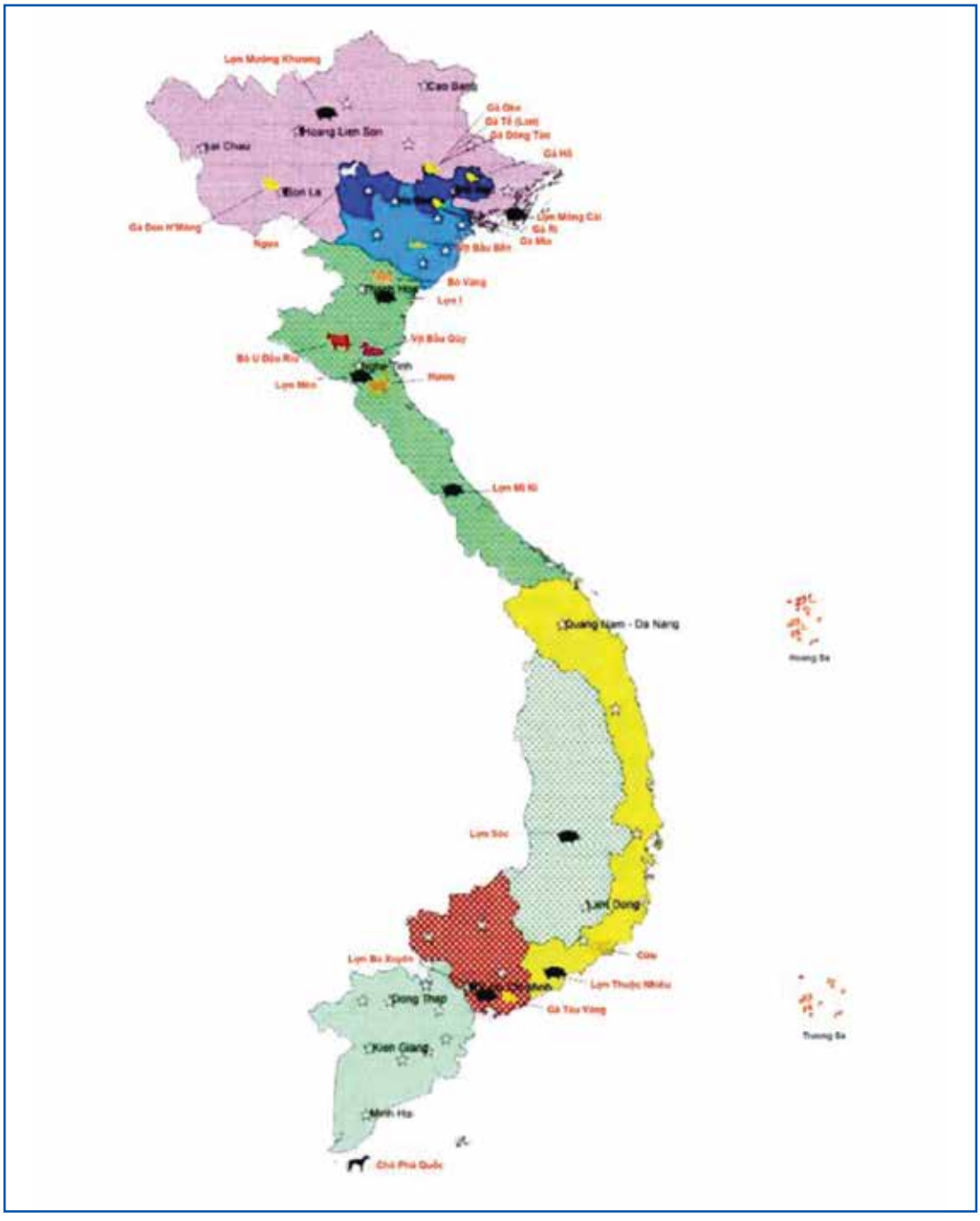


Figure 7. Distribution of domestic livestock breeds in Vietnam

(Source: MONRE, 2011, National Biodiversity Report)


Pintail *(Anas acuta acuta)*


Mong Cai Pig *(Sus domesticus)*

Figure 8. Some native livestock species in Vietnam

1.1.2. Global importance of Vietnam's biodiversity

Besides the advantage of unique natural ecosystems and diverse species composition, over the last 20 years a range of new discoveries have highlighted and reconfirmed Vietnam's global importance for biodiversity. A new genus of large, hoofed mammal, the Saola (Pseudoryx nghetinhensis) was discovered in 1992, which is the world's largest land-dwelling animal to be discovered more than 50 years after the Kouprey (Bos sauveli) was discovered in Indochina (in 1937). Three new deer species have also been discovered: the Vietnamese mouse deer (Trangulus versicolor); large-antlered Muntjac (Megamuntiacus vuquangensis); and Annamite muntjac (Munticus truongsonensis). Other species have been discovered and described in Vietnam including 3 species of turtle, 15 lizards, 4 snakes, 31 frogs, 55 fish, over 500 invertebrates and more than 200 species of vascular plant[4].

Table 2: 24 new genera of plants described for the first time

24 new genera of plants described since 1993:

1.	Hiepia *(Asclepiadaceae)* - 2012
2.	Lockia *(Orchidaceae)* - 2012
3.	Theana *(Orchidaceae)* - 2012
4.	Lanonia (Arecaceae) - 2011
5.	Miguelia (Orchidaceae) - 2011
6.	Newmania *(Zingiberaceae)* - 2011
7.	Hayata *(Orchidaceae)* - 2009
8.	Hamularia *(Orchidaceae)* - 2006
9.	Xyloselinum (Apiaceae) - 2006
10.	Kontumia (Dryopteridaceae) - 2005
11.	Vietorchis *(Orchidaceae)* - 2003
12.	Zeuxinella *(Orchidaceae)* - 2003
13.	Xanthocyparis *(Cupressaceae)* - 2002
14.	Caobangia *(Dryopteridaceae)* - 2002
15.	Metapanax *(Araliaceae)* - 2001
16.	Ascocentropsis *(Orchidaceae)* - 2000
17.	Rubovietnamia *(Rubiaceae)* - 1998
18.	Vidalasia *(Rubiaceae)* - 1998
19.	Fosbergia *(Rubiaceae)* - 1997
20.	Distichochlamys *(Zingiberaceae)* - 1995
21.	Vietnamochloa (Poaceae) - 1995
22.	Grushvitzkya *(Araliaceae)* - 1994
23.	Vietnamia *(Asclepiadaceae)* - 1994
24.	Christensonia *(Orchidaceae)* - 1993

(Source: Vườn thực vật Missouri, năm 2012)

[4] Data source: the Institute of Ecology and Biological Resources, the Journal of Biology and the Journal Zoo Taxa, Crustaceana.

Vietnam is home to a large number of globally threatened animal and plant species in urgent need of conservation action, including:

Primates:

- Cao Vit gibbon (*Nomascus nasutus*, Critically Endangered [CR]);
- Tonkin snub-nosed monkey (*Rhinopithecus avunculus*, CR and endemic);
- Cat Ba langur (*Trachypithecus poliocephalus*, CR and endemic);
- Delacour's langur (*Trachypithecus delacouri,* CR and endemic);
- Western black-crested gibbon (*Nomascus concolor*, CR);
- Grey-shanked douc langur (*Pygathrix cinerea*, CR and endemic).

Reptiles:

- Vietnamese pond turtle (*Mauremys annamensis*, CR and endemic);
- Swinhoe's softshell turtle (*Rafetus swinhoei*, CR).

Birds:

- Edwards's pheasant (*Lophura edwardsi*, CR and endemic).

Ungulates:

- Saola (*Pseudoryx nghetinhensis*, CR – only found in Vietnam and Lao).

Fish:

- *Cyprinus hyperdorsalis* (endemic and threatened with extinction).

Molluscs: freshwater mussels, including:

- *Cuneopsisdemange* (CR, endemic and threatened with extinction);
- *Gibbosulacrassa* (CR, threatened with extinction);

Plants (the following are all CR in Vietnam):

- Agar wood (*Aquilaria crassna*, internationally endangered);
- Thailand rosewood (*Dalbergia cochinchinensis*, vulnerable);
- Burmese rosewood (*Dalbergia oliveri*, globally threatened);
- Ebony (*Diospyros mun*, endemic);
- Chinese water fir (*Glyptostrobus pensilis*, internationally endangered);
- *Hopea cordata* (endemic);
- *Sorea falcata* (CR, endemic);
- Delanat's slipper orchid (*Paphiopedilum delenatii*, endemic);
- Vietnamese golden cypress (*Xanthocyparis vietnamensis*, endemic).

Some stands of Chinese Swamp Cypress (Glyptostrobus pensilis) in Ea Ral, Đắk Lắc

Tonkin snub-nosed monkey (Rhinopithecus avunculus). Photo: Le Khac Quyet

Saola
(Pseudoryx nghetinhensis)

Delacour'slangur
(Trachypithecus delacouri)

Grey-shanked douc langur (Pygathrix cinerea)

Swinhoe's softshell turtle (Rafetus swinhoei)

(Gibbosula crassa)

Figure 9. Some endangered, precious and rare species prioritized for protection in Vietnam

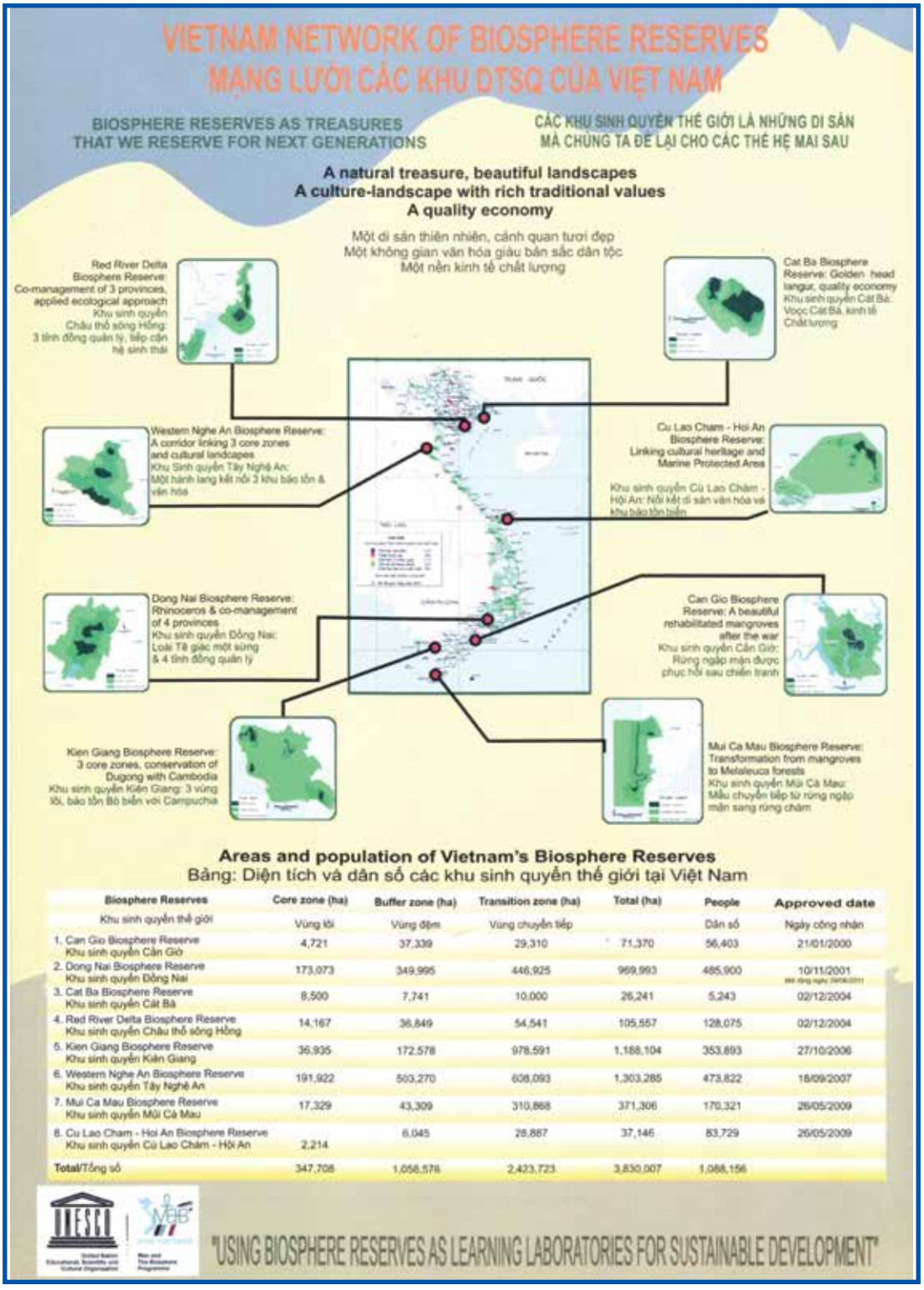
Six of the 238 priority eco-regions identified by the World Wide Fund for Nature (WWF) are located in Vietnam. These are the Annamite Range Moist Forests; Indochina Dry Forests; Mekong River; Northern Indochina Sub-tropical Moist Forests; South-east China-Hainan Moist Forests; and Xi Jiang Rivers and Streams (Bang River – Ky Cung river). A significant number of Vietnam's protected areas have been accorded international or regional recognition, including:

EightRamsar sites: Xuan Thuy National Park in Nam Dinh province (1989); Bau Sau in Cat Tien National Park, Dong Nai province (2005); Ba Be National Park in Bac Kan province (2011); Tram Chim National Park in Dong Thap province (2012); Mui Ca Mau National Park (2013); Con Dao National Park (2014); U Minh Thuong National Park in Kien Giang province (2015); and Lang Sen Wetland National Park in Long An province (2015).

Nine Biosphere Reserves: CanGio (2000); Dong Nai (2001); Cat Ba (2004); the Red River Delta (2004); Kien Giang (2006); Western Nghe An (2007); Mui Ca Mau (2009); Cu Lao Cham (2009); and most recently LangBiang-Lam Dong (June, 2014).

Two natural World Heritage sites: Halong Bay (1994) and Phong Nha Ke Bang (2003).

Four ASEAN Heritage Sites: Ba Be National Park (2003); Kon Ka Kinh National Park (2003); Chu Mom Ray National Park (2003); Hoang Lien National Park (2003); and U Minh Thuong National Park (2013).



Biosphere Reserves Khu sinh quyển thế giới	Core zone (ha) Vùng lõi	Buffer zone (ha) Vùng đệm	Transition zone (ha) Vùng chuyển tiếp	Total (ha)	People Dân số	Approved date Ngày công nhận
1. Can Gio Biosphere Reserve Khu sinh quyển Cần Giờ	4,721	37,339	29,310	71,370	56,403	21/01/2000
2. Dong Nai Biosphere Reserve Khu sinh quyển Đồng Nai	173,073	349,995	446,925	969,993	485,900	10/11/2001
3. Cat Ba Biosphere Reserve Khu sinh quyển Cát Bà	8,500	7,741	10,000	26,241	5,243	02/12/2004
4. Red River Delta Biosphere Reserve Khu sinh quyển Châu thổ sông Hồng	14,167	36,849	54,541	105,557	128,075	02/12/2004
5. Kien Giang Biosphere Reserve Khu sinh quyển Kiên Giang	36,935	172,578	978,591	1,188,104	353,893	27/10/2006
6. Western Nghe An Biosphere Reserve Khu sinh quyển Tây Nghệ An	191,922	503,270	608,093	1,303,285	473,822	18/09/2007
7. Mui Ca Mau Biosphere Reserve Khu sinh quyển Mũi Cà Mau	17,329	43,309	310,868	371,306	170,321	26/05/2009
8. Cu Lao Cham - Hoi An Biosphere Reserve Khu sinh quyển Cù Lao Chàm - Hội An	2,214	6,045	28,887	37,146	83,729	26/05/2009
Total/Tổng số	347,708	1,056,576	2,423,723	3,830,007	1,088,156	

Figure 10. Vietnam network of biosphere reserves

Figure 11. Map of distribution of forest types and some precious and rare animals in regions of Vietnam

(Source: Vietnam Geographic Atlas)

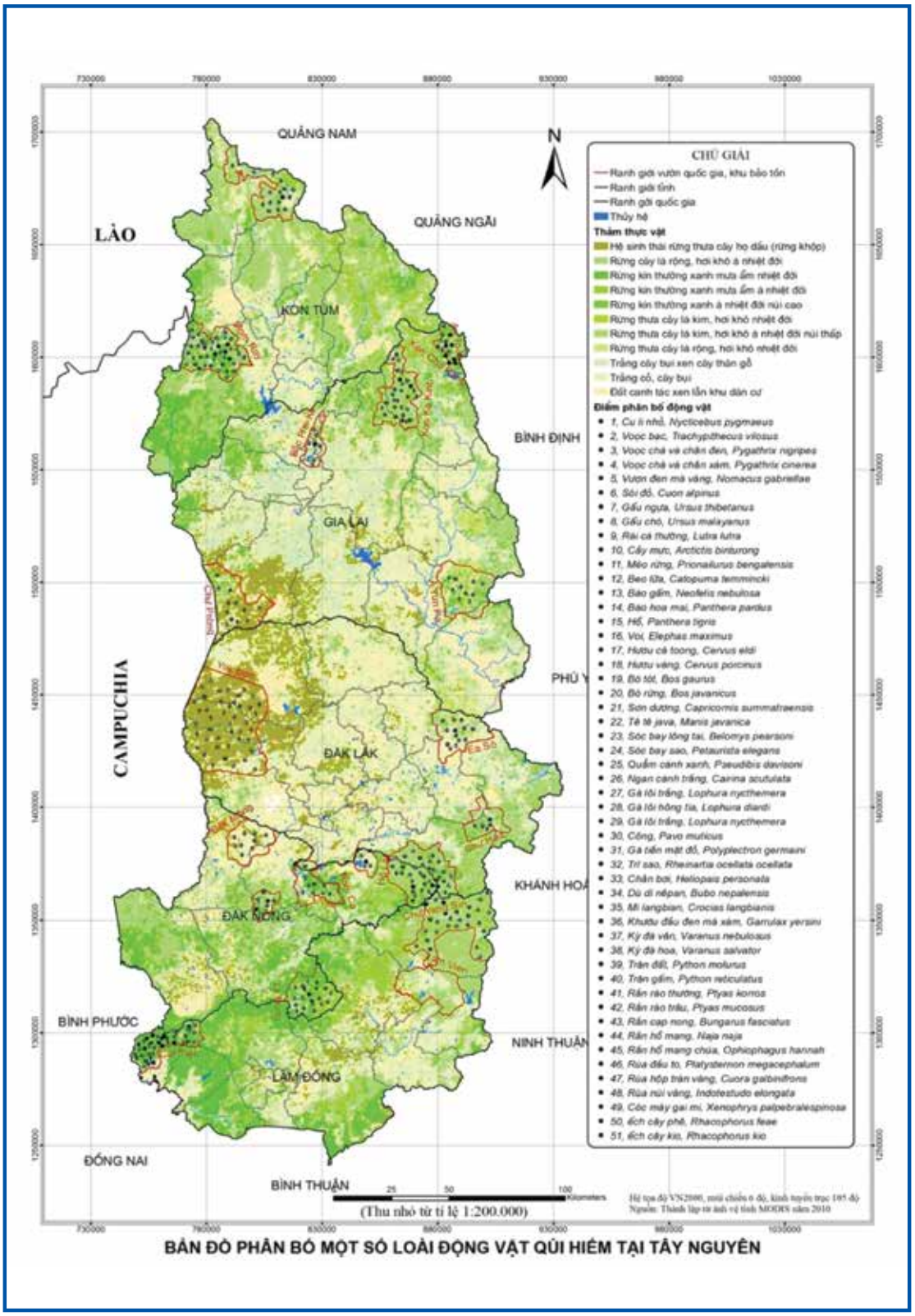


Figure 12. Map of distribution of some precious and rare wildlife in Central Highlands

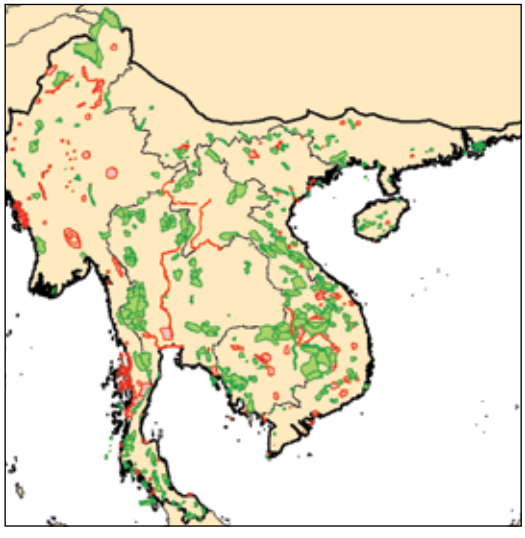
(Source: Institute of Ecology and Biological Resources - IEBR)

A total of 63 Important Bird Areas (IBAs) have been identified in Viet Nam, accounting for about 5% of the total land area of the country, in which four provinces with the highest number of IBAs (19 IBAs) are Dak Lak, Lam Dong, Gia Lai and Quang Binh.

Key Biodiversity Areas (KBAs) are expanding the concept of Important Bird Areas (IBA), and used to recognise distribution of important groups of organisms. KBAs are internationally recognized areas of importance for species diversity. KBAs are identified at the national, sub-national or regional level by local stakeholders using two widely accepted criteria for biodiversity importance:

- Vulnerablity: areas where there is regular occurrence of significant (exceeding a threshold) population of a globally threatened species (according to the IUCN Red List) at the site.
- Irreplaceablity: areas that hold a significant proportion of a species' global population at any stage of the species' lifecycle.

A KBA might be inside or outside of a protected area. In Vietnam, there are 104 KBAs covering an area of 3.35 million ha, accounting for 10% of country's terrestrial area (Birdlife et al. 2013).



Key Biodiversity Areas (KBAs) identified in the Indo-Burma region with black line, hotspot KBAs inside protected areas with green line, KBAs outside of protected areas with red line (Source: Tordoff, A.W., M.C. Baltzer, J.R. Fellowes, J.D. Pilgrim & P.F. Langhammer, 2012)

Protected areas and location of KBAs and key wetlands (Source: Carew-Reid, Jeremy, Josh Kempinski and Alison Clausen. 2010)

Figure 13. Key Biodiversity Areas in Vietnam

1.1.3. The role of biodiversity in supporting the national economy and human well-being in Vietnam

Although it is not always recognised, biodiversity contributes substantially to the national economy, especially in sectors such as agriculture, forestry, fisheries and the pharmaceutical industry. In 2010, agriculture contributed to over 18% of the gross domestic product (GDP) and 28 % of total exports.

Table 3. GDP byeconomic sector at 2010 prices

Unit: billion VND

Year	Total	Economic Sectors		
		Agriculture, forestry and fisheries	Industry and construction	Services
2010	2,157,828	396,576	693,351	797,155
2011	2,292,483	413,368	746,069	856,691
2012	2,412,778	425,446	801,217	914,177
2013	2,543,596	436,642	841,953	975,592
2014	2,695,796	451,659	896,042	1,035,726

(Source: Statistical Yearbook 2014)

Some 20 million people depend on fisheries for most or part of their income, and exploit and use over 300 marine species and over 50 freshwater aquatic species of economic value. Approximately 25 million people live in or near forests, and derive 20-50 per cent of their income from non-timber forest products, including hundreds of species of medicinal plants and latex plants.

Biodiversity and beautiful terrestrial, coastal and island landscapes also underpin much of Vietnam's rapidly expanding tourism industry. Eco-tourism is becoming popular in protected areas, which on one hand promotes the discovery and education on protection of nature, and on the other hand brings benefits to local people providing the service. Many species of plants and animals have been associated with Vietnam's history and culture, and have become sacred and worship objects of the Vietnamese community.

In addition to these economic benefits, biodiversity supports a wide range of critically important ecosystem services. The terrestrial and coastal water vegetation helpsto regulate the climate through carbon storage, filtering air and water, decomposing waste, and mitigating the harmful effects of natural disasters such as landslides, floods, and typhoons.

The key biodiversity areas (KBAs) are not only important for biodiversity, but also for carbon storage. In Vietnam, in terms of forest biomass carbon, KBAs contain more than one fifth (0.37 Gt) of the country's total forest carbon stocks. In some places, KBAs are included as parts of SUFs (protected areas), and so are already under some form of conservation management; but this is not always the case. In general, KBAs are larger in size than individual SUFs. According to some surveys and assessments, the key biodiversity areas and biodiversity corridors which have rich forests have the highest carbon biomass, e.g. in mountainous areas of the North-East, North-West, Central region and Central Highlands.

Mangrove forests along the coast act as "green shields", reducing sea wave strength by 20-70% and helping to ensure the safety of sea dykes. In doing so, it has been estimated that mangroves save billions of Dongs in annual dyke maintenance and repair costs, while also supporting the formation of new areas at the estuaries of the Red River and Mekong River.

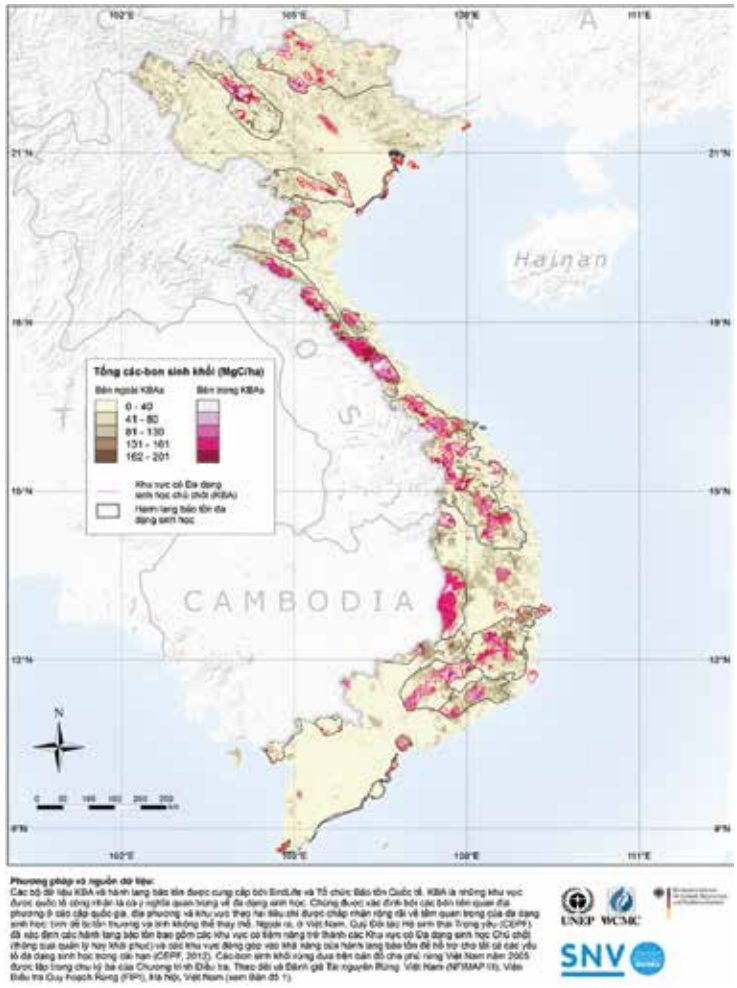


Figure 14. Relationship of forest biomass carbon, key biodiversity areas and biodiversity corridors

(Source: Mant, R., Swan. S., Anh, H.V., Phương, V.T., Thành, L.V., Sơn, V.T., Bertzky, M., Ravilious, C., Thorley, J., Trumper, K., Miles, L., 2013; Mapping the potential for REDD + to deliver biodiversity conservation in Vietnam: Preliminary analysis;developed by UNEP-WCMC, Cambridge, UK; and SNV, Ho Chi Minh City, Vietnam)

1.2. DIRECT CAUSES OF BIODIVERSITY DEGRADATION IN VIETNAM

1.2.1. Illegal and excessive exploitation of biological resources

Illegal exploitation for subsistence, recreation or commercial purposes has driven many animal species in Vietnam to the verge of extinction in the wild, and is putting severe pressure on other populations. In 2010, the Forest Protection Department confiscated over 34 tons of nearly 13,000 individual wild animals from illegal traders.

The demand for wildlife products as panacea is deep-rooted as in the case of rhino horn, tiger bone, and bear bile, and it appears that consumers are willing to pay almost any price for the products. Many targeted species have been reduced to such low levels that traders now acquire wildlife and wildlife products from neighbouring countries. For example, most pangolins found in trade in Vietnam recently have been in shipments from Malaysia, Myanmar and Indonesia, and rhino horn from South Africa. Information from CITES shows Vietnam is the biggest consumer of rhino horn in the region, while images of butchered langurs published in online newspapers in 2012 upset the public.

Trade in wild animals and their products is on the rise and isthe main extinction threat to many species. The consumption of wild animals has become popular in restaurants and they are offerred for sale openly at the market, violating laws and regulations. Over-consumption is a possible cause of the extinction of many animal species. It is estimated that Vietnam now has less than 30 individual tigers in the wild, and they are on the verge of extinction because they are living in severely fragmented and degraded forests with depleted food sources, low adaptability, and small populations, leading to inbreeding problems.

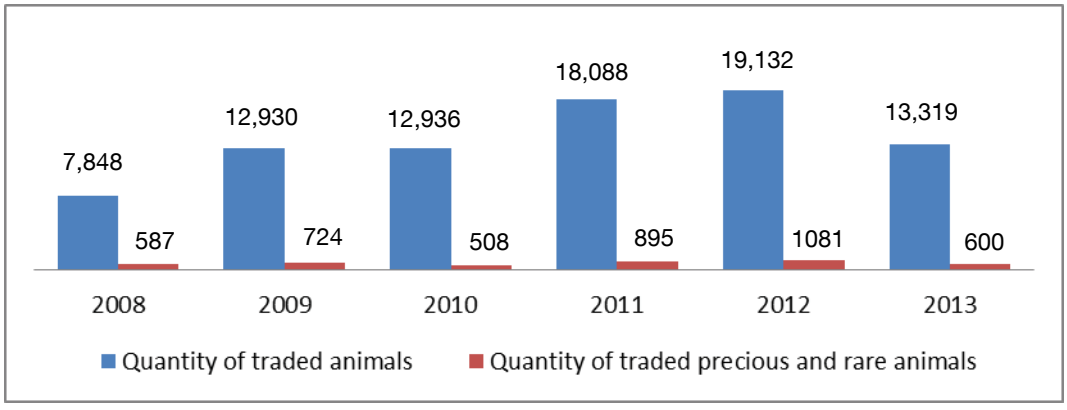


Figure 15. Annual quantity of traded wild animals

(Source: Synthesis of annual reports of FPD, Vietnam Forest Administration)

In many northern mountainous provinces, the exploitation of valuable medicinal herbs for illegal exportation across the border to China is quite common. In Cao Bang, Chinese traders have set up stations for buying and processing local medicinal materials such as cu binh voi trang, cu binh voi vang, giao co lam, hoang tinh vang, huyet dang, co nhung, and others. Many medicinal plants are smuggled into China, but their economic value and therapeutic effect is not yet clear.

The over-exploitation of plants not only affects biodiversity, but also the livelihoods of households depending on forest products. A lack of data constrains assessments of the magnitude of this threat, but its effects on many groups of plants, for instance orchids, are potentially severe. Plant species with high economic value are often particularly at risk, most notably timber species. Vietnam's forests support a great diversity of commercially valuable timber species, including Erythrophleumfordii, Dalbergiaspp., various members of the Dipterocarpaceae family (such as Dipterocarpusspp., Shoreaspp. and Hopeaspp.) and various conifers, such as Fokieniahodginsii. Stocks of most timber species have declined significantly over recent decades, although the implications of this for the long-term viability of populations of these species are not fully known. Other economically valuable plant species threatened by over-exploitation include Aquilariacrassna, which is a source of agarwood, and Panaxvietnamensis, which is used to produce a tonic.

Precious timber illegally logged in Phuoc Son, Quang Nam province
(Source: http://dantri.com.vn/, Quốc Đô)

Timber illegally logged in Bac Kan province
(Source: website of Vietnam Law, Minh Anh)

Figure 16. Some confiscated timber cases

As human populations and levels of consumption increase, inefficiency in fisheries management has led to over-fishing in many freshwater areas, which in turn results in the reduction of total catch volume. Many high-value aquatic species have been in serious decline, such as Anh vu, Lang, Chien, lobster, abalone, and scallop. Destructive fishing techniques such as the use of explosives, poisons and electric shocks are used rampantly and uncontrolled in both inland waters and the sea, posing a serious threat to natural ecosystems with high biodiversity such as rivers, streams, swamps, lakes, sea grass beds and coral reefs in coastal areas in Vietnam.

A method of fishing including small fish (Source: CWPD Project)

Using net to catch dugong (Photo: Nguyen Van Tien, 2006)

Figure 17. Some photos of over-exploitation of illegally in the South-West sea

Notably, there is a high level of poverty in areas with high forest cover such as in the North-East, North-West, Central region and Central Highlands. This is a factor contributing to illegal hunting and over-exploitation of forest and biodiversity.

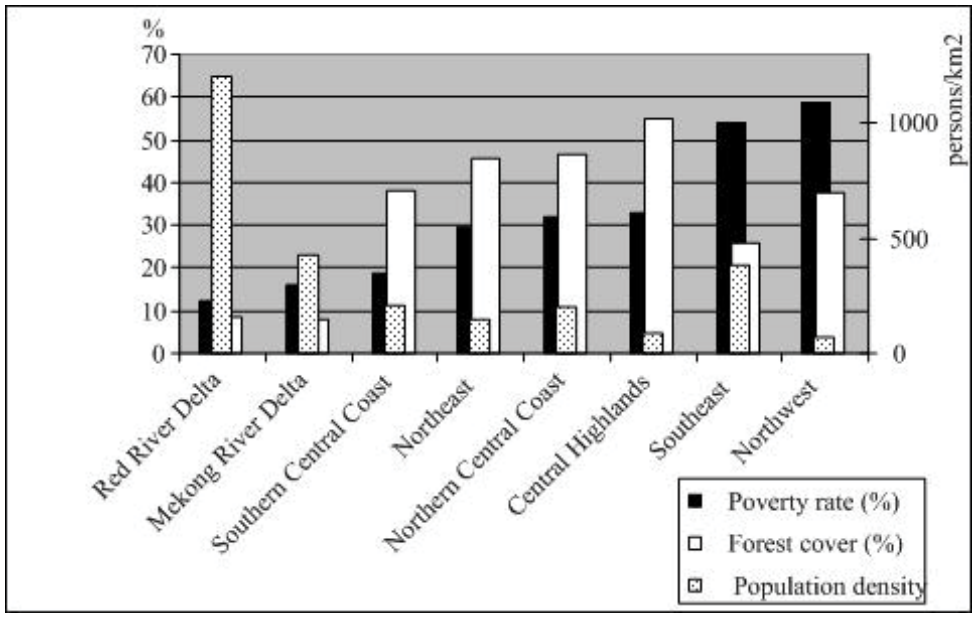


Figure 18. Correlation between population density, poverty and forest cover

(Source: FAO, 2005, Nguyen, Q.T. 2005. Re-inventing forestry agencies: Institutional restructuring of forestry agencies in Viet Nam since 1994)

Commercial logging: Forests are the key habitats for a high proportion of Vietnam's globally threatened plant and animal species. However, these forests have been the focus of excessive commercial and non-commercial logging for decades, leading to reductions in both their extent and quality, with very few areas of remaining primary forests. Annually, the Forest Protection Department seizes tens of thousands of cubic meters of round and sawn timber, which is rare and precious. There are cases where loggers blatantly carried out illegal exploitation of timber in core zones of national parks, infuriating society.

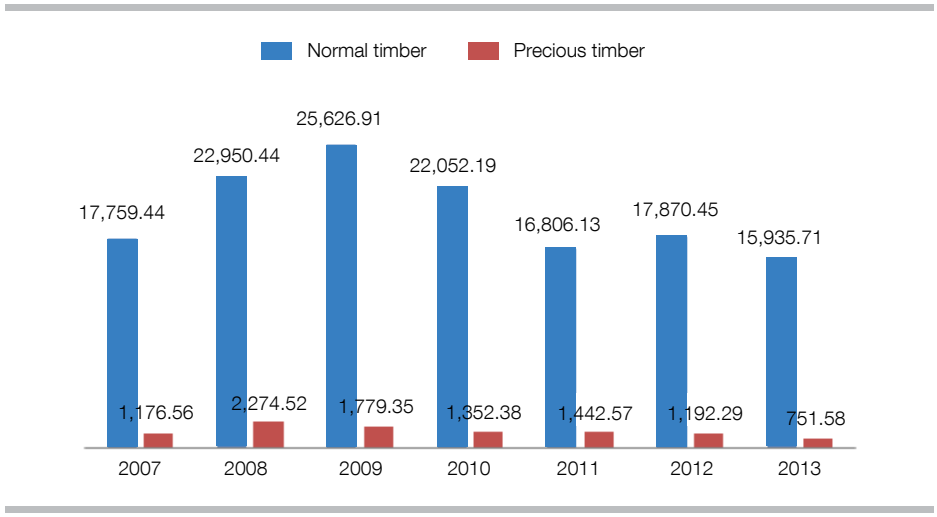


Figure 19. Annual quantity of confiscated timber (m^3)

(Source: Synthesis of FPD reports on annual confiscated forest products, 2007-2013)

Conversion of forest to cash crops: Conversion of forest to cash crop plantations is a particularly significant cause of the loss of natural forest in Vietnam. There has been extensive replacement of natural forests by a variety of cash crops, including sugarcane, tea, coffee, cocoa, rubber, cashew, and most recently cassava (for export to China to be turned into biofuels). Although reforestation programs have been carried out for many years, they tend to focus on monoculture eucalyptus and pine plantations that contribute very little to the conservation of biodiversity. In 2008, 150,000 ha of degraded semi-evergreen dipterocarp forest in the Central Highlands were allowed to be converted to rubber plantations. The area of natural forest has declined severely, and it is estimated that only half a million hectares of primary forest remains, scattered in the Central Highlands and north-central Vietnam. As domestic and export demand for many agriculture and forestry products continues to increase, the remaining forests are becoming increasingly vulnerable to conversion to cash crop plantations.

According to Vietnam Forest Administration's statistics, each year from 2003 to 2009, approximately 25,000 ha of forest were converted for other land use purposes.

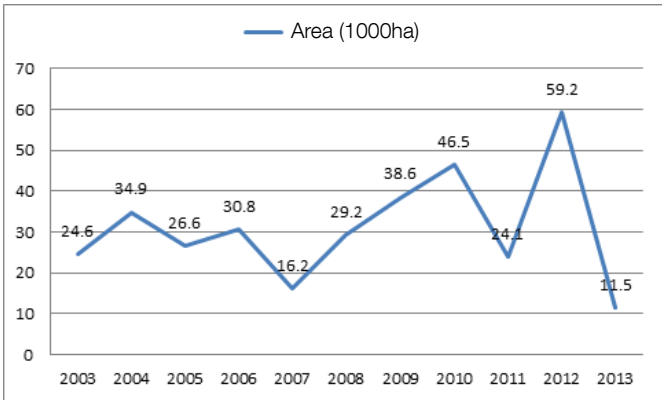


Figure 20. Conversion of forest land in Vietnam from 2002 to 2013 *(Source: FPD, 2015)*

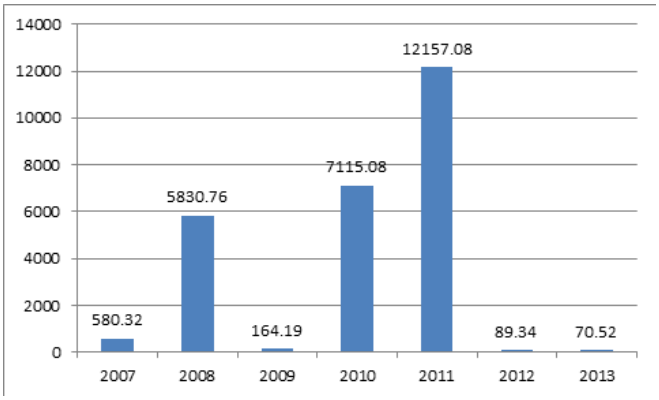


Figure 21. Area of forest converted for infrastructure building and non-agricultural purposes by year *(Source: Synthesis of forest coverage by year – FPD)*

According to data from 2005 to 2012 in the Report on Assessment of 10 Years of Implementation of Law on Forest Protection and Development (Pham Xuan Phuong et al., 2013), the forest area annually converted for other use purposes has increased.

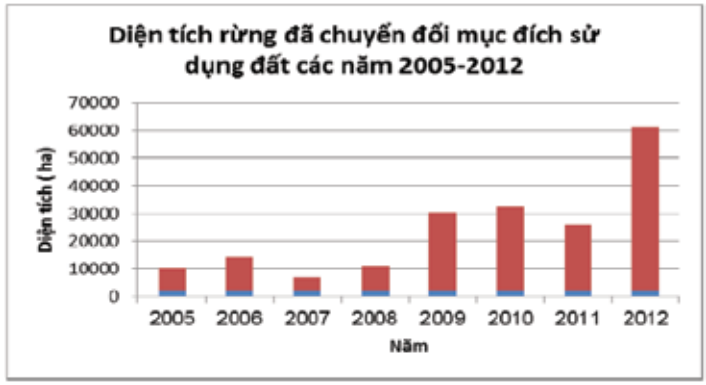


Figure 22. Table of forest area converted for other use purposes from 2005 to 2012

(MARD, Report on Assessment of 10 Years of Implementation of Law on Forest Protection and Development, 2013)

Deforestation due to shifting cultivation: This is one of the direct threats to forest loss and degradation. Although shifting cultivation is correlated with forest degradation and loss in some parts of the country, there is also evidence that, in other areas, shifting cultivation is being practised with minimal impacts on biodiversity.

Agricultural expansion and intensification: Economic development and population growth have led to an intensification and expansion of permanent agriculture in many deltas in Vietnam. In the Mekong Delta, especially Dong Thap Muoi and Long Xuyen quadrilateral, almost all natural grasslands have now been converted for intensive rice cultivation, affecting habitats of several endangered species, and eroding some important wild genetic resources of Vietnam.

Conversion of coastal habitats: Inter-tidal mudflats in Vietnam are the feeding areas for hundreds of aquatic species, migratory and resident shorebirds. The conversion of inter-tidal mudflats through mangrove afforestation at the estuary of the Red River is a potentially serious threat to the most important areas for migratory shorebirds, such as black-faced spoonbill (Platalea minor).

Many coastal mangroves, lagoons and inter-tidal mudflats have undergone widespread and rapid conversion to ponds for farming of shrimp, clam and other aquatic species, and as a result, primary mangrove forests in many provinces have almost vanished. From 1943 to 2005, at least 220,000 hectares of mangrove forests were lost because of deforestation and aquaculture development. Thousands of hectares of coral reefs and sea grass beds in Vietnam have been lost due to marine exploitation or aquaculture. The need for fish and shrimp pond owners to generate rapid financial returns is driving a shift from extensive aquaculture to unsustainable forms of intensive aquaculture. This, in turn, is leading to mangrove depletion, the loss of habitat for many water birds, and environmental pollution.

Photo: Nguyen Huy Yet, 2010

Photo: Nguyen Huy Yet, 2010

Development of aquaculture using cages and rafts in Ha Long Bay, Bai Tu Long (Quang Ninh)

Mangrove forest converted into shrimp and crab farms in Xuan Thuy core zone

Tidal flats, with no mangrove, in the ecological restoration zone of Xuan Thuy National Park, which was converted into a clam farm

Figure 23. Some pictures of the conversion of coastal ecosystems to aquaculture sites

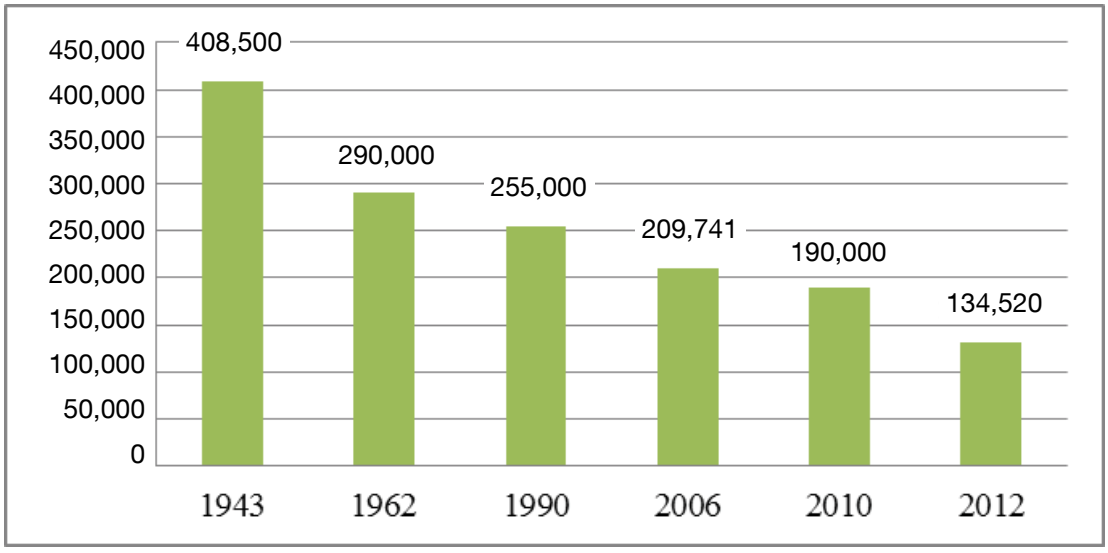


Figure 24. Progressive reduction of mangrove forest areas in Vietnam from 1943 to 2012

(Source: MONRE, 2014. Fifth National Report to the CBD)

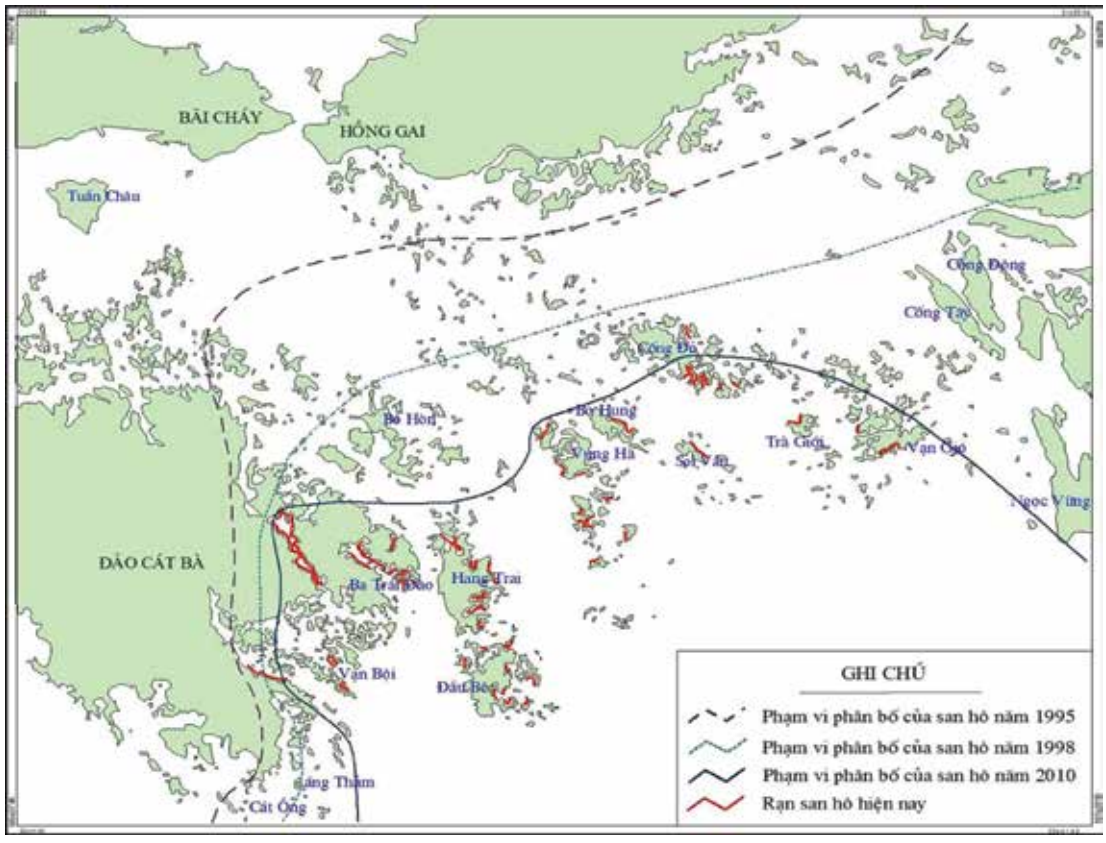


Figure 25. Changes in distribution of coral reefs in Halong Bay, Cat Ba from 1995 to 2011

(Source: Nguyen Huy Yet, 2011)

Table 4: Reduction of coral reefs in some coastal regions in Vietnam

No.	Region	Quantity of survey sites	Reduction of live coral reefs (%)	Reduction of hard coral reefs (%)	Reduction of soft coral reefs (%)	Duration
1	Cu Lao Cham	5	-16.8	-10.4	-6.4	1994-2008
2	Van Phong	5	-2.8	-2.7	-0.1	2003-2006
3	Nha Trang	8	-16.2	-13.1	-3.1	1994-2007
4	Ninh Hai	6	-6.3	-6.5	-0.2	2002-2007
5	Ca Na	5	-6.3	-4.9	-1.4	1995-2006
6	Con Dao	8		-16.8	-12.9	1994-2004
7	Phu Quoc	6		-8.9	-0.1	1994-2007

Source: Nha Trang Oceanography Institute (2008) and Nguyen Huy Yet (2010)

Table 5: Quality of coral reefs in Vietnam (World Natural Resource Institute, 2008)

Type	Coverage of live coral reef	% area
Very good	>75% live coral reef	1
Good	50-75% live coral reef	26
Relatively good	25-50% live coral reef	41
Bad	<25% live coral reef	31

Infrastructure development: The urban, industrial and infrastructure development that has accompanied Vietnam's rapid economic growth has often had severe direct and indirect impacts on natural habitats. The extension of the road network has bisected several national parks and protected areas, causing fragmentation of habitats and creating barriers to the dispersal of many wild species. New roads also strengthen economic links between remote rural areas and urban centres, facilitating the expansion of wildlife trade networks and placing increased pressure on biodiversity.

Upto now, there are more than 1,020 hydropower plants (with total capacity of 24,246 MW), of which 138 plants are on the main basins of large rivers and in hydropower planning projects approved by Ministry of Industry and Trade. Hydropower dams and reservoirs often cause flooding in important terrestrial habitats that were formerly natural forests, while creating barriers for migratory fish, altering the biological behaviour of aquatic species, and causing significant impacts on rivers downstream from the dams, even to coastal estuaries. Many hydropower reservoirs with artificially managed discharges cause major alterations to seasonal flow regimes, causing harm to society, the economy, and particularly affecting downstream ecosystems. According to some statistics, hydropower plants on the Dong Nai River have destroyed over 15,000 ha of natural forests (FCPF, 2011).

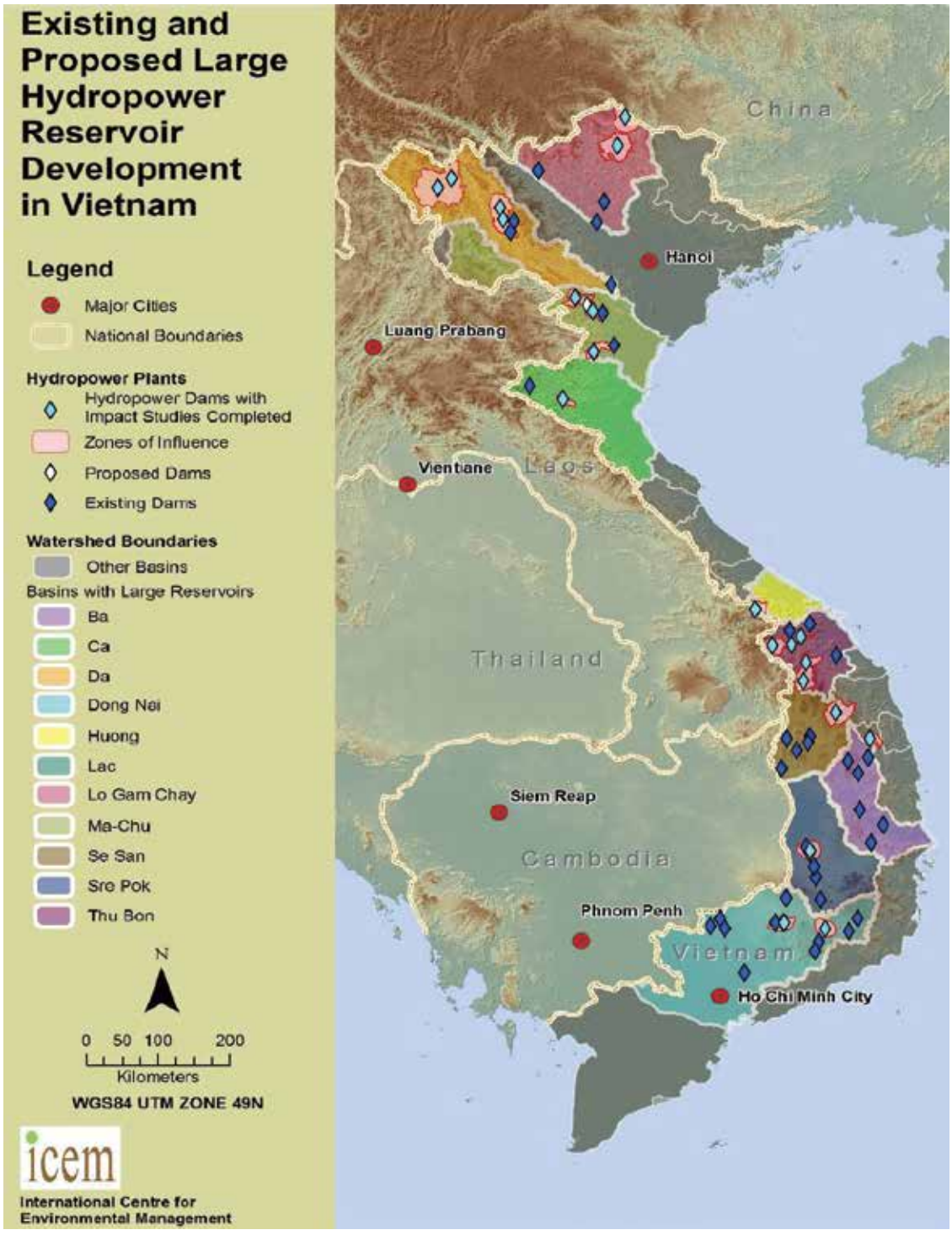


Figure 26. Map of Existing and Proposed Large Hydropower Reservoir Development in Vietnam

(Source: Carew-Reid, Jeremy, Josh Kempinski and Alison Clausen. 2010)

Mining: Mining for mineral resources and construction materials has caused significant loss of natural habitat. Quarrying of limestone for cement manufacture is a particular threat to highly biodiverse limestone karsts, such as those in Kien Giang, which also happen to be among the richest in terms of invertebrate endemism. Over exploitation for sand and gravel production in river beds has destroyed the habitats of many aquatic species and altered the flow of many rivers. Moreover, several mining techniques can lead to pollution of aquatic ecosystems due to the deposition of toxic chemicals, causing a negative impact on biodiversity and degradation in the quality of wetland ecosystems.

1.2.3. Pollution

Rapid urbanization and industrialization have negatively affected water quality. Untreated wastewater from both domestic and industrial sources is frequently discharged into rivers and lakes, having negative impacts on biodiversity in these natural ecosystems. Agricultural intensification and increasing use of agrochemicals of different origins have contributed to the decline of bird and insect populations in rural and suburban areas. Many useful birds eradicating pests have been extinguished, leading to outbreaks of disease in the field. The industrial farming of catfish and basa in high density in Mekong Delta is also a cause of organic pollution in many water areas, affecting natural ecosystems and aquatic communities in these areas.

1.2.4. Introduction of Invasive Alien Species

To date, no comprehensive assessment of invasive alien species (IAS) exists for Vietnam. However, there is increasing concern for the potential of IAS to damage biodiversity, human health and the economy, particularly after the introduction of the golden apple snail *(Pomacea canaliculata)* in the late 1980s in Vietnam, which has now spread nation-wide. By 1997, it had affected more than 132,000 ha of rice fields, causing the loss of millions of USD due to reduced rice production. According to statistics, there are about 94 species of alien plants in Vietnam, including 42 invasive species and 12 common invasive fast growing tree species such as Mai duong *(Mimosa pigra)* and Beo nhat ban *(Eichhornia crassipes)*. Of these, *Mimosa pigra* was first observed in Tram Chim National Park (Dong Thap province) and has now found its way to many areas, becoming a serious threat in many wetlands across the country. In 2009, the Ministry of Agriculture and Rural Development published a list of 48 alien aquatic species introduced by various means; of these, 14 species were considered to have adverse impacts on aquatic biodiversity. In 2013, MoNRE and MARD identified a list of 25 species classified as invasive alien species, 15 species as having invasive risk which have been already appreared in Vietnam, and 41 species as having invasive risk which have not been appeared in Vietnam yet.

Table 6: List of invasive alien species in Vietnam[4]

No.	Vietnamese name	Scientific name
	Invertebrates	
1	Bọ cánh cứng hại lá dừa	*Brontispa longissima*
2	Ốc bươu vàng	*Pomacea canaliculata*
3	Ốc bươu vàng miệng tròn	*Pomacea bridgesii*
4	Ốc sên châu Phi	*Achatina fulica*
5	Tôm càng đỏ	*Cherax quadricarinatus*
	Fish	
1	Cá ăn muỗi	*Gambusia affinis*
2	Cá hổ	*Pygocentrus nattereri*
3	Cá tỳ bà (cá dọn bể)	*Hypostomus punctatus*
4	Cá tỳ bà lớn (cá dọn bể lớn)	*Pterygoplichthys pardalis*
5	Cá vược miệng bé	*Micropterus dolomieu*
6	Cá vược miệng rộng	*Micropterus salmoides*
	Reptiles	
1	Cá sấu Cu-ba	*Crocodylus rhombifer*
2	Rùa tai đỏ	*Trachemys scripta*
	Mammals	
1	Hải ly Nam Mỹ	*Myocastor coypus*

[4] Source: MONRE, MARD (2013), Joint-Circular 27/2013/TTLT-BTNMT-BNNPTNT dated Sep. 26, 2013 on regulating the criteria to identify invasive alien species and listing invasive alien species

1.2.5. Climate change

Vietnam is one of five countries most affected by global climate change. In this context, fragmented ecosystems will have a weaker response to these changes and may encounter unavoidable loss of species at a high rate. According to the scenario of climate change and sea level rise for Vietnam (MONRE, 2012), a 75 cm to one metre rise in sea level would cause about 20-38% of the Mekong Delta and about 11% of Red River Delta be in undated and seriously affect 78 of Vietnam's 286 'Critical Natural Habitats' (27% of the total), 46 protected areas (33%), nine biodiversity sites of national and international importance (23%), and 23 other important biodiversity sites. Many species will come under increasing pressure as the spatial distribution of habitats begins to change, food supplies are altered and extreme events such as floods, droughts and storms become more frequent. Some vertebrate species may become extinct over the next century as a result of climate change. However, the impact of climate change on Vietnam's biodiversity has not yet been fully studied.

1.2.6. Forest fires

In Vietnam, every year hundreds of fires occur and destroy thousands of hectares of forests, causing damage worth hundreds of billions VND, having a serious impact on the environment and biological communities in forest ecosystems. According to the Forest Protection Department, in the years 2006-2009, the area of forest disturbed by fires nation-wide was 1,400ha/year on average. Particularly in the first eight months of 2011 alone, there were 214 fires and 263 cases of violation of regulations on forest fire prevention and fighting.

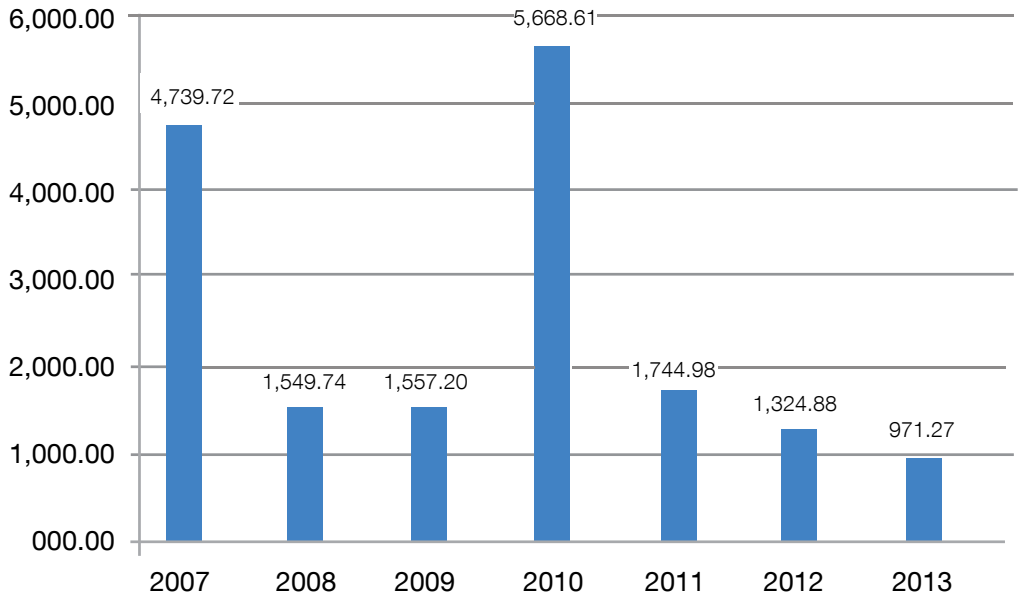


Figure 27. Amount of forest loss due to forest fires from 2007 to 2013

(Source: FPD, 2015)

The large forest fire occurring in Hoang Lien National Park (Lao Cai province) during eight days of February 2010, burned about 200 hectares of forest and 700 hectares of shrubland. Forest fires in Tram Chim National Park (Dong Thap province) in April 2010 destroyed 200 hectares of forest, threatening the habitat of the Sarus crane.

Actual forest fires in recent years show that there is a lack of modern facilities for fighting forest fires in Vietnam, which makes fire control very difficult, especially in forests on high mountains such as those in Hoang Lien National Park. Besides the need for more modern fire fighting equipment to protect forests, it is also important to strengthen education and enhance the control of activities of people entering forests for farming or resource exploitation.

1.3. CONSERVATION AND SUSTAINABLE USE OF VIETNAM'S BIODIVERSITY

1.3.1. Policy and legal framework

Vietnam has one of the most well-developed policy and legal frameworks for biodiversity conservation in South-east Asia; demonstrating the Government's commitment to international treaties such as the Convention on Biological Diversity (CBD), the Convention on Wetlands of International Importance (Ramsar Convention), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Legal instruments on biodiversity were first developed in the early 1960s, providing the foundations for the establishment of Cuc Phuong National Park (NP), the first protected area in Vietnam. Many important laws in the natural resource sector have been enacted, including the *Law on Forest Protection and Development 1991* (amended in 2004); *Land Use Law*, 1993 (amended in 1998, 2003 and 2013); *Law on Environmental Protection, 1993* (amended in 2005 and 2014); *the Water Law,* 1998 (amended in 2012); and *Law on Fisheries*, 2003. In particular, *the Law on Biodiversity,* 2008 marks an important milestone for biological conservation. The Law on Biodiversity elevates the principles and priorities of biodiversity conservation to the level of an independent law, which specifies the principles and priorities of biodiversity conservation at all levels, from national and ministerial to local levels; creating the legal basis for local community involvement in the conservation of natural resources through new mechanisms of co-management and benefit sharing.

The Biodiversity Action Plans (BAPs) was approved such as BAP 1995 and BAP 2007. This legal framework coordinates all activities for biodiversity conservation in Vietnam, from central to local levels. In addition, the Government has also issued a number of strategies and plans related to biodiversity conservation and development.

Table 7: Recent National Strategies, Programmes and Plans for Biodiversity Conservation

Year	Name of Strategy/ Project	Objectives related to Biodiversity Conservation	Outcomes Achieved
2003	Strategy to Manage the System of Protected Areas in Vietnam to 2010	- Ensure natural resources are well developed and managed and that biodiversity is conserved; - Ensure close cooperation among different sectors at all levels in the management of Protected Areas and buffer zones; - Ensure the conservation of genes, species and ecosystems, and prevent all threats from damaging these resources; - Accord priority to the development of management plans and the implementation of rapid and effective action to conserve threatened sites where there is a risk of extinction to indigenous species or damage to ecosystems	- In 2006, MARD conducted a survey of SUF system which is a basis for PA system planning - PAs developed their management plans with support of international conservation organizations - The program of scientific research has been promoted; Some national parks have built the sample storage facilities, botanic garden and published many documents on biodiversity. - Developed materials and organized awareness-raising classes for residents and communities living in and around protected areas. - Promotion of ecotourism. According to reports from several national parks, tourism revenue has increased. The development of ecotourism in some NPs has contributed to socio-economic development and created jobs for local people.

2004	Strategy to Protect National Environment to 2010 and Orientation to 2020	- Restore 50 per cent of mining areas and 40 per cent of severely degraded ecosystems; - Increase forest cover to 43 per cent of total land area; - Restore 50 per cent of degraded watershed forests; - Increase the total area of PAs by 50 per cent, with a particular focus on Marine Protected Areas and Wetland Protected Areas - Restore the area of mangrove forests by 80% of that in 1990.	
2004	Protecting and Developing Benefits of Marine Products Programme to 2010	- Protect and conserve marine biodiversity, especially species of high scientific and economic value; - Maintain the diversity and uniqueness of marine ecosystems; - Derive benefits through sustainable aquacultural development.	- Issued the inland water protected area plan to 2020 - Issued the marine protected area plan to 2020
2006	National Water Resource Strategy to 2020	- Protect the integrity of aquatic ecosystems and coastal areas; - Sustainably develop water resources by promoting the protection and development of forests, in particular, watershed forests.	
2006	Comprehensive Project on Primary Investigation and Management of Marine Resources and Environment to 2010, Vision to 2020	- Obtain adequate and comprehensive data on biodiversity and the benefits of marine products; - Plan and implement a system of Marine Protected Areas for sustainable development.	Developed and Implemented Project 47: - Conducted basic surveys of marine species that have economic value; built a database of natural resources and marine environments - Planned a national marine protected area system, under which some marine protected area were established.

2007	Vietnam Forestry Development Strategy, 2006-2020	- Establish, manage, develop and sustainably use 16.24 million hectares of land for forestry; - Increase the percentage of forest land to 42-43 percent by 2010, and 47 percent by 2020; - Ensure stakeholder participation in forestry development, environmental protection, biodiversity conservation and the provision of environmental services, in order to help eradicate hunger, eliminate poverty and enhance living standards in rural mountainous areas.	- Forest cover increased each year - In process of implementing PES programs
2008	Project "Protecting Valuable Endangered Aquatic Speciesto 2015, Vision to 2020"	- Prevent the decline of threatened species; - Initiate recovery programmes for valuable endemic aquatic species; - Conserve biodiversity and sustainably develop fisheries and aquaculture, with community participation.	- Conducted the project "Storage of aquatic genetic resources and varieties". - Up to now, 50 aquatic lineages and 60 aquatic varieties have been preserved. Researched and conducted successful artificial reproduction and produced breeds of Semilabeo obscurus, Catlocarpio siamensis, Hippocampus kellogi and others which are precious and rare species in the Red Book of Vietnam (2007).
2008	Planning the System of Inland Water Protected Areas to 2020	- Design and implement a system of 45 Inland Water Protected Areas; - Develop detailed plans for five IWPAs at national level.	- Developed detailed plans for five national-level inland water protected areas. - There has not been any inland water protected area established yet.

2010	Planning the System of Marine Protected Areas to 2020	- Set up a system of 16 marine protected areas with a total area of 169,617 ha	- Up to 2014, 9 (of 16) marine protected areas have been established, including: Cat Ba, Bach Long Vy, Con Co, Cu Lao Cham, Nha Trang Bay, Nui Chua, Hon Cau, Con Dao and Phu Quoc
2010	Vietnam Fisheries Development Strategy to 2020	- Industrialization, modernization and sustainable development of the fisheries sector, improve peoples' material life and the spirit of the fishermen, while protecting the ecological environment and defence and security of seas and islands of the country. - Economic fisheries contribute 30-35% of GDP in the agricultural sector - forestry - fishery - 5 million fisheries workers to have per capita income three times higher than at present, and 40% of fisheries workers undertaken training.	
2011	National Climate Change Strategy	- Protect and develop forests in a sustainable way, enhancing the capacity for absorbing greenhouse gases and conservation of biodiversity.	- Have been implementing the REDD+ Programme
2012	Protecting and Developing Benefits of Marine Products Programme to 2020	- By 2015, establish and put into operation 10 marine protected areas and 19 inland water protected areas. By 2020, complete and put into operation the planned system of marine and inland water protected areas in Vietnam. - By 2015, complete the planning of areas with a ban on fishing, areas with banned fishing periods, and publish a list of banned objects and occupations.	- At present, only 9 (of 16) marine protected areas have been established. - No inland water protected areas have been established yet - Some coastal provinces have developed plans for areas where fishing is prohibited and seasonally prohibited, and issued lists of prohibited fisheries jobs and activities.

2012	Strategy to Protect National Environment to 2020 and Orientation to 2030	- Mitigate the degradation and depletion of natural resources; curb the rate of decline of biodiversity	
2012	Project to prevent and control invasive alien species in Vietnam to 2020	- To ensure that invasive alien species are investigated, periodic assessments conducted, scheduling and control under the provisions of law; - Prevent and control spreading, mitigate the harmful effects of some serious invasive alien species in Vietnam; - Effectively control and manage the importation, cultivation and development of exotic species in Vietnam, in order to prevent negative impacts on the environment and biodiversity; - To ensure that 80% of communities in the provinces and cities directly under the central propaganda receive regular awareness about the identification, prevention and control of invasive alien species.	

2013	Strategy on sustainable use and exploitation of marine environmental protection by 2020, vision to 2030	- Meet requirements of infrastructure and technical data for marine resources and environment; provide timely and reliable forecasts of natural disasters, climate change, support for marine economic development, social and economic development of coastal areas and on islands; - Reducing the degree of degradation and depletion of natural resources and halt pollution in coastal areas and islands; - Increase resilience to climate change, maintain ecological functions and biological capacity of marine ecosystems in order to protect marine biodiversity and resources; - Build capacity and strengthen the management of basic investigation, exploitation and use of natural resources in a sustainable way and to protect the marine environment.	
2013	National Action Plan on marine product exploitation management (draft)	Period 2014-2017: - Total number of trawlers reduced tounder15%. - At least eight coastal provinces apply community-based inshore management mechanisms Period 2018 - 2025: - Total number oftrawlers reduced to under 12%. - Control the number of vesselsin line with resources' allowance ability, vocation structure on each coast; and particularly, reduce the number of inshore fishing boats - More than 28 coastal provinces apply community-based inshore management mechanisms	- Some coastal provinces have applied pilot co-management of coastal fisheries to protect marine resources in the World Bank's Project: Coastal Resources for Sustainable Development

2014	Strategy for management of special use forest, marine protected areas and inland water protected areas in Vietnam by 2020, vision to 2030	- By 2020, the area of special use forests, inland water protected areas and marine protected areas accounts for 9% of total terrestrial area and 0.24% of Vietnam's sea. - By 2020, special use forest, inland water protected areas and marine protected areas apply new management methods such as co-management and benefit-sharing. - Control precious and rare wildlife in special use forest, inland water protected areas and marine protected areas; conserve and develop the population of threatened, precious and rare wildlife species - Implement international commitments to conserve nature and biodiversity by implementing programs and projects to build capacity for management of special use forest, inland water protected areas and marine protected areas.	
2014	National Biodiversity Conservation Master Plan by 2020, orientation to 2030	- Ensure that key natural ecosystems, endangered species and genetic resources are sustainably conserved and developed; maintain and develop ecosystem services that can adapt to climate change to ensure the national sustainable development.	- Some provinces/centrally-run cities developed their provincial biodiversity conservation plans
2015	Project to protect and develop coastal forests to mitigate climate change during period 2015-2020	- Protect 310,695 ha of current coastal forests - Newly plant 46,058 ha of forest, increase total coastal forest area upto 356,753 ha by 2020 and increase forest cover from 16.9% (2014) to 19.5% by 2020.	

1.3.2. Institutional arrangements

Article 6 of the Biodiversity Law 2008 stipulates that: (i) the Government shall be responsible for the state management of biodiversity; (ii) the Ministry of Natural Resources and Environment is responsible to the Government for performing the state management of biodiversity; (iii) ministries and ministerial-level agencies shall perform the state management of biodiversity as assigned by the Government within their scope of powers and duties; (iv) People's Committees at all levels shall implement the state management of biodiversity as assigned by the Government within their scope of powers and duties.

At the national level, the agencies that are directly involved in biodiversity management include the Biodiversity Conservation Agency (BCA-MONRE), Department of Nature Conservation under Forest Protection Departments (FPD-MARD), Department of Aquatic Resources conservation and Development under Administration of Fisheries (MARD). The administration of protected areas is based on ecosystem type. Protected areas within terrestrial, inland water and marine ecosystems fall within the remit of the Ministry of Agriculture and Rural Development (MARD). Protected areas within wetland ecosystems, including wetlands listed under the Ramsar Convention, are the responsibility of MoNRE. To date, management of protected areas is decentralised to the lowest appropriate level (provincial and district people's committees). Responsibility for individual protected areas lies with their respective PA management boards, while there is an exception for six national parks whose boundaries span more than a single province, for which management responsibility remains entirely within MARD. The division of tasks and decentralization in PA management has encountered overlaps and shortcomings, requiring a need for establishment of one single PA management unit in Vietnam.

At provincial level, provincial authorities, DONREs, and DARDs are key agencies with responsibility for implementation of national policies and plans on biodiversity.

Research and training facilities on biodiversity nation-wide have conducted various scientific studies and achieved important outcomes such as the study results on the biodiversity status of all ecological regions in Vietnam, as well as support to developthe capacities and skills for researchers and biodiversity managers.

In addition to these Government institutions, a considerable number of national and international non-governmental organizations are involved in biodiversity conservation, e.g the Vietnam Association for Conservation of Nature and Environment (VACNE), the Vietnam Forestry Science and Technology Association (VIFA), Center for Natural Resources and Environmental Studies (CRES), Education for Nature-Vietnam (ENV), PanNature, IUCN, Birdlife International, World-Wide Fund for Nature (WWF), Wildlife Conservation Society (WCS), Fauna and Flora International (FFI), Asian Turtle Program (ATP), People Resources and Conservation Foundation (PRCF), and others.

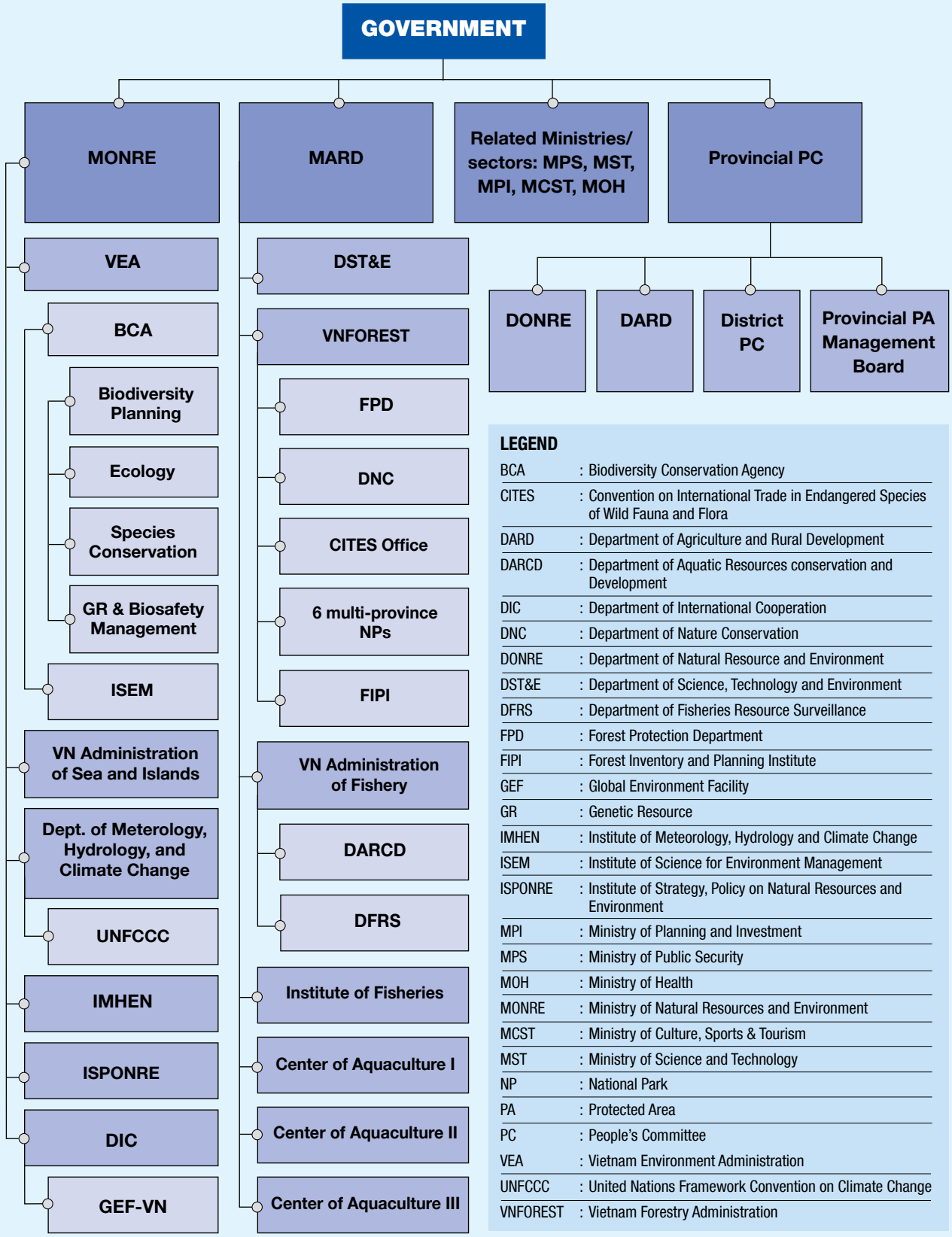


Figure 28. Organizational structure of biodiversity state management

1.3.3. Conservation and sustainable use of biodiversity

1. In-situ Conservation

To date, Vietnam's biodiversity has been conserved inside and outside of protected areas (PAs). The system of terrestrial protected areas includes 164 special-use forests (SUF) with an area of 2,265,754 ha (7.2% of the total land area) with 30 national parks, 58 nature reserves, 11 conservation sites, 45 landscape protection sites and 20 sites for scientific research and experiment (FIPI, Report on review and assessment of SUF system, 2006, National Biodiversity Report 2011). Of these, 80% of SUFs (except forests for scientific research and experiment) have their own management boards.

Table 8: Protected areas in the SUF system

Type		Quantity	Total area (ha)
National Park		30	1,077,236
Natural protected area	Nature Reserve	58	1,060,959
	Species and Habitat Conservation Area	11	38,777
Landscape Protection Area		45	78,129
Forest for scientific research and experiment		20	10,653
Total		164	2,265,754 (7.2%)

(Source: FIPI, Report on review and assessment of SUF system, 2006)

Currently, the classification of protected areas is under different laws, e.g. SUF classification is under the Law on Forest Protection and Development, and the classification of in-land PAs and marine PAs is under the Fisheries Law. Therefore, protected area maps have been developed by MARD pursuant to these laws. Recently, MONRE has also developed a map of protected areas under the Law on Biodiversity.

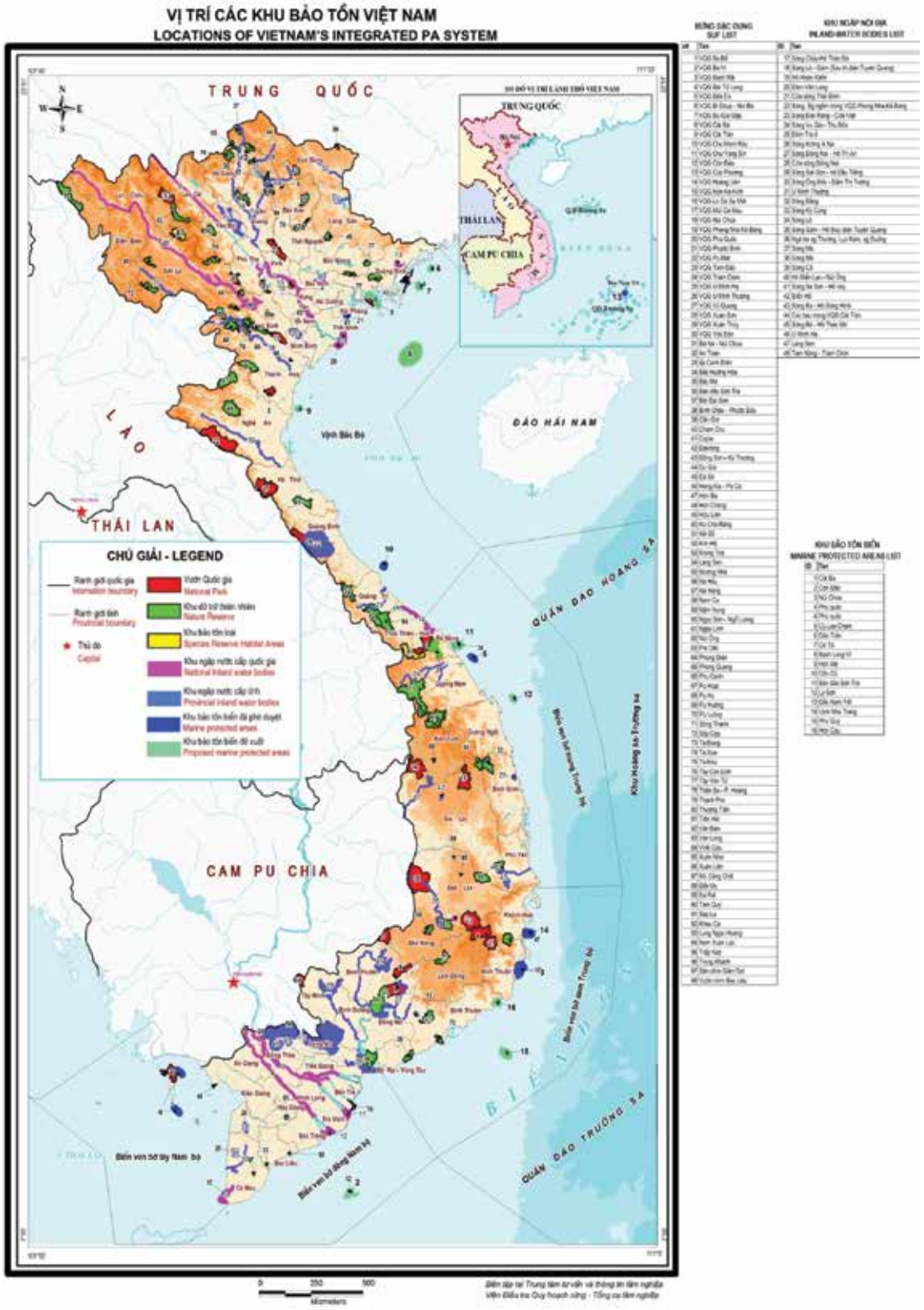


Figure 29.Vietnam Protected Area System (under the classification of Law on Forest Protection and Development and Law on Fisheries)

(Source: FIPI, 2012)

Figure 30. Map of protected areas (under classification of the Law on Biodiversity

(Source: BCA, 2013)

Vietnam's forest ecosystems, which are most biodiverse, are home to the majority of the species of wild plants and animals. Since 1990, thanks to the reforestation program, the forest cover has increased every year, reaching 41.5% in 2014, but it is still lower than targeted, as the bare land area is still more than 2 million hectares.

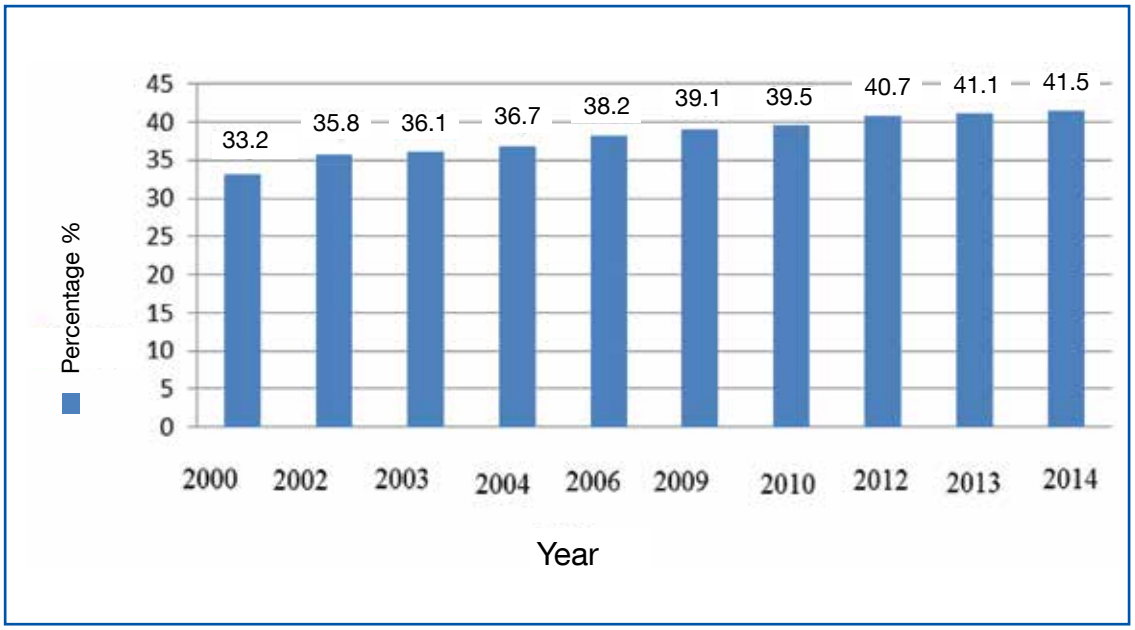


Figure 31. Progress of forest coverage

(Source: Report on Forest area, Vietnam Forestry Administration, 2015)

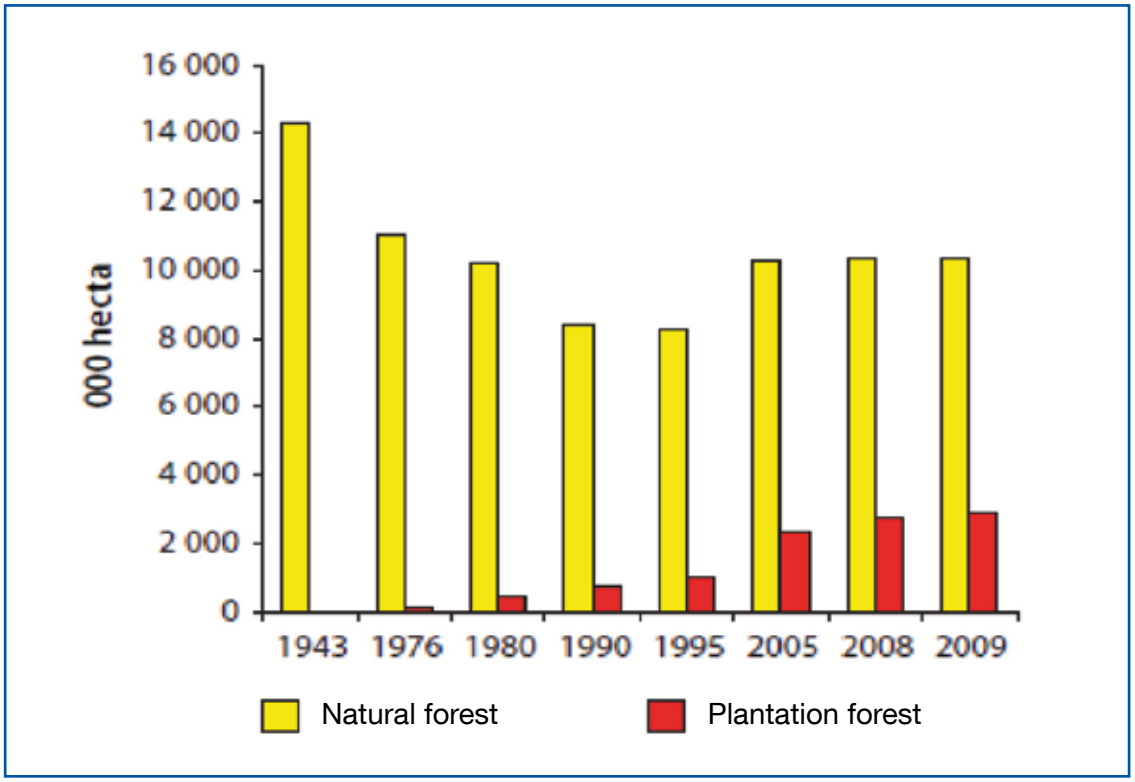


Figure 32. Forest area by years (from 1943 to 2009)

(Source: De Jong etal, 2006; Data of 2002, 2009, 2010 - Vietnam Forestry Administration)

Table 9: Changes in forest area and coverage in Vietnam (period 1990-2014)

Year	Forest Area (1000 ha)			Forest coverage (%)
	Natural Forest	Plantation Forest	Total	
1990	8,430	745	9,175	27.8
1995	8,252	1,050	9,302	28.2
2000	9,444.2	1,491	10,915	33.2
2002	9,865	1,919.6	11,785	35.8
2003	10,005	2,090	12,095	36.1
2004	10,088.3	2,218.6	12,306.9	36.7
2006	10,177.7	2,486.2	12,663.9	38.2
2009	10,339.3	2,919.5	13,258.8	39.1
2010	10,304.8	3,083.3	13,388.1	39.5
2911	10,285	2,852	13,515	39.7
2012	10,423.8	3,438.2	13,862	40.7
2013	10,398.16	3,556.294	13,954.454	41.1
2014				41.5

(Source: Synthesis of FIPI and FPD's Reports of annually forest area)

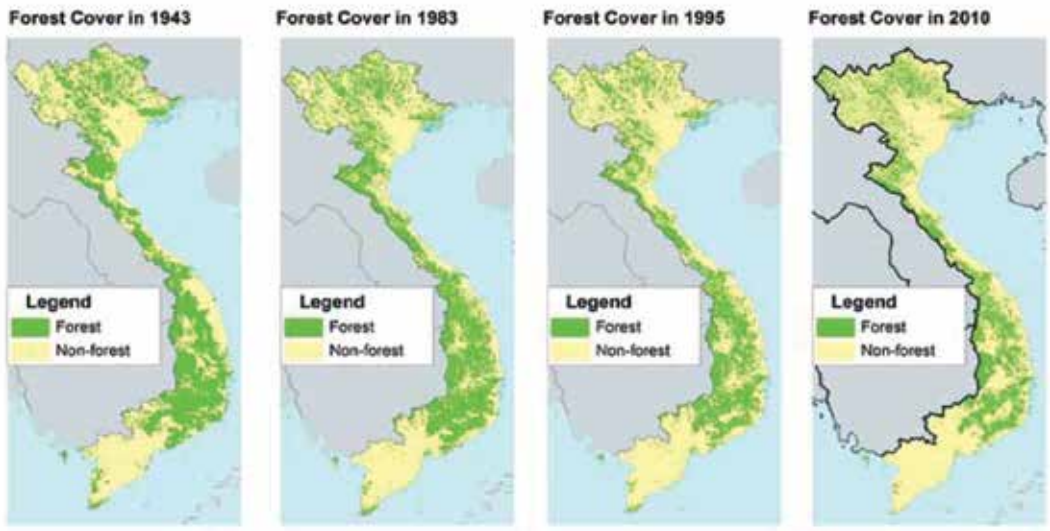


Figure 33. Forest cover from 1943 to 2010

(Source: Development of map of ecosystems in Vietnam, BCA, WWF; Stockholm University, 2013)

Conservation of other water ecosystems is also planned. Forty-five Inland Water Protected Areas have been established in total under the Fisheries Law (2003) and Decision No. 1479/QĐ-TTg dated 13 October 2008 of the Prime Minister. Sixteen Marine Protected Areas covering a total area of 169,617 ha are to be established by 2020, under the Fisheries Law (2003) and Decision No. 742/QĐ-TTg dated 26 May 2010 of the Prime Minister. Upto 2014, there were 9 Marine Protected Areas established including Cat Ba, Bach Long Vy, Con Dao, Hon Cau, Nha Trang Bay, Cu Lao Cham, Nui Chua, Phu Quoc, and Con Co. However, there are not yet any inland water protected area established.

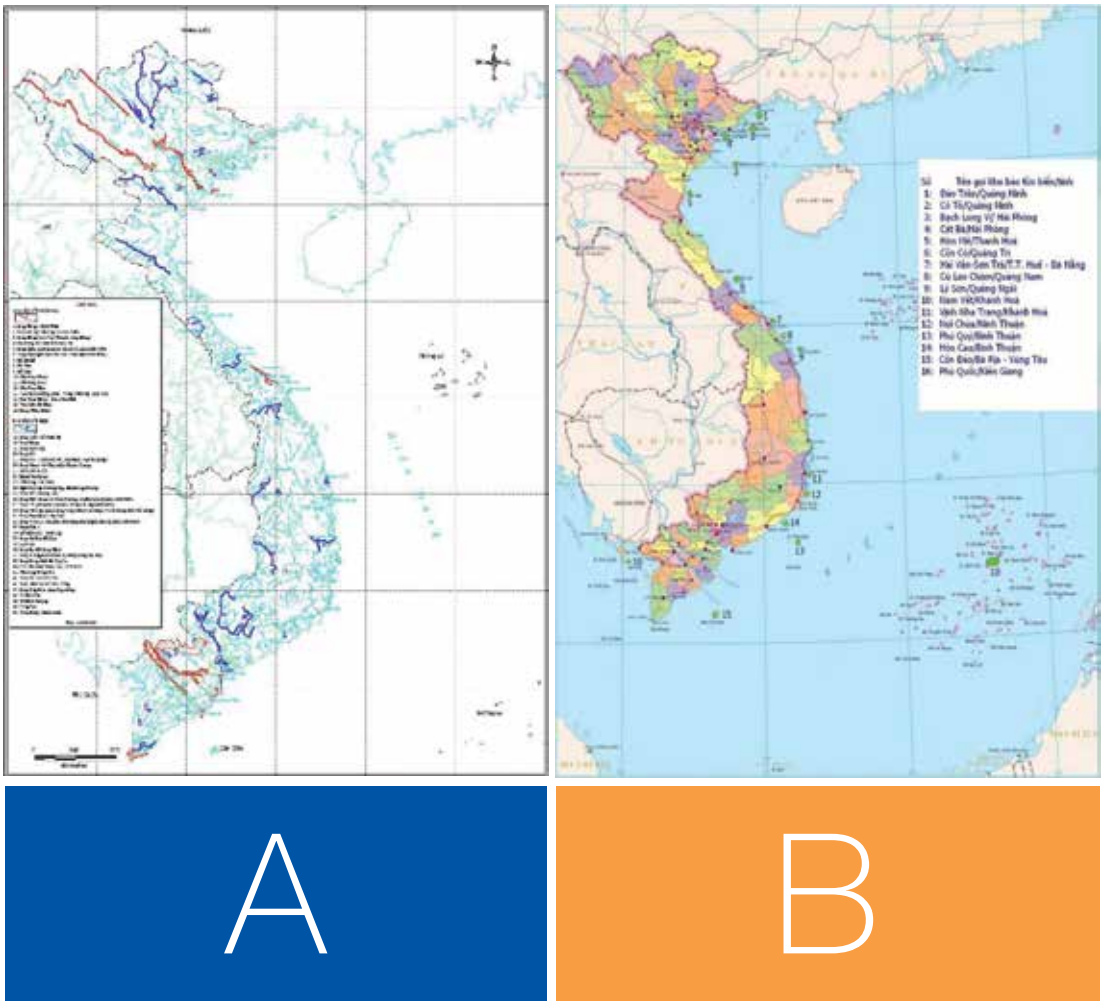


Figure 34. Map of marine PA system (A) and inland water PA system (B)

(Source: Department of Fisheries Exploitation and Protection, and IEBR)

The conservation of biodiversity outside of protected areas plays a very important role. A number of programs and projects in the past few years have been developed and implemented to create ecological connectivity through the wider landscape, particularly in the central region. Vietnam is currently participating in the ADB-supported Greater Mekong Sub-region Biodiversity Conservation Corridors Project. Since 1998, MARD has developed national standards for sustainable forest management, based on

the principles and standards of the Forest Stewardship Council (FSC). In 2007, only one forestry company had received FSC certification. Now, over 100 companies under different types of ownership in the forest plantation and timber-processing sector have been certified.

Species conservation is implemented primarily through the protected area system (in-situ conservation). With the financial and technical assistance of international organizations, the Government has undertaken a number of species-focused projects, including projects aimed at the conservation and monitoring of primates in Phong Nha-Ke Bang National Park; the Cat Ba langur in Cat Ba National Park; Tonkin snub-nosed monkey in the protected areas of Na Hang, Cham Chu in Tuyen Quang and Khau Ca in Ha Giang; black-faced spoonbill in Xuan Thuy National Park; and giant clams (Tridacninae) in the central, south-eastern and western regions.

The National Action Plan to strengthen Control of Trade in Wild Fauna and Flora for the period 2005-2010 was approved in 2005, which identifies the most threatened species for conservation priorities. The national Red Book identifying those species at risk of extinction has been prepared and published periodically in 1992, 1996, 2000 and 2007.

The Ministry of Health published the fourth revision of the Red List of Medicinal Plants of Vietnam (Danh luc Do cay thuoc Viet Nam) in 2006, classifying 139 plant species into three groups according to the 2001 IUCN categories and criteria: 18 Critically Endangered species, 54 Endangered species, and 67 Vulnerable species.

Conservation of genetic resources has provided thousands of genetic materials for selection and breeding in agriculture, fisheries and the pharmaceutical industry. A number of native genetic resources have been restored from the risk of extinction; and some endemic and rare species have begun to create competitive advantages for domestic products for consumption and export, which contribute to socio-economic development and national security: e.g. spotted deer, crocodile, Ngoc Linh ginseng, cardamom, and agar wood. In addition to the increasing use of GMOs with desired genetic traits, bio- safety management measures have been considered to minimize risks to biodiversity and humans.

2. Ex-situ conservation

Ex-situ conservation activities in Vietnam date back over 100 years, to the formation of the Bach Thao Botanical Garden in Hanoi and the Thao Cam Vien Zoo in Ho Chi Minh City. The Thu Le Zoo in Hanoi and the Thao Cam Vien Zoo in Ho Chi Minh City currently have hundreds of native and introduced wild animals. The Thu Le Zoo has successfully bred a number of rare and endangered wildlife species. For example, in cooperation with the Institute of Ecology and Biological Resources, Thu Le Zoo has achieved some success in breeding two threatened species: Owston's civet (Cynogaleowstoni) and Vo Quy's pheasant (Lophurahatinhensis). Eleven botanical gardens have been established to date, mainly located in national parks, which house representative collections of native plants. The Bach Thao Botanical Garden in Hanoi has planted over 100 timber species. Moreover, a number of private conservation units have been established in provinces including Hanoi, Nghe An, Khanh Hoa and Binh Duong, for the purpose of marine species exhibition, and captive breeding of mammals like tigers and bears. However, the main goal of these facilities is not conservation.

Animal rescue centres: At present there are over 10 wildlife rescue centers, of which the Endangered Primate Rescue Center at Cuc Phuong National Park has raised 160 individuals of 15 species of rare primates in captivity, including *Trachypithecusdelacouri, Trachypithecuslaotumhatinhensis, Pygathrixnemaeusnemaeus, Pygathrixnigripes* and *Hylobatesgabriellae*. Cuc Phuong National Park has also established the Turtle Conservation Center and the Carnivore and Pangolin Conservation Program. The Wildlife Rescue Center in Soc Son (Hanoi) was established in 1996 and has achieved some notable successes and gained some experience in captive breeding. The Vietnam Bear Rescue Centre in Tam Dao National Park is located on an area of 12 ha and came in operation in 2008, and is designed with adequate facilities to care for 200 - 250 bears for the duration of their lives. As of September 2011, 84 individual bears have been rescued and raised at the centre.

Table10: System of ex-situ fauna conservationsites

No.	Type	Unit	Quantity	Area (ha)	Status
1	Wildlife gardens	Garden	2	42	Located in 2 areas: Red River Delta, South East
2	Rescue center	Center	9	390.5	Most of the gardens are small, with few species, less than 300 individuals, mainly for the purpose of entertainment.
3	Domestic animal genetic resource servation-center	Center	1	-	Located in five ecoregions: Red River delta, North Central, Central Highlands, and Mekong River delta; with few species, mainly for rescue operations.
					Located in the Red River delta, mainly for the purpose of genetic resource storage and conservation for domestic animals.

Source: Biodiversity Conservation Agency: Report on checking conservation facilities, 2013

Medicinal Herb Gardens: According to data collected, some 3,948 plant and fungi species from 307 families are in use in Vietnam to treat diseases and ailments. Over 10 medicinal plant centres and 50 medicinal herb gardens have been established to help conserve and develop this rich heritage.

Gene Banks and Genetic Specimens: At present, Vietnam's agricultural sector has four institutions with cold storage facilities: the Vietnam Academy of Agricultural Sciences; the Institute of Agricultural Sciences in Southern Vietnam; Can Tho University; and the Field Crops Research Institute. However, these facilities are relatively small and are designed only for short and medium-term preservation. A seed-gene bank of the Plant Resources Centre of the Vietnam Academy of Agricultural Science has stored, conserved and used more than 20,000 seed samples of nearly 250 species of plants in cold storage, and about 2,300 seed samples of 32 species of bulbs, vegetables and spices in the field. Rice species have been given a particular emphasis on preservation, including wild rice species resistant to insects and pests. The Rubber Research Institute of Vietnam conserves 3,340 genotypes and 200 specimens of rubber trees. The National Institute of Animal Husbandry, Thuy Phuong, Hanoi has preserved genetic materials such as sperm of bo u dau riu, bo Hmong; and embryos, cells and DNA of lon mong cai, lon i, lon co Nghe An; ga ho, ga mia, ga ri, ga Dong cao, ga ac, bo vang, bo coc and huou sao.

Table 11: System of ex-situ flora conservation sites

No.	Type	Unit	Quantity	Area (ha)	Status
1	Botanic garden	Garden	7	479.89	Located in North East, Red River delta, South east; Most of the gardens are small, with few species (less than 300 species)
2	Medinical herb garden	garden	5		Located in almost all regions (except South central coast), with few species (less than 300 species), some gardens are small
3	Plant seed storage center	Center	1		Established a center for storage of agricultural plant genetic resources, including gene banks, seed, field gene banks and in-vitro gene bank of 24 units. The center has 20,890 genetic resources of 341 plant species. Units have 7.080 genetic resources of 275 species.

(Source: Biodiversity Conservation Agency: Report on checking conservation facilities, 2013)

Breeding Programmes: Many precious, rare and endangered species of wild animals in the Vietnam Red List and Red Book (2007) have increased in the number of individuals and become popular commercial products, such as Burmese python, reticulated python, cobra, wild boar, and spotted deer. In particular, the freshwater crocodile is being restored thanks to the natural re-introduction program in Cat Tien National Park. Many native animals such as lon y, lon meo, cuu phan thiet, ga dong cao, ga ho and ga thuoc son la are also being raised and bred.

With regard to fisheries, Department of Fisheries has established national centers for fish genetics in the northern area (under the Research Institute for Aquaculture I in Bac Ninh and Hai Phong), central area (under the Research Institute for Aquaculture III in Khanh Hoa), and southern area (under the Research Institute for Aquaculture II in Vung Tau and Tien Giang); sixteen fishery centers were established in provinces and cities. These centres have the function of keeping and breeding freshwater and saltwater rare and endangered aquatic species with high economic value, creating high-quality bloodstocks for breeding programs for the sustainable development of the fisheries in Vietnam. As a result, many rare and precious aquatic species with economic value such as ca lang, ca chien, ca anh vu, ca ho, ca ngua than trang, and abalone have been successfully bred and brought into commercial farming processes.

1.3.4. Management and support measures

1. Funding for biodiversity conservation

a) Budget for biodiversity conservation

Starting from 2006, the Government has committed to allocate one percent of the state budget to the environment, coming from central and local budgets. The average spending for biodiversity conservation currently constitutes approximately 0.4 percent of the total national budget. In recent years, government funding for biodiversity-related programmes and projects has increased, though initiatives such as the 5 Million Hectares Reforestation Programme and the activities of the Vietnam Environmental Fund and the Vietnam Conservation Fund.

Overseas Development Assistance (ODA) is also a significant source of funding for biodiversity conservation, typically making up 20 to 30 percent of that spent for environmental protection in general. Between 2006 and 2010, Vietnam received about $64 million for biodiversity activities from international donors. However, it has been estimated that nearly 90 percent of Government biodiversity funding is spent on infrastructure development, with only ten percent being allocated to conservation and management activities. (National Biodiversity Report 2011)

b) Socialization of finance for biodiversity conservation

Payments for Ecosystem Services: In 2008, the Government issued a decision on piloting Payments for Forest Environmental Services (PFES) in Lam Dong and Son La Provinces. Under this scheme, payments are received from key water users, including hydropower producers, water bottling companies, and others. Between 80 to 90 per cent of the revenue collected is paid to the environmental service providers, including forest owners, local households, local communities, economic organisations and the Management Boards of Protected Forests and Special Use Forests; and the balance is retained by Government. In September 2010, the approach was scaled up to national level, also broadening the scope of the payments to include carbon sequestration and other services.

Thus, from 2009 to 2014, revenues for forest environment services increased from 208.9 billion to 1182.6 billion VND. Of which, 92.774% collected from 190 large hydropower plants, 3.4% from the industrial production facilities, 2.05% collected from water supply companies, 0.17% of revenues from carbon storage services and aquaculture, and 0.11% of revenues from the tourism service companies (BCA, 2014, Report on assessment of current financing for biodiversity)

Carbon funding: So far, there is still a lack of carbon reduction projects related to biodiversity. Some 50 Clean Development Mechanism (CDM) projects have been registered in Vietnam to date, and all but one focused on energy efficiency. The only forestry and land-use CDM project is a relatively small initiative, the Cao Phong Reforestation Project.

Reducing Emissions from Deforestation and Forest Degradation Program (REDD+): Since 2008, Vietnam has been working with other partners, such as the World Bank, the UN-REDD program and a number of international non-governmental organizations, to build REDD+ capacity including systems to account for reductions in emissions and in loss and degradation of forests, as well as benefit distribution systems to compensate local actors for implementing REDD+

activities. Currently, SNV is implementing a pilot project for integrating REDD+ in areas with high biodiversity to promote the conservation of biodiversity in the implementation of REDD+ projects. The implementation of REDD + is an opportunity for raising funds for biodiversity conservation if biodiversity conservation objectives are well integrated into the overall goals of developing forest ecosystems.

Biodiversity Offsets: The roadmap for biodiversity offsets is currently being developed within the scope of the project of ADB. Thus, a program on biodiversity offsets is not yet implemented in Vietnam; however, international experience shows that this is a good mechanism for biodiversity conservation in the context of the possible impact of development activities on biodiversity. The development of the legal and policy framework on biodiversity offsets is based on Article 75 of the Law on Biodiversity.

Corporate Funding: Many businesses have been willing to provide funding for the conservation of biodiversity. In Kien Giang Province, the international cement company Holcim has made a commitment to provide approximately US$ 1 million for the conservation of karst landscapes and endangered species, namely the silver langur and sarus crane. Training programs in environmental protection have been developed, for both Holcim staff and the local community.

Economic Valuation of Ecosystems:

In order to evaluate different parts of the total economic value of natural resources (environmental assets), some researchers of Vietnam have initially studied and applied evaluation techniques such as travel cost method (TCM) and contingent valuation method (CVM) to evaluate the recreational value of NPs. These researchers include Nguyen Duc Thanh (1996) who studied tourism value of Cuc Phuong National Park, Le Minh Ngoc and Duc Truong Dinh (2006) studied Bach Ma National Park, and Pham Khanh Nam (2003) conducted tourism evalutation of Hon Mun PA (now Nha Trang Bay NP).

In recent years, an increasing effort has been made to determine the economic value of Vietnam's biodiversity including forests, mangroves, coral reefs and sea grass. These studies point to the very significant contributions that biodiversity makes to economic development, livelihoods and human well-being. According to studies of Nguyen Minh Huyen et al (2010), and Nguyen Quang Hung et al (2013), economic value of mangrove forest is about 0.204 – 1.67 billion VND/ha/year; coral reef is about 1.71 – 11.42 billion VND/ha/year; and sea grass is about 0.656 billion VND/ha/year.

Under the project "Removing Barriers Hindering Protected Area Management Effectiveness in Viet Nam", Bidoup-Nui BaNP in Lam Dong province conducted an evaluation of the value of its natural goods and services in 2013, which was calculated at 25,747 billion VND/year. Meanwhile the total financial funding for the NP is about 40 billion VND/year, equivalent to 0.16% of value of its natural resources.

The economic evaluation of ecosystems and biodiversity helps decision-makers and managers to identify conservation priorities and provides the basis for evaluation of the trade-off between objectives of conservation and development. However, the economic evaluation of ecosystems and biodiversity has not yet been incorporated in the national accounting system.

2. Education and training

The education and training network for biodiversity conservation managers and technical staff in Vietnam has been widely developed. Approximately 20 universities offer undergraduate degrees in biodiversity-related majors, including biology, environmental management, forestry, agriculture and fisheries. Many of these universities also have graduate programs related to biodiversity and the management and sustainable use of wetlands, such as Hanoi University of Natural Sciences (Hanoi National University), Hanoi University of Pedagogy, Hanoi University of Agriculture I, University of Forestry, Nha Trang University of Aquaculture and the HCMC University of Agro-Forestry. Over 10 research institutes have specialized postgraduate training courses on biodiversity, such as the Institute of Ecology and Biological Resources, Institute of Marine Environment and Resources, Hai Phong, Institute of Oceanography, Nha Trang, Research Institutes for Aquaculture I, II and III, Vietnam National Institute of Animal Husbandry, Institute of Agricultural Science and Technology of Vietnam, and Vietnam Agricultural Genetics Institute.

Some hundreds of biology and biotechnology undergraduates together with some 8,000 agricultural, forestry and aquacultural engineers complete their education in Vietnam every year; approximately 50 master students and 10 PhD students graduate each year in fields such as zoology, botany, ecology, biodiversity conservation and natural resource management. A number of students are also trained abroad via bilateral scholarship programs or international cooperation projects.

Biodiversity is also included in the current primary and secondary school curricula with subjects such as biology, botany, tree planting, and soil and water conservation.

Many short-term training courses on biodiversity have also been organized for management staff at central and local levels. The Vietnam Conservation Fund funded by the Global Environment Facility (GEF), the Government of the Netherlands and the European Union through the World Bank, has provided funds to 30 protected areas (US$50,000 to each on average) in the period 2005-2011, to build the capacity of PA management officers and enhance community awareness.

3. Communication and Awareness Enhancing

Through the mass media, biodiversity conservation has reached the public and stakeholders to raise the awareness at all levels of society about the role of biodiversity in sustainable national socio-economic development and to develop standards for the relationship between human beings and the environment, between protection and sustainable use of natural resources. A number of site-based awareness-raising activities have also been carried out for communities living in and near protected areas. Every year, the Ministry of Natural Resources and Environment organizes meetings to celebrate international days such as the environment, biodiversity, wetlands, and tiger conservation.

4. Biodiversity Data and Information

Information about Vietnam's biodiversity has improved dramatically in the last two decades. Surveys and studies have been undertaken in many parts of the country, revealing hundreds of species new to science. On-site monitoring systems have been established at a number of protected areas. However, information is scattered across many management and research institutions. There is an absence of consistency in quality of information, and the use and sharing of information is limited.

MONRE is the focal point for management of biodiversity information and data. In 2011, Vietnam Environment Administration (VEA) under MONRE, with the technical and financial support of Japan International Cooperation Agency (JICA), co-implemented the Project: "Building a national biodiversity database system". The Biodiversity Conservation Agency is the implementing unit. The project has achieved following results:

- An initial national biodiversity database system was successfully developed and put into operation. Initially, data of Xuan Thuy NP can be accessed at the website of http://nbds.vea.gov.vn.
- A set of biodiversity indicators was developed and tested for monitoring coastal wetlands (E.g. Xuan Thuy NP). It was then improved (with 22 indicators) which can be used for monitoring terrestrial forest, in-land and coastal wetlands.
- Developed, published and distributed technical documents such as "Guidance for monitoring and evaluating biodiversity in coastal wetlands" and "Guidance for developing and using biodiversity indicators".
- Following up NBDS project activities, BCA is developing a draft Circular regulating the provision, exchange and management of biodiversity information.

Under the project "Removing barriers hindering protected area management effectiveness in Vietnam", the Biodiversity Conservation Agency under VEA, MONRE

developed a set of 16 biodiversity indicators for monitoring and reporting biodiversity status in protected areas.

In addition, the NBSAP project developed biodiversity performance indicators at all levels (36 indicators); 31 indicators for provincial level and tested in Son La and Lang Son; and 30 indicators for protected area level.

These above documents have been introduced and disseminated to officers of DONRE, DARD, and PA management boards in training workshops organized in the northern, central and southern regions.

In addition, MARD is currently developing a forest information management system with support from FINIDA. MOST and MARD have developed a database of breeds and genetic resources of plants and animals. The Vietnam Academy of Science and Technology has developed a national database on the Vietnam sea region, including marine biodiversity. It is essential to have a consistent system for a biodiversity database with an effective mechanism for sharing and using information.

During 2010-2014, the Institute of Ecology and Biological Resources in collaboration with other specialized institutes under VAST and MARD, implemented the project on Investigation, Research, and Amendment of Vietnam Red Book (the project under MOST). This project was finalized in 2015 and its updated data of endangered, precious and rare species will be the scientific basis for the development of the new Red Book.

5. Community Participation and Benefit Sharing

A considerable number of regulations aimed at encouraging community participation in the management and sustainable use of biodiversity has been issued. In Xuan Thuy National Park, the management board has implemented a pilot initiative on the wise use of fisheries resources on the basis of co-management, which has provided local communities with a relatively stable source of income from fisheries.

In Dong Rui commune, Tien Yen district, Quang Ninh, the community has been engaged in various activities such as mangrove replantation, ecological economic models, biogasmodels, and mangrove protection via setting up self-management groups, which has helped reduce the indiscriminate exploitation of mangroves and forestland. An innovative approach to protected area management and community involvement has been pioneered successfully at Phu My (Kien Giang), with the assistance of the International Crane Foundation. The project has not only raised local incomes through the sustainable use of biodiversity, but has also succeeded in conserving valuable wetland areas and rare, threatened species such as the Sarus crane.

Eco-tourism activities in the core areas and buffer zones of protected areas have created employment opportunities and contributed to local economic development, for example, in Phong Nha-Ke Bang, Cat Tien, Cat Ba, Cuc Phuong, Ba Vi, Ba Be and Xuan Thuy National Parks.

The sharing of benefits from nature conservation has been an issue in discussion for many years, but with almost no practical implementation. Recently, the Government has allowed the implementation of a pilot project in Xuan Thuy National Park, Bach Ma National Park and Hoang Lien National Park, according to Decision No. 126/2011/QD-TTg of the Prime Minister.

6. International Collaboration

Vietnam has increased its cooperation with ASEAN countries in developing information systems, databases, and organizing a forum to exchange experiences on the conservation and sustainable development of biodiversity and biosafety. Vietnam has been involved in many regional initiatives related to biodiversity, including the ASEAN Wildlife Enforcement Network (ASEAN-WEN), the Global Tiger Initiative (GTI), and the Research Group on Saola.

Vietnam is Party to many Multilateral Environmental Agreements (MEAs) of relevance to biodiversity, including the Convention on Biological Diversity (CBD), the Convention on Wetlands of International Importance (Ramsar Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and some other related international protocols.

Table 12: Biodiversity-related international conventions/agreements ratified by Vietnam

Agreement	*Date of Ratification*
World Heritage Convention Concerning the Protection of the World Cultural and Natural Heritage	19 October 1987
Convention on Wetlands of International Importance (Ramsar Convention)	20 January 1989
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	20 January 1994
United Nations Framework Convention on Climate Change (UNFCC)	16 November 1994
Convention on Biological Diversity	16 November 1994
Kyoto Protocol	25 September 2002
Cartagena Protocol on Biosafety to the Convention on Biological Diversity	21 January 2004
Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity	23 April 2014
Nagoya- Kuala Lumpur Supplementary Protocol on Liability and Redressto the Cartagena Protocol on Biosafety	23 April 2014

1.4. OPPORTUNITIES AND CHALLENGES

1.4.1. Challenges

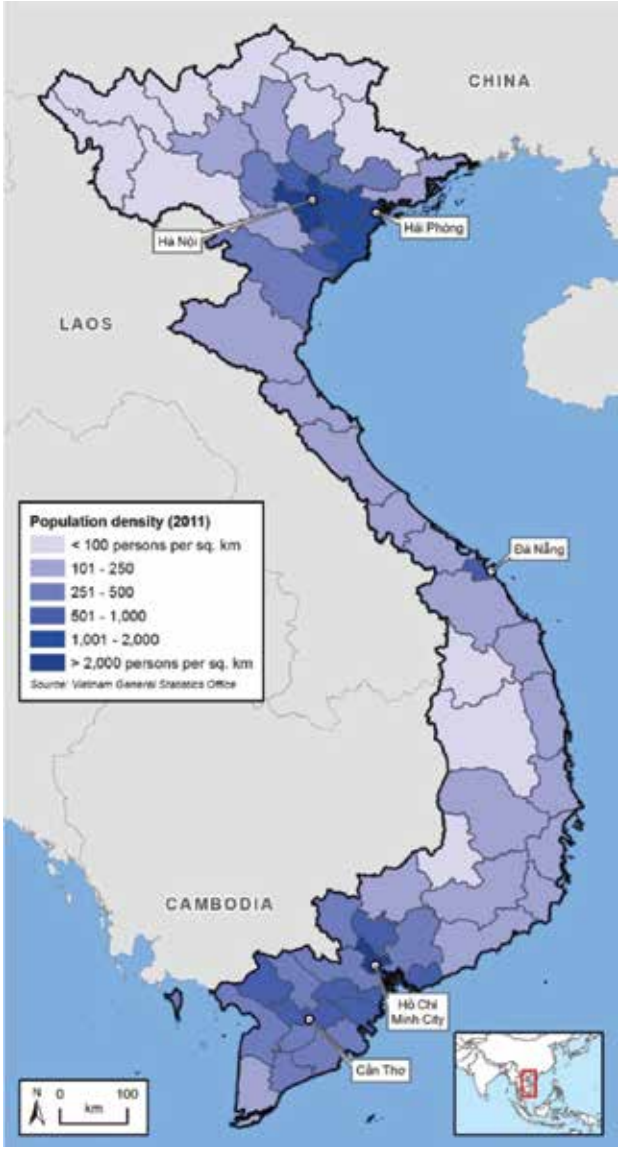
Population growth and increase in consumption, poverty and free migration

Vietnam's population has continued to grow, from just under 73 million in 1995 to nearly 90.729 million in 2014; making Vietnam one of the most densely populated countries in Asia. The increase in population density, along with deforestation and environmental degradation, has created a real crisis in upland agriculture areas, leading to serious degradation of ecosystems and natural resources under the pressure of free and unplanned migration, especially in the Central Highlands for example. Due to the lack of land and capital, poor people have to overexploit land and natural resources in order to support their lives, rapidly degrading these resources and leading to the decline of biodiversity. Shifting cultivation practices have caused the loss of forests, degradation of land, and creation of vast barren areas.

Table 13: Population in Vietnam

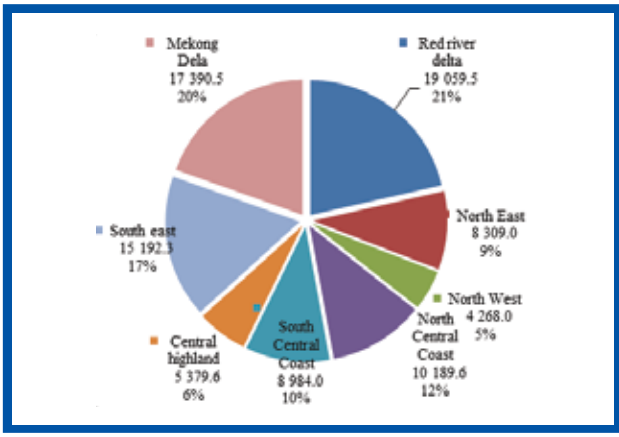
Year	*Total (thousand people)*	*Increased percentage (%)*	*Percentage by Gender (%)*		*Percentage by urban and rural (%)*	
			Male	*Female*	*Urban*	*Rural*
2008	85,118.7	1.07	49.29	50.71	28.99	71.01
2009	86,025.0	1.06	49.43	50.57	29.74	70.26
2010	86,947.4	1.07	49.45	50.55	30.50	69.50
2011	87,860.4	1.05	49.45	50.55	31.55	68.45
2012	88,809.3	1.08	49.44	50.56	31.83	68.17
2013	89,759.5	1.07	49.43	50.57	32.17	67.83
2014	90,728.9	1.08	49.33	50.67	33.10	66.90

(Source: Statistical Yearbook 2014)



Map of population density

(Source: Joao S. de Queiroz, Daniel Griswold, Nguyen Duc Tu and Patrick Hall, 2013)



Population Distribution in regions

Unit: 1000 people (Source: GSO, 2012)

Figure 35. Distribution of population in Vietnam

To feed its 90 million people that will reach 100 million by mid-21st century, Vietnam will still have to be dependent on its natural resources such as land, water, forests, sea, animals, plants and minerals. Without awareness and responsibility, it would deplete these valuable resources quickly, especially in remote areas where biodiversity is high, but the poverty rate is also high. Therefore, this is an important challenge with negative impacts on biodiversity conservation. The decline of natural forests is a big challenge for Vietnam with regard to biodiversity conservation, especially in the context of climate change mitigation and adaptation.

Notably, there is a high poverty percentage in areas with high forest cover such as in the North-East, North-West, Central region and Central Highlands. This causes the illegal hunting and over-exploitation of forest and biodiversity.

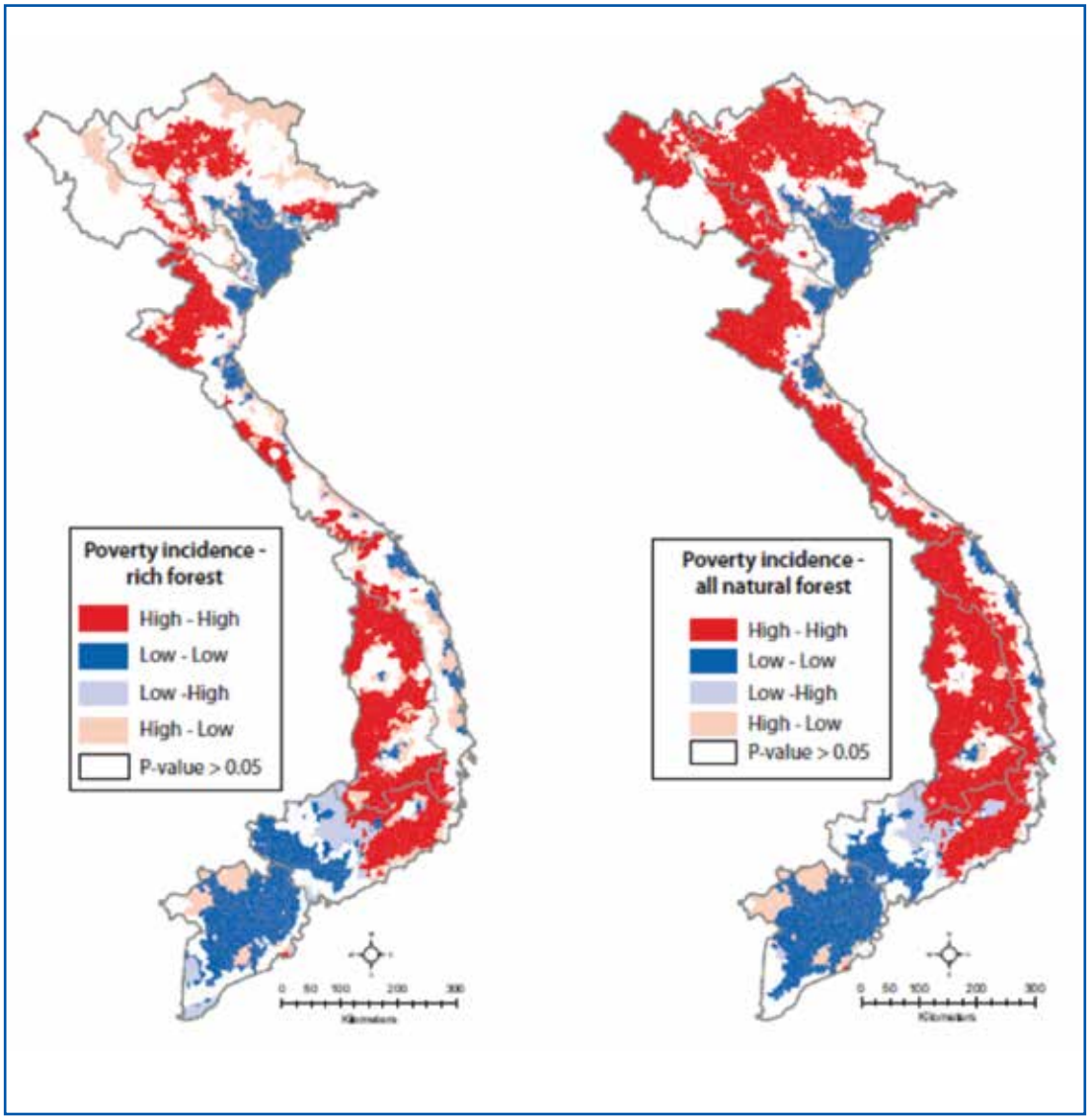


Figure 36. Maps of correlation between poverty incidence and forest cover in Vietnam

(Source: Muller et al, 2006 in Pham, TT, Moeliono, M., Nguyen, TH, Nguyen, HT, Vu, TH, 2012; The context of REDD + in Vietnam: Causes, actors and institutions; Thematic Report, CIFOR).

In this context, biodiversity must be placed in close relation to the development of the country: biodiversity is vital for the long-term prosperity of the country; but meanwhile, Vietnam's development cannot be sacrificed for biodiversity conservation. The solution to this dilemma is very difficult to implement, but it must be fully followed, as it is the answer to the country's sustainable development question.

Over-riding Emphasis on Economic Development, and Little Emphasis on Environmental Protection and Biodiversity Conservation

An over-riding emphasis has been placed on economic development over the past 20 years. Although this emphasis has led to rapid economic growth (with GDP growing at a rate of over 5 per cent per year since 1994),

and even up to 7-8 percent per year (The strategy for Economic Development 2011-2020), it has often come at a cost to the environment. Rewards at the provincial level, which is where most land-use decisions are made, are linked primarily to economic criteria without promoting environmental protection and biodiversity conservation. In fact, there has been a conflict of interest between meeting their economic growth targets and conservation and sustainable use of biodiversity.

The control of land use and development planning remains weak, making the access to natural resources relatively easy, and reducing the incentives to engage in value-added biodiversity certification projects.

Export-led Growth Strategy

Vietnam is highly dependent on exports of agricultural commodities such as coffee, rubber, catfish and shrimp. This has driven the rapid, large-scale and often unregulated conversion of natural habitats to paddy fields and shrimp ponds, and the conversion of land has been most dramatic in the relatively sparsely populated and fertile areas of the Central Highlands and Mekong Delta. Meanwhile, there are few incentives to invest in branding, certification or other forms of benefit.

Table 14: Fisheries area, volume and production value

Year	*Water surface for aquaculture (thousand ha)*	*Fisheries volume (thousand tons))*	*Fisheries production value at current prices by activities (billion)*
2008	1,052.6	4,602.0	110,510.4
2009	1,044.7	4,870.3	122,666.0
2010	1,052.6	5,142.7	153,169.9
2011	1,040.5	5,447.4	205,866.4
2012	1,038.9	5,820.7	224,263.9
2013	1,046.4	6,019.7	
2014	1,053.9	6,332.5	

(Source: Statistical Yearbook 2013, 2014, the General Statistics Office 2013, 2014)

Table 15: Forestry value at 2010 comparision price by activities

Unit: billion VND

Year	Total	Forestry activity			
		Forestation	Exploitation of timber and other forest products	Collection of forest products except timber and other forest products	Forestry service
2008	17,202.3	2,526.4	12,823.0	898.3	954.6
2009	17,851.8	2,629.1	13,305.1	922.0	995.6
2010	18,714.7	2,711.1	14,011.8	936.2	1,055.6
2011	19,822.6	2,556.0	15,195.8	965.0	1,105.8
2012	21,136.0	2,380.1	16,604.1	998.0	1,153.8
2013	22,361.0	2,516.1	17,856.4	1,035.8	1,222.7

(Source: Statistical Yearbook 2014, the General Statistics Office 2015)

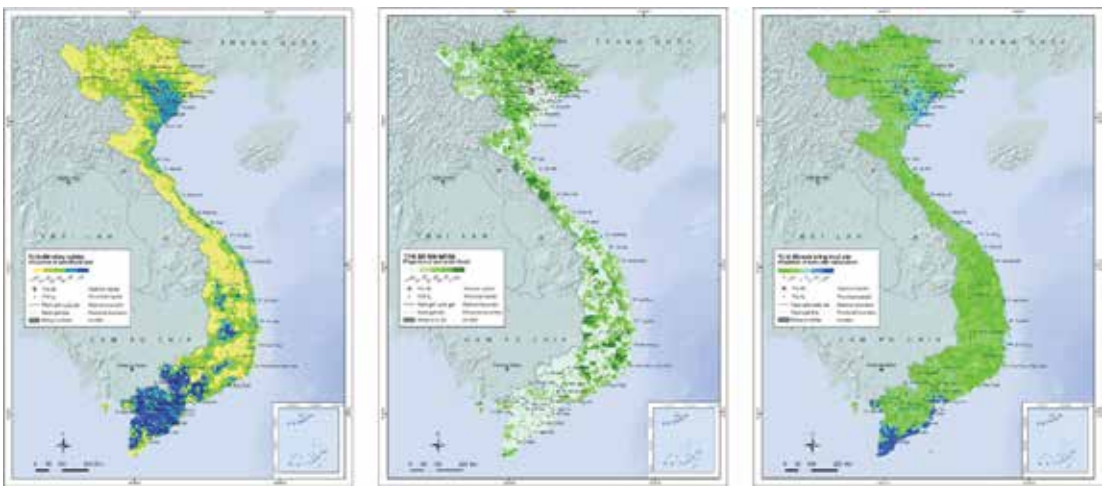


Figure 37. Map of proportion of land used for agriculture (A), forestry (B) and aquaculture (C)

(Source: Epprecht, M. And Robinson, TP (Eds.). Agricultural Atlas of Vietnam. A depiction of the 2001 Rural Agriculture and Fisheries Census)

Under-valuation of Biodiversity

Although the services provided by biodiversity and natural ecosystems are worth hundreds of millions of dollars per year to Vietnam, the value of these services remains largely unrecognized and is not yet reflected in national accounting or economic and financial systems. As a result, biodiversity and ecosystem services are under-valued and are rarely given the attention they deserve during decision making processes. This is a global phenomenon that international programs like the Economics of Ecosystems and Biodiversity (TEEB) are now seeking to address.

In addition, the NBSAP project has developed a report on assessing the current funding for biodiversity conservation and financial needs for the implementation of prioritized programs and projects of the national biodiversity strategy by 2020, vision to 2030. The report proposes a plan of financial mobilization from different sources including the State; self-mobilized; payments for ecosystem services; private sector; and the international community.

Lack of proper biodiversity conservation methods

In the current socio-economic context of Vietnam, economic tools for conservation such as Payments for Ecosystem Services (PES), or the application of new management methods towards sustainable development, have not been widely developed or used. New and complex issues in biodiversity conservation such as access to genetic resources, sharing of benefits derived from biodiversity, and the application of an ecosystem-based approach, have not been givenproper attention. So far, there has been no mechanism to incorporate the values of biodiversity and ecosystem services into national accounting systems. As a result, the real values of biodiversity and its basic contribution to the development of the country have not been properly recognized in national economic planning.

Shortcomings in biodiversity management and conservation

Vietnam does not currently have a unified coordinating institution for biodiversity conservation. State management of biodiversity conservation is shared between the Ministry of Agriculture and Rural Development, the Ministry of Natural Resources and Environment, and the Provincial People's Committees, and there are overlaps and conflicts within it. Meanwhile, awareness of conservation and understanding of the true value of biodiversity is not high within society, even amongst some high-level policy makers.

Provincial People's Committees and other natural resource management agencies are given incentives for economic development, but not for biodiversity conservation. This is considered an important obstacle to conservation and sustainable use in the formulation of the Strategy.

Although a large number of protected areas have been established and operated for a long time, the management of protected areas still has many limitations:

- Although the laws specify the establishment of a management board for each protected area, so far many protected areas do not have such a board. The decision-making power of management boards is relatively weak and the regulations on their tasks remain incomplete;
- The consistency and quality of protected areas continue to decline as a result of infrastructure development, illegal logging and hunting activities, encroachment, grazing, aquaculture, forest fires, invasive alien species and other pressures;
- A relatively high percentage of the state budget for protected areas is for infrastructure development, rather than for conservation activities such as patrolling and management of habitats and species;
- Agencies responsible for management of protected areas are largely respected in economic perspectives, despite having very few initiatives implemented for conservation activities. Although having been trained for many years, the capacity and confidence of staff in protected areas is still very low.
- Many important ecosystems have not received adequate attention in the protected area system. No wetland protected areas have been established, and most of the marine protected areas have not yet come into operation. In addition, the current system of protected areas is not sufficient to protect important biodiversity areas of Vietnam. Out of 102 key biodiversity areas with a total area of 33,191 km^2 in Vietnam, only 35.3% are protected areas[5].
- The poor management of economic development and land-use planning facilitates the access to natural resources, which negatively influences the incentivesfor value-added certificates.

[5] Tordoff, A.W., M.C. Baltzer, J.R. Fellowes, J.D. Pilgrim & P.F. Langhammer (2012). Key Biodiversity Areas in the Indo-Burma Hotspot: Process, Progress and Future Directions. Journal of Threatened Taxa 4(8): 2779–2787.

In general, biodiversity is not given proper attention in reforestation programs and biodiversity objectives are not integrated into such program activities.

Despite the efforts mentioned above, many species found in Vietnam are threatened with extinction in the wild on a global scale. At least 200 species in Vietnam were identified as critically endangered or endangered, according to the IUCN Red List. The Javan Rhino subspecies (Rhinoceros sondaicus annamiticus) recently disappeared from the territory of Vietnam, and was confirmed to be extinct on a global scale. Other species that have also not been seen in the territory of Vietnam (but are not extinct on a global scale) include the Kouprey, Hog Deer and Sumatran Rhino. The populations of tigers and elephants in Vietnam are also very low.

In-situ conservation projects are given little priority due to limited financial resources. There is no systematic coordination between different agencies involved in ex-situ conservation activities, and a lack of an overall strategic approach. Connections between in-situ and ex-situ conservation are weak, and there are very few centres carrying out the reintroduction of species into the natural environment with a clear objective. Regulations on the management of private captivity establishments for wild animals are incomplete, and many private establishments are suspected of having connections to the illegal wildlife trade.

Training for rangers is still seasonal and dependent on the funding sources and priority activities of each separate project. There is no national ranger-training program in line with the priorities of Vietnam, and no regular ranger training centres.

There is no comprehensive monitoring system in place, particularly in protected areas, to record biodiversity changes or progress towards objectives. Data on biodiversity is scattered in different research and management institutions. The national biodiversity database is still uncomprehensive and insufficient. There are no general standards, very little data available for comparison, and few information sharing mechanisms.

The legal and policy system is inadequate, and there is a lack of implementation guidance documents. In some cases, the provisions in various policies and laws overlap in terms of responsibilities, but lack clarity and sometimes lead to conflict. Moreover, legislation enforcement is ineffective. Therefore, the State management of biodiversity conservation does not meet the practical requirements.

The conservation workforce is insufficient in number, weak in capacity, and without adequate equipment. The sanctioning of violations of conservation laws is inappropriate and causing the increase in cases of illegal exploitation and trade of wild plants and animals. Violators carry out illegally organized exploitation even in protected areas. Another concern is that Vietnam has become a transit point for many wild plant and animal products between countries in Asia and the rest of the world.

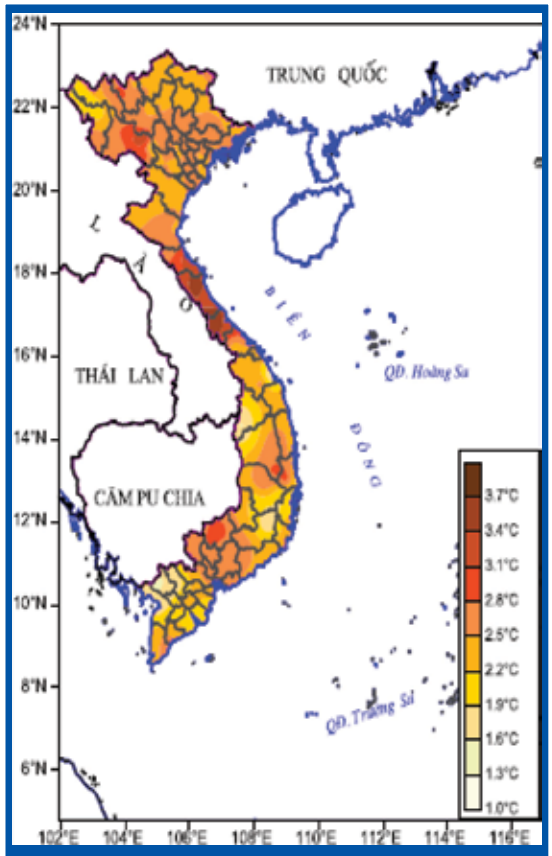
Funding from the state budget for implementation of biodiversity conservation has increased, but is still unfocused and with low efficiency. Most funding from non-governmental organizations is for short-term projects and relies on aid, making it difficult for long-term commitments to conservation.

Baseline surveys of biological resources and biodiversity have gained some success, but are not carried out in a systematic way.

Climate change increases the threat of biodiversity degradation

Currently, the loss of biodiversity and global climate change have become the two most serious environmental issues, having a direct impact on human life and development on a global scale. Vietnam is one of the countries most heavily affected by climate change. Initial research has showed a series of coral reefs died following bleaching caused by sea water quality change (pH) related to climate change; and the distribution of some flora species has changed to higher elevations in the Hoang Lien Son range. The maps predicting average temperature increases under the medium emissions scenario show the North Central, Northeast and a part of the Central Highlands, with rich biodiversity, will have highest level of temperature increase. According to the forecast map of flooding due to sea level rise, the Red River estuary, Sac Forest in Ho Chi Minh City, and Ca Mau peninsula where there are mangroves and swamp forests will be affected and seasonally flooded.

Biodiversity conservation has positive implications in mitigating climate change, and considering climate change in biodiversity conservation is helpful for effective adaptation to climate change.



Annual increased temperatures (oC) by the end of 21st century, compared to the period of 1980-1999 under the medium emissions scenario

Map of flood risk in coastal areas with sea level rise of 1m

Figure 38. Increased temperatures and rising sea levels in Vietnam in the climate change scenario 2012 (MONRE)

1.4.2. Opportunities

Biodiversity has been given attention at a global scale

Today, biodiversity conservation is given attention not only at a national level but also at a global level, as the conservation and sustainable use of biodiversity is closely associated with the socio-economic development of each country and helps to mitigate the negative impacts of global climate change. The UN selected 2010 as the international year of biodiversity, and 2010-2020 as the world's decade of biodiversity. In the 10th Conference of the Parties to the Biodiversity Convention in Japan (COP10), the Parties committed to implement a new strategy in the new period to achieve the strategic goals to 2020 (Aichi targets) which were approved at COP10. Through the Global Environment Facility and other financing mechanisms, the Convention will continue to support the Parties in the implementation of the objectives of the Convention.

Greater international interest has been given to the green economy, which emphasizes sustainable growth based on the principles of the ecosystem approach. Thus, the role of ecosystems and biodiversity in general will be taken into consideration in order to ensure ecological balance in the development of human societies.

Commitments of Vietnam in international integration

In the context of current international integration, Vietnam has participated in many international treaties related to biodiversity conservation. Vietnam's continuing participation in new treaties and showing the active implementation of its biodiversity commitments to the international community will help support and promote the conservation and sustainable use of Vietnam's biodiversity.

International integration is also an opportunity to set up trans-boundary protected areas with other countries in the region, as well as to establish Natural Heritage sites and Biosphere Reserve sites recognized by UNESCO, Ramsar sites, and ASEAN protected areas. The 2010-2020 decade, the world's biodiversity decade, is one which requires rapid innovation and commitments in the conservation and sustainable use of biodiversity from governments, businesses and society for future generations.

Vietnam follows the economic development orientation based on the green growth model

More international attention nowadays has been given to the development of the green economy or green growth to improve living standards and social equity, meanwhile significantly reducing environmental risks and ecological shortage. The green economy gives attention to biodiversity because the decline of biodiversity reduces social welfare in some parts of the world's population, while other parts face more serious problems due to poverty. If this situation continues, it could affect the operation of climate-regulating ecosystems in the long term and could lead to unpredictable changes, a reversal in the earth system, and changes in ecosystem services which are a major resource for economic development. For these reasons, the preservation and protection of ecosystems is the focus of the Green Economy Agenda. In addition, green investment also helps to reduce negative effects from external factors caused by the exploitation of natural resources.

On September 25, 2012, the Prime Minister issued Decision No. 1393/2012/QD-TTg approving the National Green Growth Strategy. This shows that Vietnam follows the orientation towards the green growth model which acknowledges the importance and urgency of the conservation and sustainable use of biodiversity.

Vietnam's orientation to transform growth model in both width and depth

According to the socio-economic development strategy by 2020, Vietnam is striving to bring the industry and services to account for about 85% of GDP. Thus, agriculture will account for only about 15% of GDP, which is the opportunity to reduce exploitation pressure of biodiversity. Agricultural development will be oriented towards a more modern, comprehensive, effective and sustainable model.

Vietnam is speeding up the application of scientific advances and modern technology in production, processing and preservation; giving priority to the application of biotechnology to produce better varieties of crops and livestock, and to manufacturing

process that achieve high-yield, quality and efficiency, to increase added value per unit of cultivated land.

There is also clear planning and sustainable policies for developing and improving the quality of production forests, protection forests and special-use forests. The government is making investments and has comprehensive policies to manage and develop protective forests and special use forests, while at the same time ensuring that the ones who accept extensive agriculture and protect forests will have a stable life. It is also encouraging organizations and individuals of all economic levels to invest in production forests; combinating the forestation for materials with processing industry; and using income from forests to further develop forests and derive increased benefits from them.

The model also promotes sustainably and effectively exploiting sources of seafood in association with national defense, security and protection of the marine environment. It is developing aquaculture in accordance with the planning with a focus on products that have advantages and high economic values; comprehensively building the infrastructure for breeding areas; fostering the application of scientific and technological advances in production and processing; improving the productivity, quality, and competitiveness as well as meeting the requirements for food safety. It is building up Vietnamese aquaculture to reach an advanced level in the region.

Biodiversity conservation as a solution to cope with climate change effectively

Conservation and the development of biodiversity in general are having a positive impact on minimizing climate change. Reforestation and sustainable forest management is a key solution to reduce greenhouse gas emissions, as tropical forest ecosystems can absorb CO2 emissions to produce organic matter, and replantation of mangroves helps to protect against rising sea water and storm damage. Therefore, the effective conservation and management of biodiversity is very important in response to climate change and is an important solution to help communities in areas vulnerable to climate change. The ecosystem-based adaptation to climate change is an approach where the use of biodiversity and ecosystem services is integrated and linked to general climate change adaptation strategies. Integrating biodiversity and climate change within the framework of poverty reduction strategies and food security planning is crucial to Vietnam's fulfilment of the Millennium Development Goals.

Some studies showed that the average carbon density is typically highest in areas with high forest vegetation; there is high biomass carbon in the vegetation of special-use forests and protection forests, and a correlation between endangered species and areas of high carbon biomass forest vegetation.

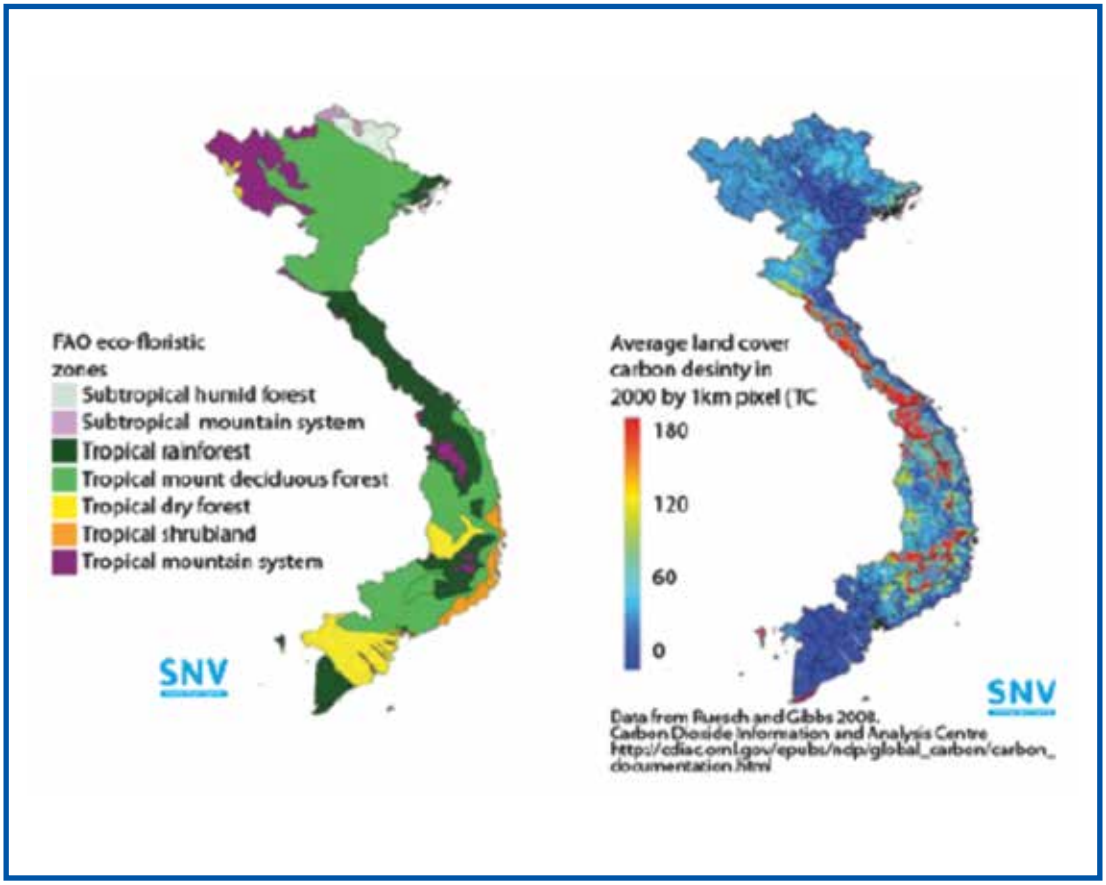


Figure 39. Carbon density in Vietnam

(Source: SNV in Pham, TT, Moeliono, M, M., Nguyen, TH, Nguyen, HT, Vu, TH 2012. The context of REDD + in Vietnam, causes, actors and institutions. The thematic report, CIFOR.)

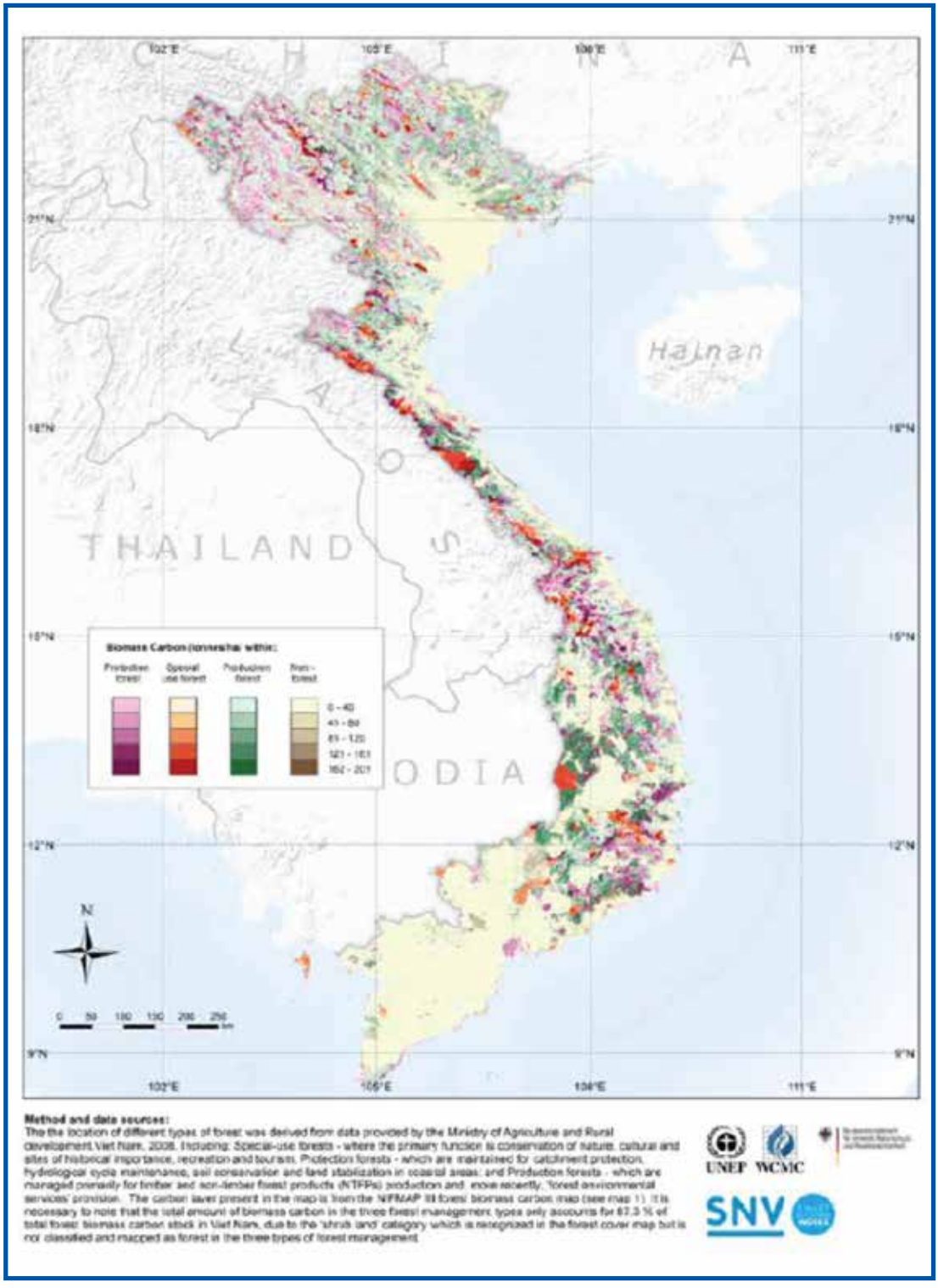


Figure 40. Map of three types of forest management under REDD program and biomass carbon density

(Source: Mant, R., Swan. S., Anh, H.V., Phương, V.T., Thành, L.V., Sơn, V.T., Bertzky, M., Ravilious, C., Thorley, J., Trumper, K., Miles, L., 2013; Mapping the potential for REDD + to deliver biodiversity conservation in Vietnam: Preliminary analysis;developed by UNEP-WCMC, Cambridge, UK; and SNV, Ho Chi Minh City, Vietnam)

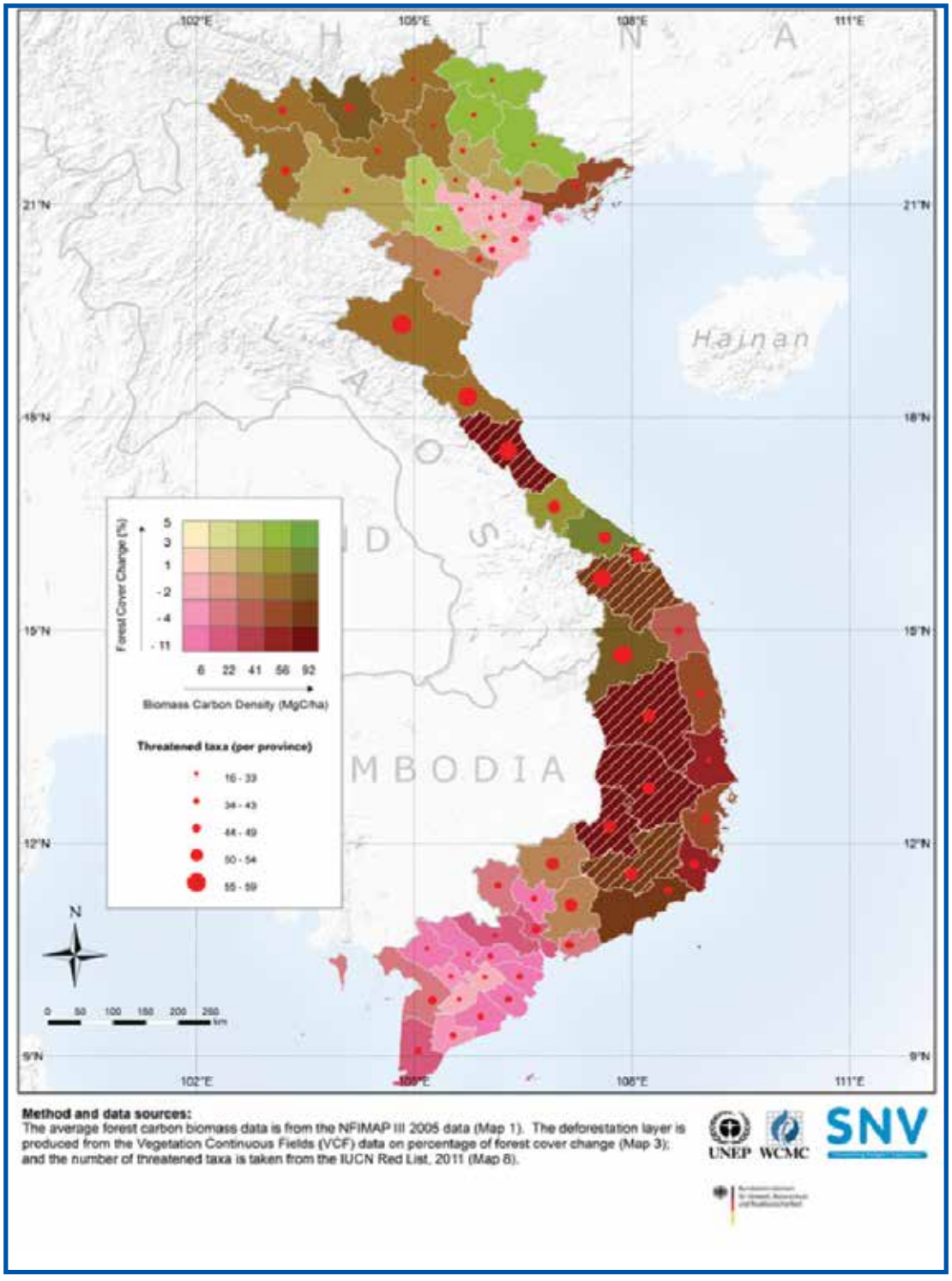


Figure 41. Relationship of forest biomass carbon, forest cover change and threatened species richness

(Source: Mant, R., Swan. S., Anh, H.V., Phương, V.T., Thành, L.V., Sơn, V.T., Bertzky, M., Ravilious, C., Thorley, J., Trumper, K., Miles, L., 2013; Mapping the potential for REDD + to deliver biodiversity conservation in Vietnam: Preliminary analysis;developed by UNEP-WCMC, Cambridge, UK; and SNV, Ho Chi Minh City, Vietnam)

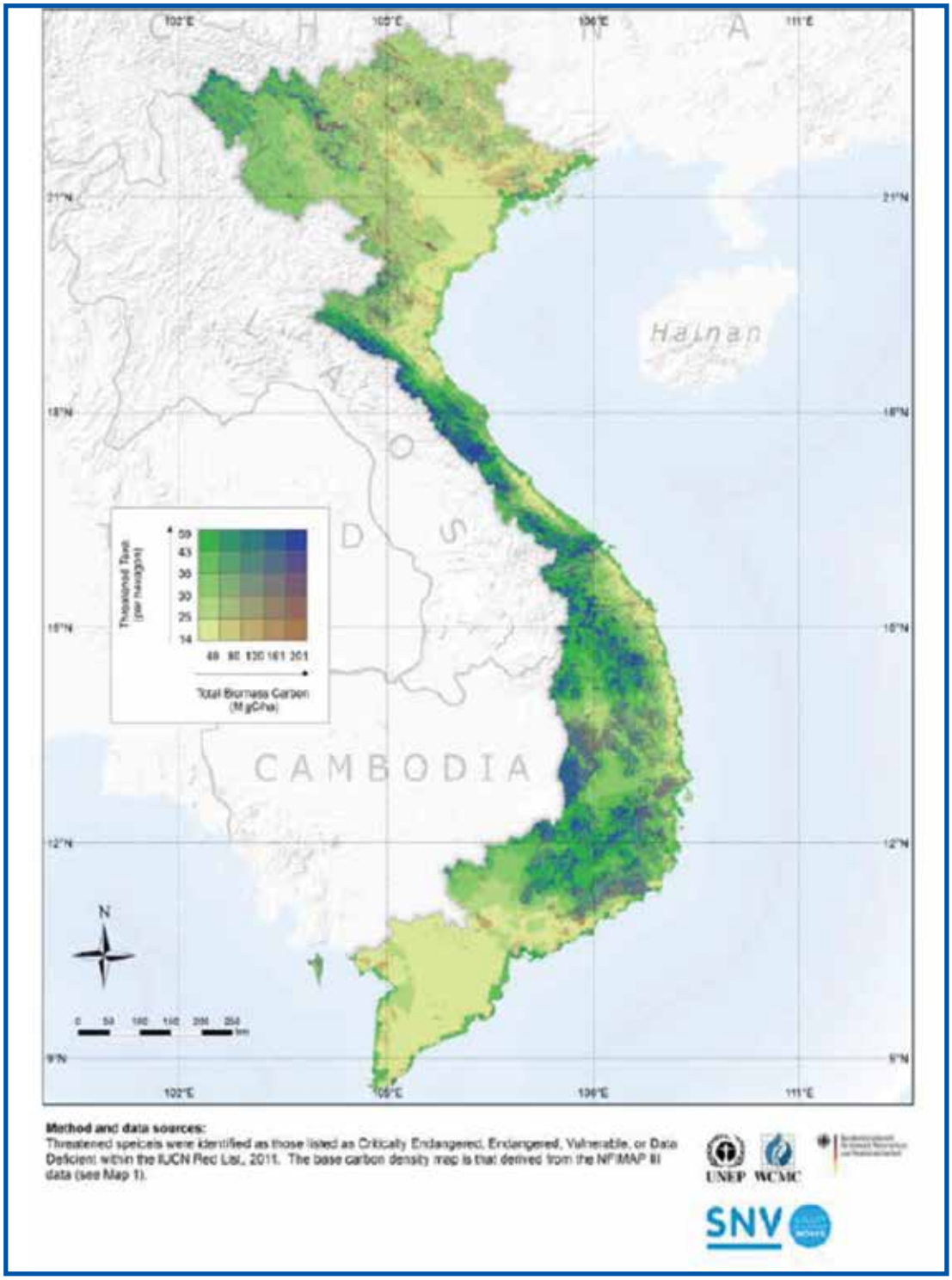


Figure 42. Forest biomass carbon and threatened species richness

(Source: Mant, R., Swan. S., Anh, H.V., Phương, V.T., Thành, L.V., Sơn, V.T., Bertzky, M., Ravilious, C., Thorley, J., Trumper, K., Miles, L., 2013; Mapping the potential for REDD + to deliver biodiversity conservation in Vietnam: Preliminary analysis;developed by UNEP-WCMC, Cambridge, UK; and SNV, Ho Chi Minh City, Vietnam)

Inheriting the contents of socio-economic development strategies from other sectors

So far, many socio-economic sectors have begun to implement their development strategies up to 2020, in which there is content directly related to biodiversity, such as the Forestry Development Strategy, Fisheries Strategy, National Environmental Protection Strategy, National Climate Change Strategy, and Science and Technology Strategy. The National Biodiversity Strategy to 2020 has inherited and analyzed objectives, indicators, and solutions related to biodiversity from the above strategies to ensure coherence, consistency and rationality, meanwhile taking into account the integration of biodiversity conservation into other related strategies. The National Biodiversity Strategy to 2020 with vision to 2030 is a framework and basis for sectors and localities to generate their development strategies and plans related to the use of natural resources and biodiversity of sectors and localities.

PART 2: VIEWPOINTS - VISION - GOALS

2.1. VIEWPOINTS

a) Biodiversity is a fundamental element of the green economy; biodiversity conservation is one of the key measures to adapt to and mitigate the impacts of climate change;

b) Conservation and sustainable use of biodiversity contributes to poverty reduction and improved living conditions of the citizenry;

c) Biodiversity conservation shall be the responsibility of the whole society, of State authorities, agencies, and every organization and individual;

d) Socialization and international cooperation is enhanced to promote conservation and sustainable development of biodiversity;

e) Biodiversity conservation must be integrated into national, sectoral and provincial development strategies, plans and policies.

2.2. VISION TO 2030

By 2030, 25% of degraded ecosystems of national and international significance will be restored. Biodiversity shall be conserved and used sustainably, bringing major benefits to the citizenry and contributing significantly to the country's socio-economic development.

2.3. OVERALL TARGET TO 2020

That naturally important ecosystems, endangered, rare, and precious species, and genetic resources are preserved and used sustainably, contribute to the development of the green economy, and actively respond to climate change.

2.4. SPECIFIC TARGETS

- To improve the quality and increase the area of protected ecosystems, ensuring that the area of terrestrial protected areas accounts for 9% of the total territorial area, marine protected areas account for 0.24% of the sea area, forest coverage reaches 45%, primary forest remains at 0.57 million hectares, coupled with effective protection plans; that mangrove forests, seagrass beds, and coral reefs are maintained at the current levels; that 15% of degraded critical ecosystems are restored; and the number of internationally recognized protected areas are increased to 10 Ramsar wetlands, 10 biosphere reserves, and 10 ASEAN heritage parks.
- To improve the quality and populations of endangered, rare and precious species, ensuring that no new case of species extinction is reported, and significantly improve the status of endangered, rare and threatened species.
- To compile an inventory, to store, and to conserve native, endangered, rare and precious genetic resources (including animals, plants and microorganisms) to ensure that they are not impaired or eroded.

PART 3:
PROGAMS, AND SOLUTIONS FOR IMPLEMETATION

3.1. TASK CONTENT

3.1.1. Conservation of natural ecosystems

a) Consolidate and complete the system of natural protected areas

- Identify critical ecosystems and prepare plans for expanding the system of protected areas; Continue to implement the plan to establish marine[6] and wetland protected areas[7]; Establish biodiversity corridors connecting natural habitats of endangered, rare, and precious species prioritized for protection; *establish 03 transboundary tiger conservation sites with Laos and Cambodia (Pu Mat National Park in Nghe An province; Sop Cop Protected Area in Son La province; and Yok Don National Park in Dak Lak province); and establish, in cooperatation with Laos and Cambodia, a transboundary conservation site of Virachay, Dong Am Phan and Chu Mon Ray.*
- Conduct a comprehensive review of bioiversity–related provisions in the current legal documents, and make proposals for amendments, revision, and adjustments to ensure consistency; Conduct research on institutional structures to propose a model for one single mangement authority for protected areas, highlighting the involvement of and benefits to the communities living in the buffer zones;
- Improve the management system for protected areas, ensuring they are all established with a Management Board; Review and improve the functions, tasks, and organizational activities, and take measures to enhance capacity of the Management Boards; Implement policies creating incentives for staff woking at protected areas; Upgrade necessary infrastructure to support managerial activities; Provide field equipment for all protected areas, including biodiversity monitoring and reporting systems;
- Develop and improve regulations on the decentralization, ranking and classification of protected areas, and the procedure for establishing new protected areas; Prepare and implement management and financial plans, monitoring and regulations for the management of natural protected areas, with the target to have these in place for

[6] Decision No.742/2010/QD-TTg dated May 26, 2010 of the Prime Minister approving the national marine conservation planning by 2020.

[7] Decision No 1479/2008/QD-TTg dated October 13, 2008 of the Prime Minister approving the inland water protected areas planning by 2020.

all protected areas by 2015; *ensuring that by 2020 the area of terrestrial protected areas accounts for 9% of the total territorial area; marine protected areas account for 0.24% of the sea area, and forest coverage reaches 45%;*

- Conduct investigations and assess the values and ecosystem services of natural protected areas;
- Develop long-term plans for investment in the buffer zones of protected areas and implement a sustainable economic development model for households in these zones.

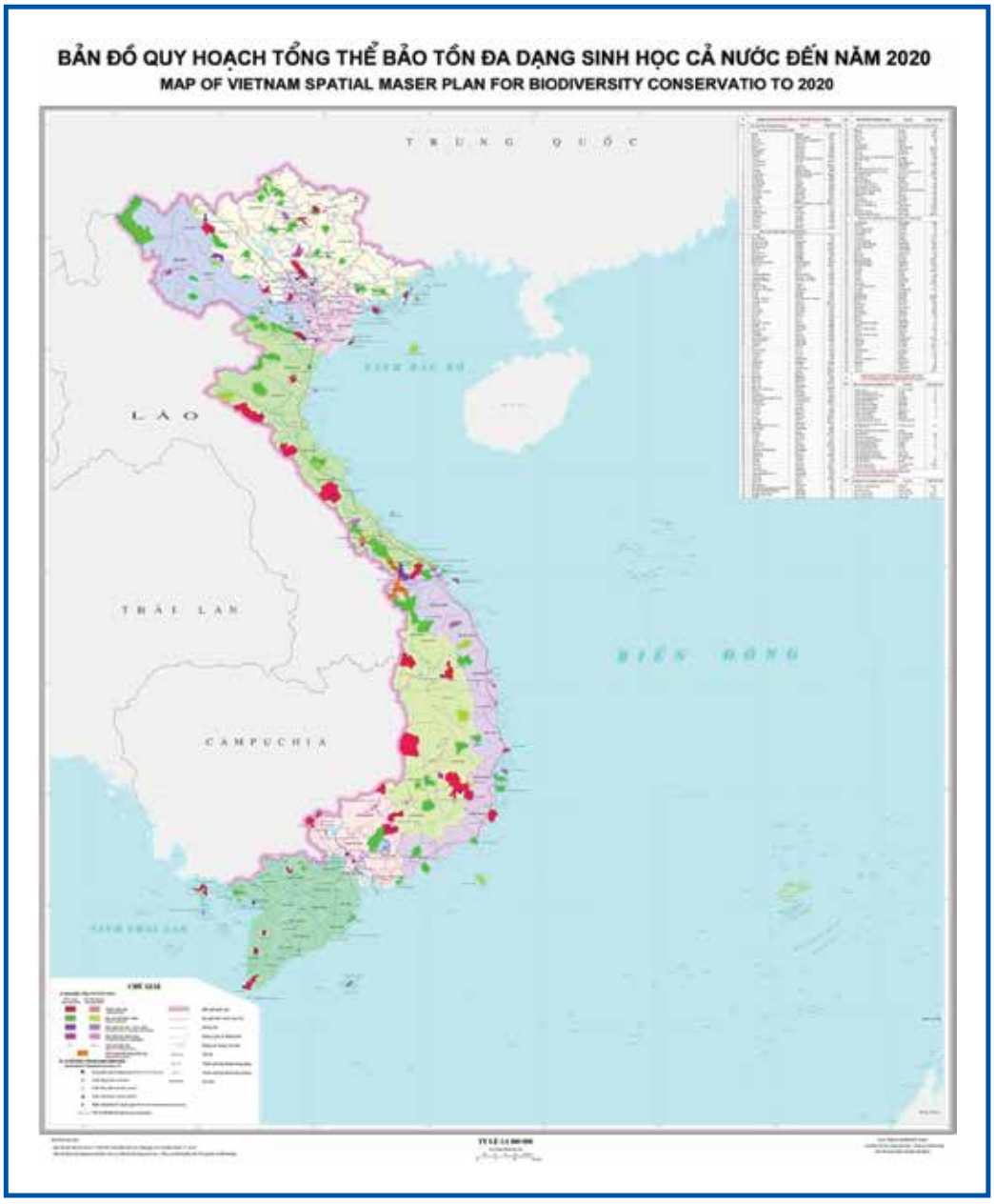


Figure 43. Map of Protected Areas planning by 2020 under Law on Biodiversity

(Source: BCA, 2013)

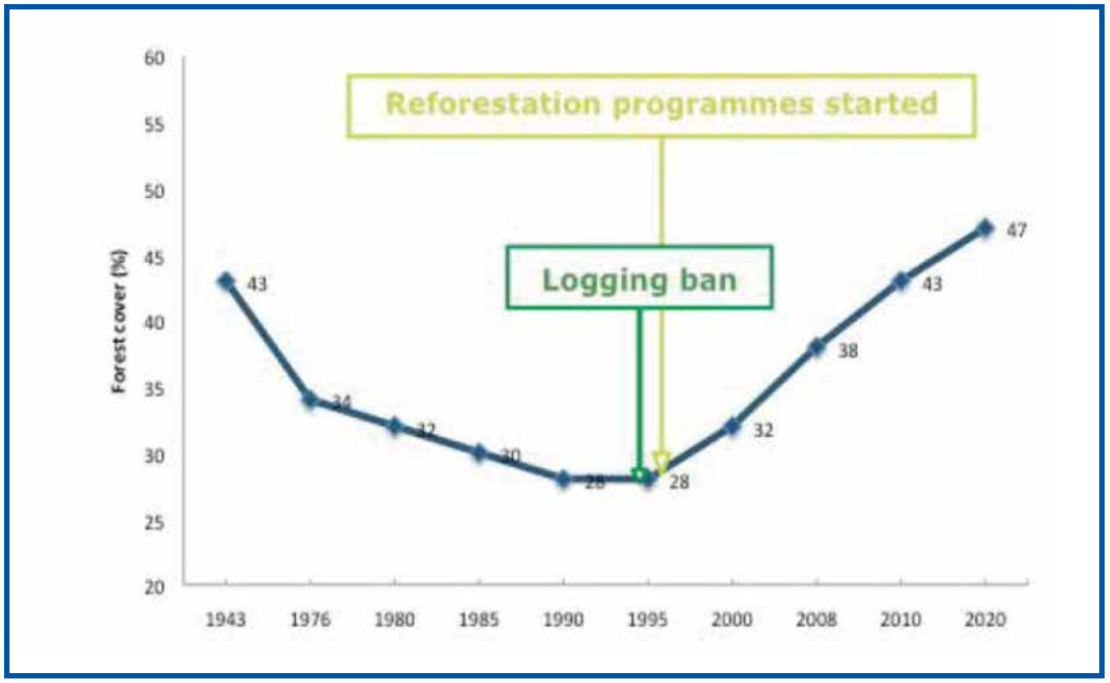


Figure 44. Forest cover of Vietnam from 1943 to 2010, and projection to 2020

(Source: VNFOREST 2013)

Table 16: Forestry land planning to 2020

(Source: Forestry Development Strategy, period 2006-2020)

Types	*Planning by 2020 (million ha)*
Forestry land	**16.24**
- Land under forest cover	15.57
1. Protection forest	***5.68***
- Land under forest cover	5.67
- Barren land	0.01
2. Special forest	***2.16***
3. Production forest	***8.40***
Percentage of land under forest cover	47%

b) Conservation of ecosystems of national and international importance

- Investigate, review and map ecological regions, identifying areas of high biodiversity value, degraded areas, and sensitive areas;
- Conduct research, collect statistical data to assess the situation, and develop a data bank and maps of natural wetlands, seagrass beds, coral reefs and other typical natural ecosystems;
- Strengthen protection activities in primary forests, *ensuring the primary forest remains at 0.57 million hectares, coupled with effective protection plans, and take measures to prevent deforestation and illegal logging in natural forests, special-use forests, and protection forests to reach forest coverage of 60%;*
- Continue to implement forest regeneration and afforestation programs, taking measures to enrich forests with native plants, and promote the active prevention of forest fires and increase fire response capacity for all forest levels;
- Continue to implement the targets and tasks in the mangrove forest restoration program under Decision 405/TTg-KTN dated 16 March 2009;
- Prepare and implement the national plan for conservation and sustainable use of wetlands with priority given to critical river basins; *priority for key rivers such as Vu Gia – Thu Bon river, Ba river- Con river, Dong Nai river and Cuu Long river;*
- Implement measures to protect and restore coral reefs and sea grass ecosystems of appropriate scale and scope; *implement the management solutionsat central and provincial levels to protect and recover at least 15% of key ecosystems that are being degraded;*
- Prepare and implement a plan to nominate protected areas for international awards, including wetlands of international importance (Ramsar site), biosphere reserves, and ASEAN heritage parks. Develop and issue guidelines for the management of internationally recognized protected areas; and implement policies to support capacity building for effective management of these areas; *making best effort to have 10 Ramsar sites, 10 biosphere reserves, and 10 ASEAN heritage parksby 2020.*

3.1.2. Conservation of wildlife and endangered, rare and precious species

a) Preventing the decline of threatened wildlife species, particularly endangered, rare and precious species prioritized for protection

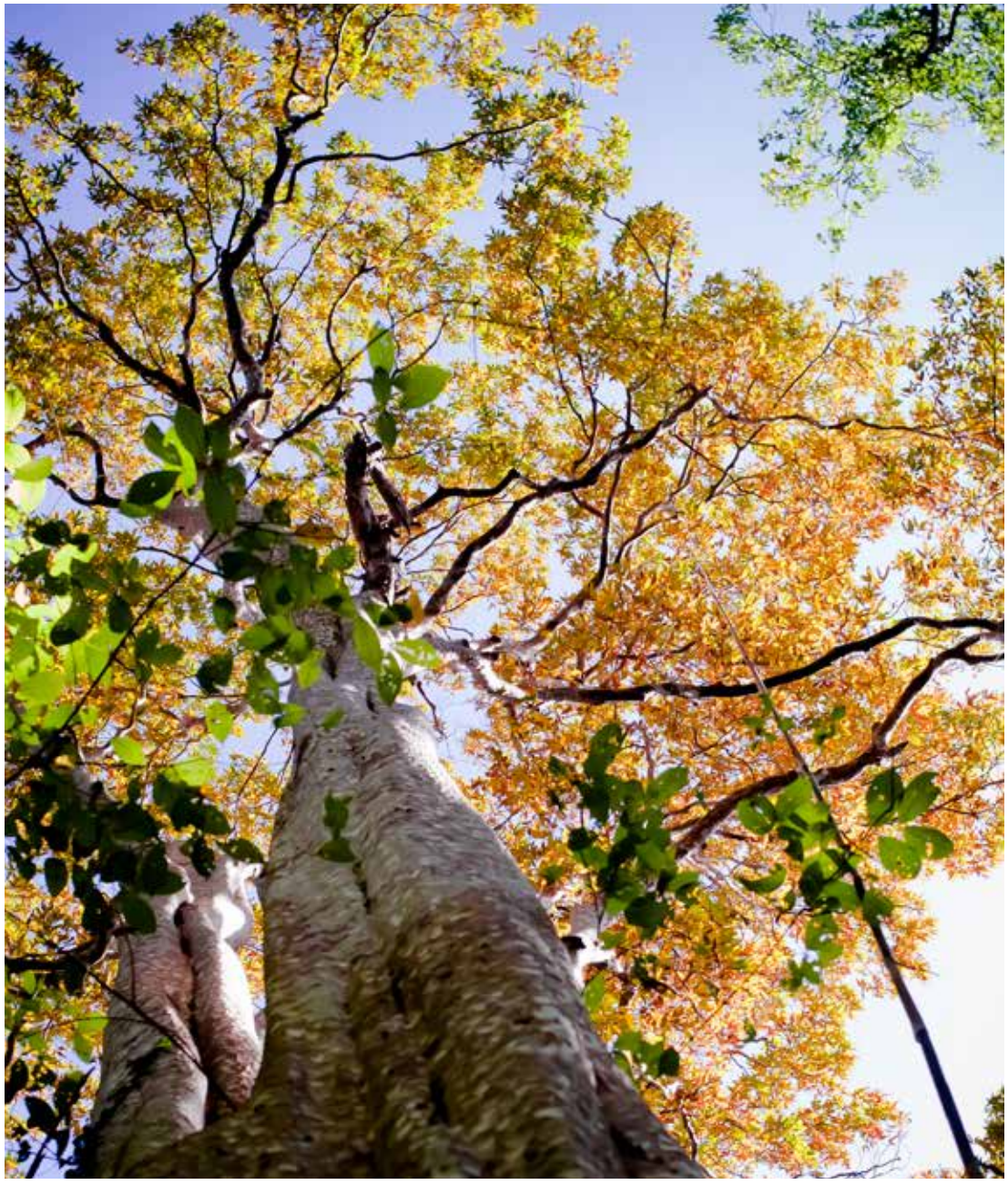
- Continue to effectively implement the targets and tasks of the program to protect rare and precious aquatic species at risk of extinction until 2015, with a vision to 2020, attached to Decision 485/QD-TTg dated 2 May 2008 of the Prime Minister;
- Investigate, monitor, periodically update and publish the list of endangered, rare and precious species prioritized for protection;
- Implement conservation programs for endangered, rare and precious wild species prioritized for protection, with special priority given to endangered large mammals: elephants, tigers, saola and primates; *ensuring that the number of endangered precious and rare species that being threatened for exction will not increase; significantly improve the status of at least 10 endangered precious and rare species that being threatened for exction.*
- Investigate and assess the status of endangered, rare and precious fauna and flora; periodically update, compile, and publish the Vietnam Red Book.

b) Conservation of native plant varieties, livestock and wild relatives of precious, rare species

- Take measures to conserve agricultural crop varieties, livestock and their wild relatives; increase the number of samples of crop varieties that are stored and preserved in gene banks; *ensuring that precious and rare endemic genetic resources will not be reduced and degraded.*
- Review, assess, and improve the effectiveness of the program for on-farm conservation of rare and precious crop varieties and livestock breeds; *implement economic incentives to encourage the involvement of farmers.*
- Continue to implement the national ex-situ and in-situ gene bank conservation program, for in-situ and ex-situ conservation of rare and precious plant varieties, livestock and microorganisms; *making effort to that the number of valued wild species researched for breeding will be increased by 30% compared to year 2010.*

c) Develop and enhance the effectiveness of biodiversity conservation units

- Assess the current status of ex-situ conservation facilities (zoos, botanic gardens, captive wildlife breeding facilities, medicinal plant gardens, gene banks, animal rescue centers) and take measures to improve the effectiveness of ex-situ conservation;
- Accelerate the construction of the Vietnam Natural Museum in accordance with the Decision 86/QD-TTg dated 20 April 2006 of the Prime Minister; *continue to upgrade Vietnam Nature Museum in Hanoi, and build nature museums in Ho Chi Minh city, Lam Dong province, Thua Thien Hue province and Dien Bien province.*
- Establish a network of rescue centers across the country to ensure the needs of rescued wildlife species by region



and category; prioritize investment in upgrading established rescue centers: Lam Dong Province (Cat Tien National Park), Vinh Phuc Province (Tam Dao National Park), Ninh Binh Province (Cuc Phuong National Park), Quang Binh Province (Phong Nha - Ke Bang National Park), Hanoi (Soc Son Rescue Center), Ho Chi Minh City (Cu Chi Rescue Center), Nghe An (Pu Mat National Park), Gia Lai (Kon Ka Kinh National Park), Thua Thien Hue (Nam Hai Van Protected Area), Son La Province (Copia Protected Area), Thanh Hoa Province (Ben En National Park), Can Tho City (O Mon Rescue Centre), Kien Giang Province (Hon Me Rescue Centre);

- Upgrade the Center of Plant Genetic Resources to become a National Plant Gene Bank that meets international standards.

Table17: List of biodiversity facilities planning system under the National Biodiversity Master Plan to 2020, vision to 2030

Region	By 2020							By 2030						
	Animal rescue center	Animal facility	Botanic garden	Medicine plant garden	Gene bank	Number of biodiversity facilities	Total area (ha)	Animal rescue center	Animal facility	Botanic garden	Medicine plant garden	Gene bank	Number of biodiversity facilities	Total area (ha)
North East														
North West	1	0	0	1	0	2	9	1	0	0	1	0	2	9
Red River Delta	2	1	1	1	3	8	344	2	1	2	1	4	10	445
North Central Coast	2	0	0	1	0	3	17	3	0	1	1	0	5	76
South Central Coast	0	0	0	1	0	1	1,2	1	1	0	1	0	3	6.2
Central Highlands	3	0	0	0	0	2	55	3	0	1	0	0	4	240
South East	2	1	2	0	0	5	693	2	1	3	0	0	6	699
Mekong River Delta	1	0	0	0	0	1	0,1	1	0	0	0	0	1	0.1
Total	12	2	4	5	3	26	1.297	14	3	11	6	4	38	2.409

3.1.3. Sustainable use, fair and equitable access, and sharing of benefits derived from ecosystems and biodiversity

a) Sustainable use of ecosystems

- Conduct research, develop guidelines and pilot the economic valuation of biodiversity and ecosystem services. The economic valuation of biodiversity and ecosystem services should be put into the national accounting system.
- Improve the policies and institutions to implement payments for the environmental services of forests at a national scale; and pilot a policy for payment for environmental services applicable to marine ecosystems and wetlands; *ensuring that by 2020, there will be at least 15 protected areas applying benefit sharing mechanism;*
- Replicate a model for the management of protected areas involving community participation, and implement mechanisms to share benefits in an equitable way amongst involved parties; *Apply and implement effectively co-management mechanism in most protected areas, ensuring the community involvement in the management of and sharing benefits from protected areas through policies to encourage community involvement in protected area patrolling and monitoring; implement and control strictly the mechanism of allocating land of protected areas; jointly implement mechanism of payment for ecosystem service and forest environment service leasing;*
- Develop and enforce the regulations on ecological tourism in Vietnam; *Effectively implement and manage ecological tourism to provide income for biodiversity conservation and for local people;*
- Develop and implement policies to support production of agricultural, forestry, and fisheries products that meet international standards for conservation and sustainable use of biological resources; *Research and evaluate granting certification to sustainable products or environmental-friendly products from agriculture, forestry, and fisheries; Supporting enterprises of agriculture, forestry, fisheries and aquaculture to register their product to be internationally recognized as sustainable or environmental-friendly products.*

b) Sustainable use of species and genetic resources

- Investigate, record and take measures to protect and develop valuable non-timber forest products (NTFP), especially medicinal and ornamental plants; and effectively control the unconstrained exploitation and cross-border trafficking of wild species;
- Promulgate policies and guidelines on breeding, farming and trading of common wild species; *Conduct researches on breeding valued species and processing technology to enhance their utilization value to contribute to local economic development and reduce pressure on natural resources; Develop and issue technical guidelines on aquaculture and trade of common wild species; Promulgate a list of common wildlife allowed to be bred and, traded and guidelines for registrating and monitoring the breeding of wildlife*.

c) Establish a mechanism for managing access to genetic resources, sharing benefits, protection, and traditional knowledge of genetic resources

- Conduct research and develop regulations guiding a mechanism for access to and benefit sharing of genetic resources; and pilot models for access and benefit sharing focusing on the interests of communities;
- Collect, document, and develop a geographic directory and take measures to conserve traditional knowledge of genetic resources;
- Develop and implement the action plan for capacity building to implement the Nagoya Protocol project.

3.1.4. Control activties that have negative impacts on biodiversity

a) Control activities considered to be unsustainable or causing environmental pollution such as conversion of land and water surface area use and agricultural practices

- Control the conversion of natural forest land use and water surface area of conservation value, to minimize negative impacts on biodiversity;
- Limit over-exploitation and changes to fishing, harvesting, and breeding practices of agricultural, forestry, and fisheries products; take measures to eliminate destructive fishing and havesting; *strictly appraise environmental impact assessment and conduct ex-post evaluation of all development projects related to areas with high biodiversity, particularly protected areas;*
- Take measures to control environmental pollution with adverse impacts on biodiversity; *limit impacst of environmental pollution to the ecosystems, species and genetic resources, particularly in watersheds and inland wetlands and coastal waters; support communities in monitoring and reporting water pollution to strengthen law enforcement.*

b) Control illegal hunting, trade and consumption of wild fauna and flora

- Encourage the broad participation of communities and mass media in the detection and prevention of illegal acts of exploitation, trafficking and consumption of wildlife; *organize campaigns to against wildlife crimes and publish results on media;*
- Improve and implement inter-sectoral coordination mechanisms between the environmental police, market management, customs, rangers, and fisheries authorities in the detection and enforcement of illegal exploitation, trafficking, and consumption of wildlife *by guiding and training the management and implementation of regulations on biodiversity conservation, the identification of endangered species, the settlement of confiscated species and the investigation of crimes;*
- Advocate and conduct awareness program to prevent the use and consumption of wildlife products nationwide *towards erasement of wildlife trading;*
- Strengthen cooperation with regional and international law enforcement networks (ASEAN WEN, Interpol) in trafficking and illegal transportation of wild plants and animals.

c) Control, halt and prevent the damage caused by invasive alien species; and enhance biosafety management of genetically modified organisms

- Investigate the status of invasive and potentially invasive alien species on a national scale, with particular emphasis on protected areas, agricultural areas, and forest ecosystems;
- Implementation of the project to prevent and control invasive alien species to 2020, under Decision 1896/QD-TTg dated 17 December 2012 of the Prime Minister; *ensuring that the number of discovered invasive alien species will not increase compared to 2010;*
- Enhance cooperation, exchange, and learning from experience on the biosafety management of genetically modified organisms, to improve technical and professional expertise of biosafety management agencies and units at all levels;
- Increase investment in infrastructure and resources for implementation of measures to monitor and control the risks of genetically modified organisms to the environment and biodiversity; and develop and promulgate legal documents on redress and liability in biosafety management activities of GMOs; *Assessment of status of the release of GMOs and products containing GMOs to the environment, and their appreance in the market.*

3.1.5. Biodiversity conservation in the context of climate change

a) Identification of climate change impacts on biodiversity and promote biodiversity conservation as a means to actively respond to climate change

- Conduct research to assess and predict the impacts of climate change on biodiversity of Vietnam;
- Conduct research on the role of biodiversity in the migitation of and adaptation to climate change in vulnerable areas such as river basins, coastal areas of Red River Delta and Mekong River Delta; and take measures to increase the resilience ability of biodiversity in these regions.

b) Development of biological corridors to increase connectivity among forest ecosystems and critical biodiversity areas to adapt to climate change

- Develop policies for the management of biodiversity corridors, defining management objectives, the use of land in biodiversity corridors, and their connection to the development of land use planning at the local level;
- Establish biodiversity corridors connecting protected areas, *making efforts to establish 04 biodiversity corridors by 2020 and prioritize the implementation of pilot projects in the northern mountainous areas, central and western highland regions; apply mechanisms to assist financial resources for forest corridors.*

c) Implementation of forest regeneration program using methods and approaches such as biodiversity conservation, enhancing carbon stock, and adaptation and mitigationof climate change

- Integrate biodiversity conservation targets into the implementation of the national action program on "Reducing greenhouse gas emissions through efforts to limit deforestation and forest degradation, sustainable management of forest resources, and conserving and enhancing forest carbon stocks" period 2011-2020 (REDD +) approved by the Prime Minister under Decision 799/QD-TTg, dated 27 June 2012;
- Map areas of high biodiversity value in the REDD + program; promote the use of native species for forest enrichment and restoration in the framework of REDD+; *provide information of the implementation of national action plans on REDD+ and contribute to reach two targets of biodiversity conservation and adaptation to climate change;*
- Reduce risks to biodiversity from implementation of the REDD+program through the application of stringent social and environmental security mechanisms.

3.2. LIST OF PRIORITY PROGRAMS, PLANS AND PROJECTS

NO.	*Name of priority project*	*Focal agencies for preparation and submission*	*In cooperation with*	*Submission time*
1	Plan on strengthening the institutional systems for biodiversity management	Ministry of Natural Resources and Environment	Ministry of Home Affairs, Ministry of Agriculture and Rural Development, Provincial People's Committees	2015
2	Plan on investigation, inventory and development of a national biodiversity database	Ministry of Natural Resources and Environment	Provincial People's Committees, Ministry of Science and Technology, Ministry of Agriculture and Rural Development, Vietnam Academy of Science and Technology	2016
3	Program on control of illegal exploitation, trade and consumption of endangered wildlife	Ministry of Agriculture and Rural Development	Ministry of Natural Resources and Environment, Ministry of Public Security, Ministry of Industry and Trade	2014
4	Plan on strengthening management capacity for system of natural protected areas	Ministry of Agriculture and Rural Development	Ministry of Natural Resources and Environment, Provincial People's Committees, Management Board of Nature Reserves	2014
5	Program on the conservation and sustainable use of genetic resources	Ministry of Science and Technology	Ministry of Natural Resources and Environment, Ministry of Agriculture and Rural Development, Ministry of Health, and other concerned ministries, ministerial-level agencies, and government agencies	2015
6	Plan to strengthen biodiversity crime prevention	Ministry of Public Security	Ministry of Natural Resources and Environment, Ministry of Agriculture and Rural Development	2014
7	Plan on restoration of degraded critical ecosystems	Ministry of Agriculture and Rural Development	Ministry of Natural Resources and Environment, Provincial People's Committees	2015

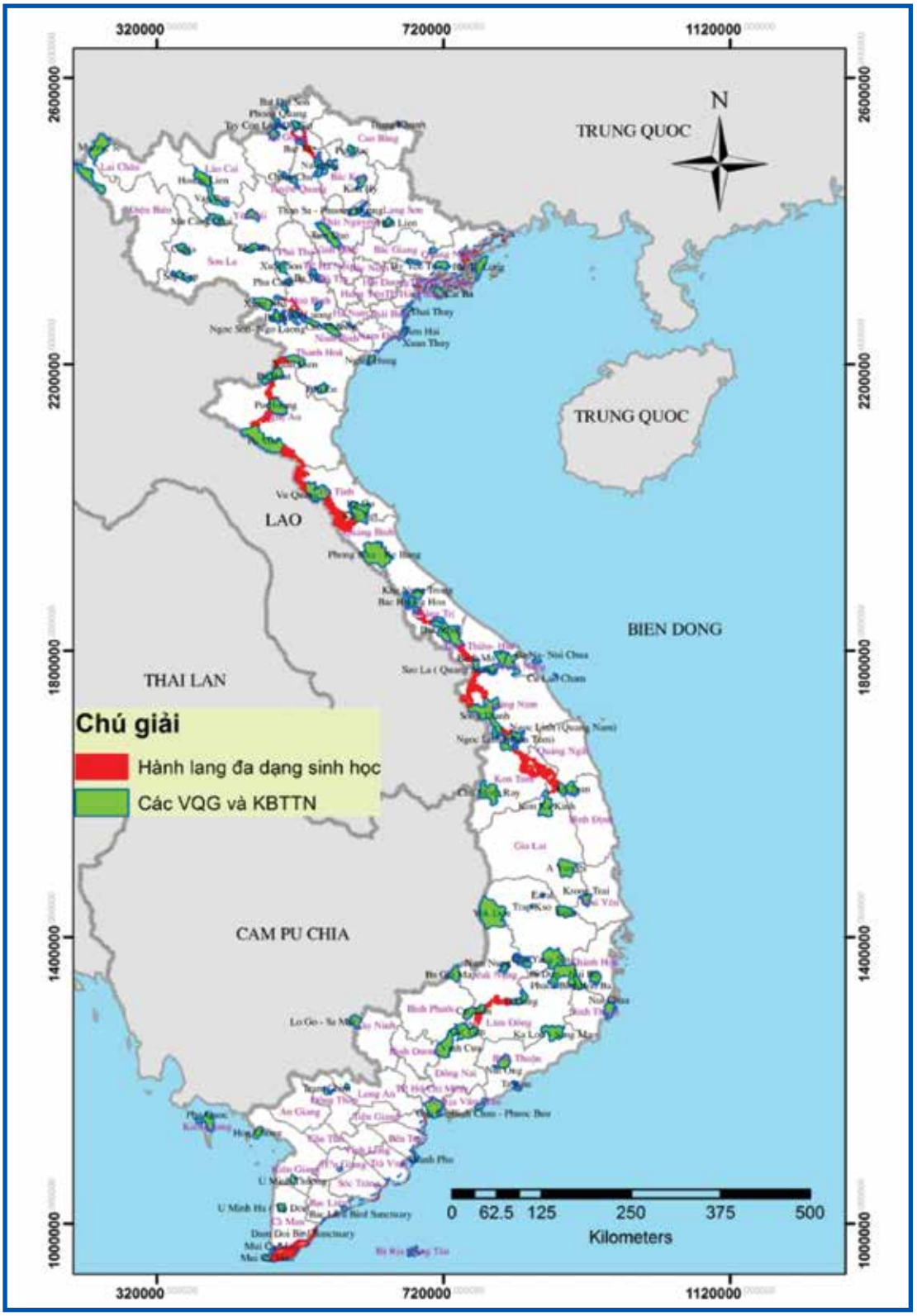


Figure 45. Map of biodiversity corridors planning to 2020, vision to 2030

(Source: BCA, 2013)

3.3. SOLUTIONS FOR IMPLEMENTATION

3.3.1. Change in behavior and awareness of state management organizations and communities towards biodiversity conservation and sustainable use

- Increase awareness of the agency responsible for biodiversity management; diversification of resources and mechanisms to share information with appropriate authorities at all levels; *Develop policy messages about the importance of biodiversity for sustainable development, especially emphasizing the connection amongst biodiversity and economic development, ecosystem services, international tourism and human health; ensuring that policy messages are sent to the relevant authorities at central and local levels; learn international experience in biodiversity conservation and management for inter-agency steering committee for the implementation of the national biodiversity strategy by 2020 and vision to 2030;*
- Promote information, education, and communication regularly and extensively to all organizations, individuals and communities about the importance of conservation and sustainable use of biodiversity; enhance the social responsibility of the business sector in conservation and sustainable use of biodiversity; *Research and apply measures to encourage enterprise involvement in biodiversity conservation and sustainable development;*
- Integrate biodiversity conservation content into teaching curricula, and especially extracurricular programs, for appropriate education grades;
- Promote and honor organizations and individuals that are outstanding role models for the conservation and sustainable use of biodiversity; *Organize awards for biodiversity conservation in the structure of the national environmental prize; focus on building "faces represents the conservation of biodiversity"; Develop and implement the provisions of social responsibility of businesses, which recognizes the value of biodiversity (economic and human health people) and contribute efforts in conservation management and sustainable use of biodiversity;*
- Develop and implement a forum on conservation and sustainable use of biodiversity in the mass media; *Building relationships on biodiversity conservation partnership between the public and private sector; Attractive organizations: the Women's Union of Vietnam, the Vietnam Farmers Association, Ho Chi Minh Communist Youth Union, Vietnam War Veterans' Association... and local communities to the development and implementation of plans to raise awareness on biodiversity.*

3.3.2. Improve the legislative and institutional system and strengthen the capacity of law enforcement for the implementation of legal acts on biodiversity

- Amend, supplement and timely promulgate legal documents on biodiversity to ensure consistency and efficiency; *pay attention to reviewing the sanctions for violations of provisions on biodiversity and their effectiveness; guiding the mainstreaming of biodiversity conservation into land use planning, and the planning of a number of key sectors (agriculture, forestry and fisheries) and of PPCs.*

- Strengthen the biodiversity management system; develop and implement coordinating mechanisms between biodiversity management authorities; *Reviewing functions, tasks and organizational apparatus of the state agencies involved in key biodiversity management; which include law enforcement on biodiversity conservation, information sharing mechanisms, skills and coordination.*

- Improve the capacity forlaw enforcement services of biodiversity conservation staff from the central to local levels; diversify resources and training methods for staff in biodiversity conservation at all levels; *Assess the situation and analyze needs for capacity building of state management agencies for the biodiversity conservation and management (especially the agencies and units under the Ministry of Natural Resources and Environment, Ministry of Agriculture and Rural Development and the Protected Area Management Board) to identify lacking technical competence and professional and recommend appropriate training programs*:

  + *Consolidate and strengthen the local state biodiversity management agencies; establish biodiversity management units under the Departments of Environmental Protection and assign specialized staffing of biodiversity;*

  + *Strengthen the law enforcement on biodiversity management and conservation, including the implementation of professional training for the enforcement of legislation on biodiversity to forest and aquatic rangers, environmental police, market management staff and custom staff;*

  + *Perform regular professional training on biodiversity conservation for the staff specialized in biodiversity who are working at provincial Departments, units, and biodiversity facilities; focusing on issues: management planning, business planning, investigation and monitoring of biodiversity; build and manage databases, skills for collection, processing and preservation of fauna and flora specimens; identification and rescue of species; geographic information system (GIS), reporting and using software of databases management...;*

- Conduct research to establish a biodiversity monitoring network; implement biodiversity monitoring at protected areas; set up databases and establish a mechanism for reporting and information sharing between central authorities and protected areas; *development of biodiversity indicator set and technical guidelines on biodiversity monitoring conformity with international standards; implementing projects piloting*

biodiversity monitoring for three typical ecosystems: forest, wetland and marine.

3.3.3. Strengthen integration of biodiversity conservation in policy development

- Develop criteria and guidelines for integrating biodiversity conservation into the strategies, master plans and planning at national, sectoral and local levels;
- Improve the quality of assessments of biodiversity-related requirements during environmental impact assessments for the strategic planning and development of projects.

3.3.4. Promote scientific research, development and the application of modern technology in conservation and sustainable use of biodiversity

- Promote scientific research on the conservation and sustainable use of biodiversity; focus research and development on the application of models for breeding and reintroduction of wild species into nature, the sustainable use of species and genetic resources, and efficient eco-tourism activities; *promote the role of science and technology in promoting and improving the quality and efficiency of the economy, boosting the transition towards a green economy;*
- Develop, acquire and transfer new technology that uses sustainable exploitation measures for natural resources and biodiversity;
- Participate in the World Bank's program to develop an inventory and pricing system for ecosystem services, and promote the accounting of national natural resources;
- Enhance bioprospecting studies to detect genetic material and derivatives that have valuable applications for economic and social development.

3.3.5. Increase financial resources for biodiversity conservation

- The State shall ensure resources and budgets in accordance with the delegated level to implement activities of the Strategy; *Develop and implement policies to enhance investment in biodiversity resources, especially through mechanisms such as payment for environmental services, biodiversity offsets, other financial mechanisms through the carbon market and encourage investment from the private sector; allocate environmental funds for managing natural protected areas by types and level of response required for biodiversity conservation in protected areas.*
- Encourage and mobilize community participation and business-sector investment in biodiversity conservation; conduct research on the establishment of a biodiversity conservation fund; develop mechanisms to diversify investment sources for biodiversity conservation, particularly payments for environmental services, biodiversity offsets, and other financial mechanisms through carbon markets and private sector investment.
- Strengthen the support of foreign organizations and individuals in biodiversity conservation activities; *particularly funding from the Global Environment Fund allocation for Vietnam in the period GEF 6 (2014 - 2018), GEF 7 (2018 - 2022) focusing support for the priority tasks of the Strategy.*

3.3.6. Promote integration and international cooperation in conservation and sustainable use of biodiversity

a) Actively participate in and effectively implement international treaties related to conservation and sustainable use of biodiversity; *pay much attention to biodiversity and environment protection in the negotiation and conclusion of international agreements; attract foreign investment in biodiversity conservation;*

b) Promote and attract foreign resources for the conservation and sustainable use of biodiversity; *propose initiatives for international cooperation, participation and effective implementation of international agreements in the field of biodiversity to which Vietnam is a member;*

c) Strengthen learning and exchange of resources and experiences with other countries and international organizations; *promote regional and international cooperation, enhance coordination with international organizations in the conservation and sustainable use of natural resources, biodiversity.*

PART 4:

IMPLEMENTATION ARRANGEMENTS

4.1. Ministry of Natural Resources and Environment shall be responsible for:

a) Assisting the Prime Minister to chair, coordinate and implement the NBSAP;

b) Implementing tasks, programs, schemes and projects assigned priority;

c) Developing criteria for evaluating the effective management of biodiversity conservation; guide and monitor the implementation of the strategy on a national scale; conduct a preliminary review of the Strategy by the end of 2015, and comprehensive review of the Strategy implementation by the end of 2020.

d) Minister of Natural Resources and Environment shall establish the interdisciplinary Steering Committee headed by the Minister of MONRE to implement this strategy. The Steering Committee include leader of MARD as the deputy head, and the members are representatives from: Office of the Government, National Assembly Office, the Ministry of Planning and Investment, Ministry of Finance, Ministry of Foreign Affairs, the Ministry of Science and Technology, Ministry of Education and Training, the Ministry of Transport, Ministry of Culture, Sports and Tourism, Ministry of Information and Communications, Ministry of Public Security, Ministry of Interior, Ministry of Justice, Ministry of Defense, Ministry of Industry and Trade, Vietnam Union of Science and Technology Associations, Vietnam Academy of Science.

4.2. Ministry of Planning and Investment shall be responsible for:

a) Allocating funds for central ministries and agencies to implement the Strategy;

b) Raising funds from international donors for the conservation and sustainable use of biodiversity.

4.3. Ministry of Finance is responsible for allocating the state budget and providing guidance on its use in the implementation of programs, projects and tasks as outlined in the Strategy.

4.4. Ministry of Agriculture and Rural Development shall preside over and perform the duties of programs, schemes and priority projects with respect to the functions and mandates of the Ministry; integrate biodiversity conservation activities into fisheries, forestry and agriculture plans, programs and projects.

4.5. Other ministries and central agencies within the scope of their responsibilities and powers, shall coordinate with the Ministry of Natural Resources and

Environment and other ministries concerned to develop and implement programs, schemes, projects and tasks in accordance with the objectives, content, methods, measures and solutions in the strategy.

4.6. Provincial People's Committees and centrally-managed cities shall be responsible for:

a) Implementing the Strategy in accordance with the guidance of the Ministry of Natural Resources and Environment;

b) Developing and implementing Provincial Biodiversity Action Plans to detail the tasks set out under the National Strategy;

c) Allocating and efficiently using appropriate local resources, sourced by the central government, to implement the strategy; *Proactively and actively mobilizing financial and human resources to implement the strategy; mainstreaming the implementation of national biodiversity strategy into other relevant strategies; mainstreaming of biodiversity into making socio-economic policy; regularly checking the implementation of strategies at provinces; performing annual reporting on implementation of the strategy in the province according to regulations.*

4.7. District People's Committees

District People's Committees shall organize the implementation of the Strategy in their local areas under the guidance of the Provincial People's Committee, the Ministry of Natural Resources and Environment and other related ministries and agencies; actively mobilizing financial and human resources to implement biodiversity conservation; integrating the effective implementation of biodiversity conservation into socio-economic development activities as well as other transportation planning and development activities in their local areas; regularly inspecting the implementation of biodiversity conservation in their local areas; and annually reporting on their local areas as prescribed.

4.8. Business community

Enterprises shall be responsible for strictly complying with laws and regulations on biodiversity; participating and actively making proposals, and implementing programs and projects on biodiversity conservation.

4.9. According to their own functions, socio-political organizations, social organizations, and social vocational services

will be actively involved in monitoring conservation activities and sustainable use of biodiversity.

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Appendix1: PROCESS OF THE NBSAP DEVELOPMENT

In response to the calls of the Convention on Biological Diversity (CBD) for the development, adjustment, and update of the Strategic Plan for Biodiversity in the period 2011-2020, MONRE in cooperation with national and international experts, together with the United Nations Development Programme (UNDP), developed the Project "Developing the National Biodiversity Strategy and Action Plan and Mainstreaming Biodiversity Conservation into Provincial Planning". One of the main goals of the project is to support the development and promote the issuance of the National BiodiversityStrategy to 2020, vision to 2030.

While the Global Environment Facility Secretariat (GEF SEC) was considering the project approval, the Government of Vietnam requested special attention to develop the new NBSAP, which provides meaningful direction for biodiversity conservation in Vietnam. Accordingly, on July 9, 2011, MONRE approved the establishment of the Drafting Committee and Editorial Group for the new NBSAP development under Decision No. 1426/ QD-BTNMT. The Drafting Committee has 28 members and the Editorial Group has 19 members from the following agencies: Ministry of Natural Resources and Environment, Ministry of Agriculture and Rural Development, Ministry of Science and Technology, Ministry of Industry and Trade, Ministry of Foreign Affairs, Ministry of Justice, Ministry of Health, Ministry of Public Security, Ministry of Education and Training, Ministry of Transport, Ministry of Planning and Investment, Ministry of Information and Communications, Ministry of Defense, Ministry of Construction, Government Office, Institute of Ecology and Biological Resources, and National Assembly Office.

The Strategy undergone two name changes. Firstly, it was titled "The National Biodiversity Strategy to 2020 and National Biodiversity Action Plan to 2015". Finally, it was changed to "The National Biodiversity Strategy to 2020, vision to 2030" after the Drafting Committee meeting on the orientation of development of the NBSAP on March 23, 2012.

Some milestones in the process of developing the Strategy:

1. **August 2012:** Selected an international expert to provide technical assistance for the NBSAP development as Dr Scott Perkin, RIT Senior Manager, Natural Resources Group, Asia IUCN, who has many years of experience working for IUCN in the field of biodiversity conservation.

2. **October 2012** –April 2013: Established and organized three expert groups to assess the status of: (i) Policy and institutions; (ii) Ecosystems; (iii) Species and genetic resources; and develop three thematic reports.

3. **October 2012** –March 2013: Organized consultations with stakeholders by direct interview and discussion at workshops and sent official correspondence to related agencies requesting their input in order to determine key issues of the Strategy.

   - Organized technical meetings with MARD (VNFOREST, VN Fisheries Administration); MOST (Department of Science, Society and Nature Management);
   - Organized consultation workshops in Hanoi, Tam Dao, Ba Vi, and Tan Da Resort with the participation of related agencies, national and international NGOs and experts;
   - Organized consultation workshops with the participation of related departmentsand PA management boards in provinces nationwide, of which, one workshop was organized in Da Nang (for the South) and one workshop was organized in Hanoi (for the North);
   - Received the official comments from related Ministries, ministerial-level agencies, and Provincial People's Committees for the draft strategy. The draft strategy was also published on the website of the Ministry of Natural Resources and Environment to collect public opinions.

4. **On May 28, 2013:** The Ministry of Natural Resources and Environment officially submitted the Strategy to the Prime Minister for approval (Letter of Statement No. 47/TTr - BTNMT May 28, 2013). A summary report of the comments collected from related agencies and units was attached together with the Letter.

5. **March – July 2013:** Organized seminars with the Government Office (Department of Science and Education, and Literacy), for editing and finalizing the Strategy.

6. **On July 31, 2013:** The Prime Minister officially signed the Decision number 1250/QĐ-TTg approving the National Biodiversity Strategy to 2020, vision to 2030.

Appendix 2: IMPLEMENTATION OF BAP 1995 AND 2007

This table provides only a crude estimate of the extent to which the 59 projects recommended by the 1995 NBSAP have been achieved. Of the policy projects, eight out of 11 are accomplished or in progress, and of the management and conservation projects, 24 out of 33 are accomplished or in progress. Of the complementary projects, only five out of 15 are accomplished or in progress, but this reflects uneven progress with ex-situ conservation projects. Overall, 37 of the 59 projects (63%) are accomplished or in progress. However, success in this case is defined as whether the project outputs have been achieved, such as a new policy issued or a protected area established. What is missing is an assessment of the project outcomes, for example the extent to which people's behaviour has changed or conditions on the ground have improved. Nearly all the available evidence indicates that conservation conditions have deteriorated since 1995, notably in terms of the deteriorating threatened status of many species and the loss of natural habitats both inside and outside of protected areas. Outputs therefore give a misleading impression of the extent to which the recommendations of the 1995 NBSAP have been successfully implemented.

Review of Implementation of BAP1995

Project Categories	***Approaches***	***Projects***	***Progress*** *(1 = Accomplished, 2 = In Progress, 3 = Not Started)*
Policy Programs: 4/11 Accomplished 4/11 In Progress 3/11 Not Started	Policy Tools	Institutional review	1
		Strengthening law enforcement	2
		Policy research	1
	Participation and Expanded Players	Training NGOs in biodiversity conservation	1
		Develop provincial biodiversity plans	2
	Traditional Approaches	Traditional natural resource use study	2
		Protection of traditional medicine resources	3
	Marine Issues	Enforcement of fisheries regulations	3
		Marine pollution monitoring and control	3
	Regional Biodiversity	Forest product border control	1
		Regional biodiversity issues	2
Management and Conservation Projects: 17/33 Achieved 7/33 In Progress 6/33 Not Started	Conservation and Management	Management of Vu Quang NR	3
		Management of Cat Tien NP	1
		Management of Bach Ma NP	1
		Management of Ba Be/NaHang Biodiversity Areas	3
		Management of Thuong Da Nhim Nature Reserve	1
		Management of Chu Yang Sinh Nature Reserve	2
		Protection of important wetland sites	3
		Conservation of Hoang Lien Son Mountains	1
		Conservation of HoKe Go Forests	
		Conservation of Red River Delta wetlands	2
		Management of CauHai Tam Giang lagoons	1

Management and Conservation Projects: 17/33 Achieved 7/33 In Progress 6/33 Not Started		Management of Chu Mom Ray NP	
		Management of Cat Ba NP	1
		Protection of Da Lat forests	1
	Protected Area Establishment	Establish Pu Mat NR	2
		Conservation of biodiversity in Annamese lowlands and Da Lat plateau	1
		Establish coral reef PAs	2
		Establish coastal marine PAs	1
		Establish MuongNhe NR	1
	Buffer Zones and Community Projects	Integrated coastal zone management	2
		Yok Don integrated conservation	1
		Buffer zone management	1
	Rehabilitation	Rehabilitation of degraded mangroves in Ca Mau	1
		Midlands restoration research	2
	Human Approaches	Capacity building for biodiversity conservation	1
		Cuc Phuong training development	1
		Promoting non-damaging fishing methods	2
		Wetlands conservation strategy	1
		Models for management of uncontrolled migration - Dak Lak	3
		Investigation of status of offshore fisheries resources	3
		Scientific training on marine environment abroad	3
		Ecotourism and protection of Ba Ra forests	3

Complimentary Actions: 2/15 Accomplished 3/15 In Progress 7/15 Not Started	Ex-situ and Scientific Methods	Establishment of national gene bank of useful plants	
		Culture of rare and depleted marine species	3
		Zoological facility management strategy	
		Upgrading botanic gardens	
		Wildlife farming pilot projects	1
	Traditional Approaches	Village biodiversity development	3
		Research on suitable methods for reforestation and regeneration	2
		Conservation of agricultural biodiversity	3
	Databases and Habitat Monitoring	Natural habitat monitoring programme	3
		Establishment of national biodiversity database	3
		Marine biodiversity database	3
		Biodiversity of Ke Bang Karst	1
	Public Awareness	Public awareness of marine conservation	2
		Biodiversity public awareness campaign	2
		Development of biodiversity awareness center	3

Review of the implementation of Biodiversity Action Plan in 2007

On May 31, 2007, the Prime Minister approved the Biodiversity Action Plan (BAP 2007) under the Decision No.79/2007/QĐ-TTg. After three years of BAP implementation, MONRE organized the review of its implementation to report to the Government. In late 2010 and early 2011, the Biodiversity Conservation Agency under the Vietnam Environment Administration, MONRE, developed a report on the review of three-year implementation of Decision 79 (BAP 2007) to submit to the Prime Minister. The below table is a summary of the achieved and not yet achieved goals.

Goals by 2010	***Achievements***	***Not yet achieved***
a. Conservation and development of terrestrial biodiversity.		
Consolidate, improve and develop the system of special-use forests (to contribute to forest cover rate: 42 – 43%);	Forest cover reached 39.5% in 2010; and 41.5% in 2014	Have not reached the forest cover goal (42-43%). Classification system of protected areas is inconsistent. Protected areas did not meet the actual requirements.
Rehabilitate 50% of the degraded watershed area;	Between 2006-2008, 620,188 hectares of forest (of which, 139,625 hectares was protection and special-use forest, and 480,563 hectares was production forest) has been newly planted.	Natural forests with high biological diversity are still being exploited and declining more than before. Particularly in Quang Nam province, from 2007 to 2009, approximately 600 hectares of natural forest was lost. In some mountainous provinces, the watersheds of major rivers have forest cover below 50%; for example: Lai Chau (39.2%), Lang Son (46.33% in 2008), and Lao Cai (48.2%). Chances of complete recovery of species-rich forests are low since these forests have been fragmented and isolated.
Effective protection of animals and plants that are precious, rare and are in danger of extinction;	There have been some successful attempts in breeding many species of wildlife and rare animals, including black python, gold python, long-tailed macaque, cobra, wild pig, spotted deer, tortoise, turtle, and freshwater crocodiles. Some types of fish are being bred in large numbers, such as Semilabeo notabilis, giant barb.	

Three Nature Reserves were recognized as World Natural Heritage Areas or Biosphere Reserves. Five nature reserves have been recognized as ASEAN Heritage Parks.	Three Biosphere Reserves were recognized after the promulgation of Decision 79 (BAP 1987): Western Nghe An Biosphere Reserve (recognized in September 2007), and Ca Mau and Cu Lao Cham Biosphere Reserves (recognized in May 2009).	No further protected areas have been recognized as ASEAN Heritage Parks, except for the four protected areas that have been recognized previously.
b. Conservation and development of wetland and marine biodiversity		
Increase the toal area of wetland and marine protected areas that are of national and international importance to over 1.2 million hectares;		- The total area of wetland protected and marine protected areas have yet to reach the target of 1.2 million hectares by 2010 in Decision 79. - There are no wetland/inland water protected areas
Restored 200,000 hectares of mangroves;	Mangrove forest area reached 130,000 ha in 2012	The mangrove forest area has not yet achieved the targeted coverage.
Establishment of five wetland areas that meet the conditions and requirements to be recognized as wetlands of international importance (Ramsar sites).	Only four Ramsar sites have been recognized after the Decision 79 (BAP 2007): Ba Be - Bac Kan (2011); Tram Chim - Dong Thap (2012); Mui Ca Mau (2013); and Con Dao National Park (2014)	Has not yet met the target of five Ramsar sites
c. Conservation and development of agricultural biodiversity		
Announce and complete the conservation system to effectively conserve crop varieties, animal breeds, native agricultural microoganisms, etc. that are rare, valuable and possess high socio-economic values.	Ministry of Agriculture and Rural Development has built gene banks and DNA gene bank of rare animals; a national resource conservation system of plant genetics has been formed with the Plant Resource Centre as a focal point, along with a nationwide network of 19 agencies; conserved and utilized more than 20,000 samples of nearly 250 varieties of crops; collected 7,275 biological samples of cattle, goats, pigs and chickens in Ha Giang province; and 8,014 spotted deer were numbered and tracked in Nghe An and Ha Tinh.	

	From 2007 to 2010, Ministry of Industry and Trade preserved and safely stored the genetic resources of some plant species such as samples of 246 varieties (of which there are 118 oil varieties, 61 cotton varieties, 10 grape varieties, and 35 pulpwood varieties).	
d. Sustainable use of biological resources		
Establish and develop models for sustainable use of biological resources; control, prevent and eliminate the exploitation, trading and consumption of precious wild flora and fauna that are rare and endangered	Ministry of Natural Resources and Environment has developed several community-based conservation models. Overall, the management and control of trade, transport and illegal consumption of rare and precious wild animal and plant species has been enhanced.	The number of violations remains high every year. According to the statistics from the Forest Protection Department and the Ministry of Agriculture and Rural Development in January 2011, confisticated forest products in 2010 included 1,352,350m3 of rare round wood, 2,110,220 m3 of rare sawn wood, and 12,936 wild animals, of which 508 were rare and endangered.
Monitor, evaluate and prevent the spread of invasive alien species;	From 2007 to 2010, the ministries and agencies have coordinated management and control of invasive alien species. Specifically, in 2009 the Ministry of Agriculture and Rural Development issued Circular No. 53/2009/TT-BNN dated 21/08/2009 on the management of invasive aquatic species in Vietnam.	Some problems have arised; for example, 40 tons of red-eared slider turtles were imported (approximately 25,660 turtles) to make fresh food in Can Tho.
Testing 100% of the imported breeds, species, and genetic reesources.	In 2009, Ministry of Agriculture and Rural Development conducted testing on 254,835 imported consignments which weighed 21.68 million tons, and licensed 231 domestic imports of livestock and feed such as pigs, cows, goats, chickens, and other poultry, as well as 989 imports of animal feed and feed ingredients. 1,077 pest samples have been evaluated and no phytosanitary sample has been found. Investigated 217 warehouses with 636,105 tons of goods and found one Mexican bean beetle outbreak on white beans in Quang Ninh.	

e. Strengthening the capacity of state management of biodiversity and biosafety		
Consolidate and strengthen administrative capacity for the system of state institutions, especially the national coordinating agencies and competent authorities in the system of biodiversity and biosafety; meet the management requirements for these two areas.	The Prime Minister has approved the functions, tasks, powers and organizational structure of the three main bodies that perform state management of biodiversity and biosafety as Vietnam Environment Administration (Decision 132/2008/QD-TTg dated 30/9/2008), the Vietnam Forestry Administration (Decision 04/2010/QD-TTg dated 25/01/2010), and the Vietnam Fisheries Administration (Decision 05/2010/QD-TTg dated 25/01/2010).	The system of state management agencies on biodiversity is weak, with many duplications and overlapping functions and tasks of the ministries and sectors.
Develop and improve the system of mechanisms, policies and legal documents on the management of biodiversity and biosafety.	The system of mechanisms, policies and legal documents on the management of biodiversity and biosafety has been developed and is being refined, especially the Law on Biological Diversity adopted by the National Assembly on 13/11/2008; The Decree detailing and guiding the implementation of some articles of the Law on Biodiversity (No. 65/2010/ND-CP of June 13, 2010); the Decree on biosafety for genetically modified organisms, genetic specimens and genetically modified organism products (Decree 69/2010/ND-CP dated 06/21/2010); Decision No. 1479/QD-TTg dated 13/10/2008 approving the planning of the inland water protected areas system by 2020; Decision No. 742/QD-TTg dated 26/05/2010 approving the planning of marine protected areas system by 2020; Many other related circulars of the Ministry of Natural Resources and Environment, Ministry of Agriculture and Rural Development, and Ministry of Science and Technology have been issued.	There is still a lack of legal documents guiding the implementation of the Law on Biodiversity

Strengthening the facilities and technical support focused on training and building capacity of staff to meet professional requirements on biodiversity conservation and biosafety management;	Organize training courses on biodiversity conservation and development, and biosafety management for ministries, sectors, provinces, socio-political organizations, and non-governmental organizations. The scientific and technology research activities from 2005-2010 were mainly in the framework of the environment mission (Ministry of Natural Resources and Environmental Management), and the research program (Ministry of Science and Technology Management) was strongly implemented, focusing on the important issues of the baseline survey and conservation. Many trials have been successful and are being institutionalized into policies to apply across the country, such as payment mechanisms for forest environmental services, and the development of biodiversity corridors. The survey results and species studies have discovered and described hundreds of new species for Vietnam and for science.	Limited resources for conservation; Failure to develop priority programs and projects.
Communication and education to raise public awareness about conservation, development and sustainable use of biodiversity; strive for more than 50% of the population to be able to regularly access information on biodiversity and biosafety, and consulted in giving certification on biosafety;	Multiple issues on biodiversity conservation and biosafety have been mainstreamed in the activities of environmental protection at the national and local levels, such as biodiversity research; Many communication materials that disseminate knowledge and raise awareness on biosafety have been developed and disseminated to management officials, public servants, and the public in the provinces;	Mainstreaming biodiversity conservation into other sectors is still limited.

	The media andcentral and local level communication agencies have actively broadcast information on environmental protection and the conservation and development of biodiversity in order to raise public awareness and the sense of responsibility.	
Ensure 100% genetically modified organisms and their products and goods which are placed on the market have passed risk assessments in Vietnam, and that they are tagged, monitored and supervised as prescribed by law	On November 3, 2014, the Ministry of Natural Resources and Environment issued Decision No. 2485 and 2486/QD-BTNMT certifying the biosafety of genetically modified maize GA21 (Syngenta Vietnam Co. Ltd.) and NK603 (Dekalb Vietnam company Limited). In March 2014, the Ministry of Agriculture and Rural Development officially recognized three genetically modified maize varieties NK66 Bt; NK66 NK66 GT and Bt/Gt of Syngenta, and allowed commercial production of these in Vietnam.	

Appendix 3:

RELEVANCE BETWEEN THE NBSAP AND AICHI BIODIVERSITY TARGETS

Targets, Tasks and Solutions of the NBSAP	Aichi Targets
I. Targets	
1) To improve the quality and increase the area of protected ecosystems, ensuring that the area of terrestrial protected areas accounts for 9% of the total territorial area; marine protected areas account for 0.24% of the sea area, forest coverage reaches 45%,and primary forest remains at 0.57 million hectares, coupled with effective protection plans; mangrove forests, seagrass beds, and coral reefs are maintained at the current levels; 15% of degraded critical ecosystems are restored; the number of internationally recognized protected areas are increased to 10 Ramsar wetlands, 10 Biosphere Reserves, and 10 ASEAN Heritage Parks.	B, C, D
2) To improve the quality and populations of endangered, rare and precious species, ensuring that no new case of species extinction is reported, and significantly improve the status of endangered, rare and threatened species	B, C, D
3) To compile an inventory, and to store and conserve native, endangered, rare and precious genetic resources (including animals, plants and microorganisms) to ensure that they are not impaired or eroded.	B, C, D
II. Tasks	
1) Conservation of natural ecosystems	B5; B10, C11, C12; D14,15

a) Consolidate and complete the system of natural protected areas: - Identify critical ecosystems and prepare plans for expanding the system of protected areas; continue to implement the plan to establish marine and wetland protected areas; establish biodiversity corridors connecting natural habitats of endangered, rare, and precious species prioritized for protection; - Conduct a comprehensive review of biodiversity–related provisions in the current legal documents, and make proposals for amendments, revisions, and adjustments to ensure consistency; conduct research on institutional structures to propose a model for one single management authority for protected areas, highlighting the involvement of and benefits to the communities living in the buffer zones; - Improve the management system for protected areas, ensuring they are all established with a Management Board; review and improve the functions, tasks, and organizational activities and take measures to enhance the capacity of Management Boards; implement policies creating incentives for staffs working at protected areas; upgrade necessary infrastructure to support managerial activities; provide field equipment for all protected areas, including biodiversity monitoring and reporting systems; - Develop and improve regulations on the decentralization, ranking and classification of protected areas, and the procedure for establishing new protected areas; prepare and implement management and financial plans, monitoring and regulations for the management of natural protected areas, with the target to have these in place for all protected areas by 2015; - Conduct investigations and assess the values and ecosystem services of natural protected areas; - Develop long-term plans for investment in the buffer zones of protected areas and implement a sustainable economic development model for households in these zones.	B5, C11, C12, D14, D15

b) Conservation of ecosystems of national and international significance: - Investigate, review and map ecological regions, identifying areas of high biodiversity value, degraded areas, and sensitive areas; - Conduct research, collect statistical data to assess the situation, and develop a data bank and maps of natural wetlands, seagrass beds, coral reefs and other typical natural ecosystems; - Strengthen protection activities in primary forests, and take measures to prevent deforestation and illegal logging in natural forests, special-use forests, and protection forests; - Continue to implement forest regeneration and afforestation programs, take measures to enrich forests with native plants, and promote the active prevention of forest fires and increase fire response capacity for all forest levels; - Continue to implement the targets and tasks in the mangrove forest restoration program under Decision 405/TTg-KTN dated 16 March 2009; - Prepare and implement the national plan for conservation and sustainable use of wetlands with priority given to critical river basins; - Implement measures to protect and restore coral reefs and sea grass ecosystems of appropriate scale and scope; - Prepare and implement a plan to nominate protected areas for international recognition, including wetlands of international importance, Biosphere Reserves, and ASEAN Heritage Parks. Develop and issue guidelines for the management of internationally recognized protected areas; and implement policies to support capacity building for effective management of these areas.	B5, B10, C11, D14, D15
2) Conservation of wild and domestic endangered, rare and precious species of plants and animals	C12,13

a) Prevent the decline of threatened wildlife species, particularly endangered, rare and precious species prioritized for protection: - Continue to effectively implement the targets and tasks of the program to protect rare and precious aquatic species at risk of extinction to 2015, with a vision to 2020, attached to Decision 485/QD-TTg dated 2 May 2008 of the Prime Minister; - Investigate, monitor, periodically update and publish the list of endangered, rare and precious species prioritized for protection; - Implement conservation programs for endangered, rare and precious wild species prioritized for protection, with special priority given to endangered large mammals: elephants, tigers, saola and primates; - Investigate and assess the status of endangered, rare and precious fauna and flora; periodically update, compile, and publish the Vietnam Red Book.	C12
b) Conservation of rare and precious species of native agricultural crops, livestock, and their wild relatives: - Take measures to conserve agricultural crop varieties, livestock and their wild relatives; increase the number of samples of crop varieties that are stored and preserved in gene banks; - Review, assess, and improve the effectiveness of the program for on-farm conservation of rare and precious crop varieties and livestock breeds; - Continue to implement the national ex-situ and in-situ gene bank conservation program, for in-situ and ex-situ conservation of rare and precious plant varieties, livestock and microorganisms.	C13

c) Develop, consolidate and enhance the effectiveness of biodiversity conservation facilities: - Assess the current status of ex-situ conservation facilities (zoos, botanic gardens, wildlife captive breeding facilities, medicinal plant gardens, gene banks, animal rescue centers); take measures to improve the effectiveness of ex-situ conservation; - Accelerate the construction of the Vietnam Natural Museum in accordance with the Decision 86/QD-TTg dated 20 April 2006 of the Prime Minister; - Establish a network of rescue centers across the country to ensure the needs of rescued wildlife species by region and category; prioritize investment in upgrading established rescue centers; - Upgrade the Center of Plant Genetic Resources to become a National Plant Gene Bank that meets international standards.	C12, C13
3) Sustainable use, fair and equitable access, and sharing of benefits derived from ecosystems and biodiversity	A3, A4, B7, C11, C12, C13, D14,16
a) Sustainable use of ecosystems: - Conduct research, develop guidelines and pilot the economic valuation of biodiversity and ecosystem services; - Improve the policies and institutions to implement payments for the environmental services of forests at a national scale; pilot a policy for payments for environmental services applicable to marine ecosystems and wetlands; - Replicate a model for the management of protected areas involving community participation, and implement mechanisms to share benefits in an equitable way amongst involved parties; - Develop and enforce the regulations on ecological tourism in Vietnam; - Develop and implement policies to support production of agricultural, forestry, and fisheries products that meet international standards for the conservation and sustainable use of biological resources.	A3, A4, B7, C11, D14, D16, E18

b) Sustainable use of species and genetic resources: - Investigate, record and take measures to protect and develop valuable non-timber forest products (NTFP), especially medicinal and ornamental plants; effectively control the unconstrained exploitation and cross-border trafficking of wild species; - Promulgate policies and guidelines on breeding, farming and trading of common wild species;	B7, C12, C13
c) Establish a mechanism for conservation, access and benefit sharing of genetic resources: - Conduct research and develop regulations guiding a mechanism for access to and benefit sharing of genetic resources; pilot models for access and benefit sharing focusing on the interests of communities; - Collect, document, and develop a geographic directory, and take measures to conserve traditional knowledge of genetic resources; - Develop and implement the action plan for capacity building to implement the Nagoya Protocol project.	D16, E18
4) Control activities that have a negative impact on biodiversity	A2, A3, A4; B6,7,8,9, C12
a) Control activities considered unsustainable or causing environmental pollution such as conversion of land and water surface area use and agricultural practices: - Control the conversion of natural forest land use and water surface area with conservation value, to minimize negative impacts on biodiversity; - Limit over-exploitation and changes to fishing, harvesting, and breeding practices of agricultural, forestry, and fisheries products; - Take measures to control environmental pollution with adverse impacts on biodiversity.	A2, A3, A4, B6, B7, B8

b) Control illegal hunting, trade and consumption of wild fauna and flora: - Encourage the broad participation of communities and mass media in the detection and prevention of illegal acts of exploitation, trafficking and consumption of wildlife; - Improve and implement inter-sectoral coordination mechanisms between the environmental police, market management, customs, rangers, and fisheries authorities in the detection and enforcement of illegal exploitation, trafficking, and consumption of wildlife; - Advocate and conduct awareness program to prevent the use and consumption of wildlife products nationwide; - Strengthen cooperation with regional and international law enforcement networks (ASEAN WEN, Interpol) in trafficking and illegal transportation of wild plants and animals.	A1, A4, C12
c) Control, halt and prevent damage caused by invasive alien species; enhance biosafety management of genetically modified organisms: - Investigate the status of invasive and potentially invasive alien species on a national scale, with particular emphasis on protected areas, agricultural areas, and forest ecosystems; - Implementation of the project to prevent and control invasive alien species to 2020, under Decision 1896/QD-TTg dated 17 December 2012 of the Prime Minister; - Enhance cooperation, exchange, and learning from experience on the biosafety management of genetically modified organisms, to improve technical and professional expertise of biosafety management agencies and units at all levels; - Increase investment in infrastructure and resources for implementation of measures to monitor and control the risks of genetically modified organisms to the environment and biodiversity; develop and promulgate legal documents on redress and liability in biosafety management activities of GMOs.	B9

5) Biodiversity conservation in the context of climate change	B10, C11, D15
a) Identify climate change impacts on biodiversity and promote biodiversity conservation as a means to actively respond to climate change: - Conduct research to assess and predict impacts of climate change on biodiversity of Vietnam; - Conduct research on the role of biodiversity in migitation of and adaptation to climate change in vulnerable areas such as river basins, coastal areas of the Red River Delta and Mekong River Delta; take measures to increase resilience ability of biodiversity in these regions.	B10
b) Develop biodiversity corridors to increase connectivity between forest ecosystems and critical biodiversity areas to adapt to climate change: - Develop policies for the management of biodiversity corridors, defining management objectives, the use of land in biodiversity corridors, and their connection to the development of land use planning at the local level; - Establish biodiversity corridors connecting protected areas, and prioritize implementation of pilot projects in the northern mountainous areas, central and western highland regions;	C11

c) Implement forest regeneration programs using methods and approaches such as biodiversity conservation, enhance carbon storage, and climate change adaptation and mitigation: - Integrate biodiversity conservation targets into the implementation of the national action program on "Reducing greenhouse gas emissions through efforts to limit deforestation and forest degradation, sustainable management of forest resources, and conserving and enhancing forest carbon stocks" period 2011-2020 (REDD+) approved by the Prime Minister under Decision 799/QD-TTg, dated 27 June 2012; - Map areas of high biodiversity value in the REDD + program; promote the use of native species for forest enrichment and restoration in the framework of REDD+; - Reduce risks to biodiversity from implementation of the REDD+ program through the application of stringent social and environmental security mechanisms.	C11, D15
III. Solutions	
1) Change behavior and awareness of state management organizations and communities towards biodiversity conservation and sustainable use	A1,2,3,4
- *Increase awareness of the agency responsible for biodiversity management; diversification of resources and mechanisms to share information with appropriate authorities at all levels;*	A1
- *Promote information, education, and communication regularly and extensively to all organizations, individuals and communities about the importance of conservation and sustainable use of biodiversity; enhance the social responsibility of the business sector in conservation and sustainable use of biodiversity;*	A1, A4
- *Integrate biodiversity conservation content into teaching curricula, and especially extracurricular programs, for appropriate education grades;*	A1, A2
- *Promote and honor organizations and individuals that are outstanding role models for the conservation and sustainable use of biodiversity;*	A3
- *Develop and implement a forum on conservation and sustainable use of biodiversity in the mass media.*	A1

2) Improve the legislative and institutional system and strengthen the capacity of law enforcement for the implementation of legal acts on biodiversity:	A4; E17, E19
- *Amend, supplement and timely promulgate legal documents on biodiversity to ensure consistency and efficiency;*	A4, E17
- *Strengthen the biodiversity management system; develop and implement coordinating mechanisms between biodiversity management authorities;*	A4
- *Improve the capacity for law enforcement services of biodiversity conservation staff from the central to local levels; diversify resources and training methods for staff in biodiversity conservation at all levels;*	A4
- *Conduct research to establish a biodiversity monitoring network; implement biodiversity monitoring at protected areas; set up databases and establish a mechanism for reporting and information sharing between central authorities and protected areas;*	A2, E19
3) Strengthen the integration of biodiversity conservation in policy development	A2; A4
- *Develop criteria and guidelines for integrating biodiversity conservation into the strategies, master plans and planning at national, sectoral and local levels;*	A2
- *Improve the quality of assessments of biodiversity-related requirements during environmental impact assessments for the strategic planning and development of projects.*	A2, A4
4) Promote scientific research, development and the application of modern technology in conservation and sustainable use of biodiversity	A4, D16, E19
- *Promote scientific research on the conservation and sustainable use of biodiversity; focus research and development on the application of models for breeding and re-introduction of wild species into nature, the sustainable use of species and genetic resources, and efficient eco-tourism activities;*	E19
- *Develop, acquire and transfer new technology that uses sustainable exploitation measures for natural resources and biodiversity;*	A4, E19

- *Participate in the World Bank's program to develop an inventory and pricing system for ecosystem services, and promote the accounting of national natural resources;*	E19
- *Enhance bioprospecting studies to detect genetic material and derivatives that have valuable applications for economic and social development.*	D16
5) Increase financial resources for biodiversity conservation	E20
- *The State shall ensure resources and budgets in accordance with the delegated level to implement activities of the Strategy;*	E20
- *Encourage and mobilize community participation and business-sector investment in biodiversity conservation; conduct research on the establishment of a biodiversity conservation fund; develop mechanisms to diversify investment sources for biodiversity conservation, particularly payments for environmental services, biodiversity offsets, and other financial mechanisms through carbon markets and private sector investment.*	E20
- *Strengthen the support of foreign organizations and individuals in biodiversity conservation activities.*	E20
6) Promote integration and international cooperation in the conservation and sustainable use of biodiversity:	E17, E20
- *Actively participate in and effectively implement international treaties related to conservation and sustainable use of biodiversity;*	E17
- *Promote and attract foreign resources for the conservation and sustainable use of biodiversity;*	E20
- *Strengthen learning and exchange of resources and experiences with other countries and international organizations.*	E17

Appendix 4:

LIST OF PROTECTED AREAS, BIODIVERSITY FACILITIES AND BIODIVERSITY CORRIDORS

4.1. LIST OF PROTECTED AREAS *(issued together with Decision 1107/QD-BTNMT dated May 12, 2015 of the Minister of Natural Resource and Environment promulgating the List of Protected Areas under Law on Biodiversity)*

No.	Protected Area	Province	Region	Area (ha)	Established before or after Law on biodiversity come to effective		Level of biodiversity protection	Management Level	Note
					Before	After			
I	***NATIONAL PARK (NP)***								
1	Ba Be	Bac Kan	NE	10,048	X		National	Provincial PC	Forwarded to NP
2	Bai Tu Long	Quang Ninh	NE	15,783	X		National	Provincial PC	Forwarded to NP
3	Cat Ba	Haiphong	NE	16,196.8	X		National	Provincial PC	Forwarded to NP
4	Tam Dao	Vinh Phuc	NE	15,270.7	X		National	Central	Forwarded to NP Total area: 29,515.03 ha
		Thai Nguyen	NE	11,446.6					
		Tuyen Quang	NE	6,160					
5	Xuan Son	Phu-Tho	NE	15,048	X		National	Provincial PC	Forwarded to NP

6	Phia Den - Phia Oac	Cao Bang	NE	12,261	X (established as NR)	Not estsablished as NP	National	Provincial PC	Transfer from Natural Reserves (NR) to NP
7	Hoang Lien	Lao Cai	NW	20,910.75	X		National	Provincial PC	Forwarded to NP Total area: 28,000.1 ha
		Lai Chau	NW	7,598.25					
8	Bavi	Hanoi Hoa Binh	RRD NW	6.486,4 4.263,3	X		National	Central	Forwarded to NP Total area: 10,749.7ha
9	Cuc Phuong	Ninh Binh	RRD	11,440	X		National	Central	Forwarded to NP Total area: 22,408.3ha
		Thanh Hoa	NC	4,996.3					
		Hoa Binh	NW	5,972.5					
10	Nam Dinh	RRD	7,100	7.100	X		National	Provincial PC	Forwarded to NP
11	Bach Ma	Thua Thien Hue	NC	34,380	X		National	Central	Forwarded to NP Total area: 37,487 ha
		Quang Nam	SC	3,107					
12	Ben En	Thanh Hoa	NC	14,734	X		National	Provincial PC	Forwarded to NP
13	Phong Nha Ke Bang	Quang Binh	NC	123,326	X		National	Provincial PC	Forwarded to NP
14	Pu Mat	Nghe An	NC	93,524.7	X		National	Provincial PC	Forwarded to NP
15	Vu Quang	Ha Tinh	NC	52,741	X		National	Provincial PC	Forwarded to NP
16	Nui Chua	Ninh Thuan	SC	29,865	X		National	Provincial PC	Forwarded to NP
17	Phuoc Binh	Ninh Thuan	SC	19,814	X		National	Provincial PC	Forwarded to NP
18	Con Dao	Ba Ria Vung Tau	SE	19,990	X		National	Provincial PC	Forwarded to NP
19	Bui Gia Map	Binh Phuoc	SE	25,926	X		National	Provincial PC	Forwarded to NP
20	Lo Go Sa Mat	Tay Ninh	SE	19,156	X		National	Provincial PC	Forwarded to NP

21	Cat Tien	Dong Nai	SE	39,627	X		National	Central	Forwarded to NP Total area: 71,350 ha
		Binh Phuoc	SE	4,193					
		Lam Dong	HL	27,530					
22	Chu Mom Ray	Kon Tum	HL	56,434	X		National	Provincial PC	Forwarded to NP
23	Kon Ka Kinh	Gia Lai	HL	42,057.3	X		National	Provincial PC	Forwarded to NP
24	Yok Don	Dak Lak Gia Lai	HL	113,853.95	X		National	Provincial PC	Forwarded to NP
25	Chu Yang Sin	Dak Lak	HL	66,980.2	X		National	Provincial PC	Forwarded to NP
26	Bidoup-Nui Ba	Lam Dong	HL	64,366	X		National	Provincial PC	Forwarded to NP
27	Ca Mau Cape	Ca Mau	MRD	41,862	X		National	Provincial PC	Forwarded to NP
28	U Minh Ha	Ca Mau	MRD	8,528	X		National	Provincial PC	Forwarded to NP
29	Phu Quoc	Kien Giang	MRD	29,135.9	X		National	Provincial PC	Forwarded to NP
30	Tram Chim	Dong Thap	MRD	7,313	X		National	Provincial PC	Forwarded to NP
31	U Minh Thuong	Kien Giang	MRD	8,038	X		National	Provincial PC	Forwarded to NP
II	***NATURAL RESERVES (NR)***								
1	Muong Nhe	Dien Bien	NW	45,581	X		National	Provincial PC	Meeting NR standard Forwarded to NR
2	Hang Kia - Pa Co	Hoa Binh	NW	5,257.77	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
3	Ngoc Son - Ngo Luong	Hoa Binh	NW	15,890.63	X		National	Provincial PC	Meeting NR standard Forwarded to NR
4	Phu Canh	Hoa Binh	NW	5,647	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
5	Thuong Tien	Hoa Binh	NW	5,872.99	X		National	Provincial PC	Meeting NR standard Forwarded to NR
6	Muong Te	Lai Chau	NW	33,775	X		National	Provincial PC	Meeting NR standard Forwarded to NR

7	Van Ban	Lao Cai	NW	25,173	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
8	Copia	Son La	NW	6,311	X		National	Provincial PC	Meeting NR standard Forwarded to NR
9	Sop Cop	Son La	NW	18,020	X		National	Provincial PC	Meeting NR standard Forwarded to NR
10	Ta Xua	Son La	NW	16,553	X		National	Provincial PC	Meeting NR standard Forwarded to NR
11	Xuan Nha	Son La	NW	18,116	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
12	Na Hau	Yen Bai	NW	16,950	X		National	Provincial PC	Meeting NR standard Forwarded to NR
13	Tay Yen Tu	Bac Giang	NE	12,172.22	X		National	Provincial PC	Meeting NR standard Forwarded to NR
14	Kim Hy	Bac Kan	NE	14,772	X		National	Provincial PC	Meeting NR standard Forwarded to NR
15	Bat Dai Son	Ha Giang	NE	4,531.2	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
16	Bac Me	Ha Giang	NE	9,042.5	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
17	Du Gia	Ha Giang	NE	11,540.1	X		National	Provincial PC	Meeting NR standard Forwarded to NR
18	Phong Quang	Ha Giang	NE	8,445.6	X		National	Provincial PC	Meeting NR standard Forwarded to NR
19	Tay Con Linh	Ha Giang	NE	15,043	X		National	Provincial PC	Meeting NR standard Forwarded to NR
20	Huu Lien	Lang Son	NE	8,293	X		National	Provincial PC	Meeting NR standard Forwarded to NR
21	Dong Son Ky Thuong	Quang Ninh	NE	15,110.3	X		National	Provincial PC	Meeting NR standard Forwarded to NR
22	Than Sa - Phuong Hoang	Thai Nguyen	NE	17,639	X		National	Provincial PC	Meeting NR standard Forwarded to NR

23	Cham Chu	Tuyen Quang	NE	15,902.1	X		National	Provincial PC	Meeting NR standard Forwarded to NR
24	Na Hang	Tuyen Quang	NE	22,401.5			Provincial	Provincial PC	Meeting NR standard Forwarded to NR
25	Bach Long Vi	Haiphong	RRD	27,008.9		X	National	Provincial PC	Meeting NR standard Forwarded to NR
26	Van Long	Ninh Binh	RRD	2,736	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
27	Tien Hai	Thai Binh		12.500	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
RRD	12,500	Thanh Hoá	BTB	23.028,2	X		National	Provincial PC	Meeting NR standard Forwarded to NR
28	Pu Hu	Thanh Hoa	NC	23,028.2	X		National	Provincial PC	Meeting NR standard Forwarded to NR
29	Pu Luong	Thanh Hoa	NC	17,171.53	X		National	Provincial PC	Meeting NR standard Forwarded to NR
30	Xuan Lien	Thanh Hoa	NC	23,815.5	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
31	Pu Hoat	Nghe An	NC	35,723	X		National	Provincial PC	Meeting NR standard Forwarded to NR
32	Pu Huong	Nghe An	NC	40,186.5	X		National	Provincial PC	Meeting NR standard Forwarded to NR
33	Ke Go	Ha Tinh	NC	21,759	X		National	Provincial PC	Meeting NR standard Forwarded to NR
34	Bac Huong Hoa	Quang Tri	NC	23,456	X		National	Provincial PC	Meeting NR standard Forwarded to NR
35	Dakrong	Quang Tri	NC	40,526		X	National	Provincial PC	Meeting NR standard Forwarded to NR
36	Con Co	Quang Tri	NC	4,532	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
37	Phong Dien	Thua Thien Hue	NC	41,508.7	X		National	Provincial PC	Meeting NR standard Forwarded to NR

38	An Toan	Binh Dinh	SC	22,545	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
39	Nui Ong	Binh Thuan	SC	23,834	X		National	Provincial PC	Meeting NR standard Forwarded to NR
40	Ta Kou	Binh Thuan	SC	8,047		X	National	Provincial PC	Meeting NR standard Forwarded to NR
41	Hon Cau	Binh Thuan	SC	12,500	X		National	Provincial PC	Meeting NR standard Forwarded to NR
42	Hon Ba	Khanh Hoa	SC	19,285.83		X	National	Provincial PC	Meeting NR standard Forwarded to NR
43	Nha Trang Bay	Khanh Hoa	SC	15,000	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
44	Krong Trai	Phu Yen	SC	13,775	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
45	Son Tra Peninsula	Da Nang	SC	3,871	X		National	Provincial PC	Meeting NR standard Forwarded to NR
46	Ba Na - Nui Chua	Da Nang	SC	27,980.76	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
47	Ba Na - Nui Chua	Quang Nam	SC	2,753	X	Chưa được thành lập là khu DTTN	Provincial	Provincial PC	Meeting NR standard Forwarded to NR
48	Cu Lao Cham	Quang Nam	SC	8,265	X		National	Provincial PC	Meeting NR standard Forwarded to NR
49	Song Thanh	Quang Nam	SC	75,274	X		National	Provincial PC	Meeting NR standard Forwarded to NR
50	Ngoc Linh	Quang Nam	SC	17,576	X		National	Provincial PC	Meeting NR standard Forwarded to NR
51	Ngoc Linh	Kon Tum	HL	38,109.4	X		National	Provincial PC	Meeting NR standard Forwarded to NR
52	Ea So	Dak Lak	HL	24,017	X		National	Provincial PC	Meeting NR standard Total area (under provinical planning) is 26,848.2ha Forwarded to NR

53	Nam Ca	Dak Lak		21,912.3	X		National	Provincial PC	Meeting NR standard Total area (under provinical planning) is 20,469.3ha Forwarded to NR
54	Nam Nung	Dak Nong	HL	12,307.8	X				Meeting NR standard Forwarded to NR
55	Ta Dung	Dak Nong	HL	17,915.2	X		National	Provincial PC	Meeting NR standard Forwarded to NR
56	Kon Chu Rang	Gia Lai	HL	15,446	X		National	Provincial PC	Meeting NR standard Forwarded to NR
57	Binh Chau Buu – Phuoc Buu	Ba Ria – Vung Tau	SE	10,905	X		National	Provincial PC	Meeting NR standard Forwarded to NR
58	Vinh Cuu	Dong Nai	SE	53,850.3	X		National	Provincial PC	Meeting NR standard Forwarded to NR
59	Ap Canh Dien	Bac Lieu	MRD	363	X		Provincial	Provincial PC	Meeting NR standard Forwarded to NR
60	Hon Chong	Kien Giang	MRD	964.7	X		National	Provincial PC	Meeting NR standard Forwarded to NR
61	Lang Sen	Long An	MRD	5,030	X		National	Provincial PC	Meeting NR standard Forwarded to NR
62	Thanh Phu	Ben tre	MRD	2,584	X		National	Provincial PC	Meeting NR standard Forwarded to NR
63	Long Khanh	Tra Vinh	MRD	868.1		X	Provincial	Provincial PC	Meeting NR standard Forwarded to NR
64	Lung Ngoc Hoang	Hau Giang	MRD	2,805.37	X (established as a species habitat Management Area)	Not established as a Natural Reserves	National	Provincial PC	Propose to upgrade from species habitat Management Area into Natural Reserves

III	***SPECIES – HABITAT MANAGEMENT AREA (SHMA)***								
1	Che Tao	Yen Bai	NW	20,108.2	X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
2	Khau Ca	Ha Giang	NE	2,010.4	X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
3	Nam Xuan Lac	Bac Kan	NE	1,788	X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
4	Trung Khanh	Cao Bang	NE	9,573.68	X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
5	Sen Tam Quy	Thanh Hoa	NC	519		X	Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
6	Huong Nguyen	Thua Thien Hue	NC	10,310.5	X		National	Provincial PC	Meeting SHMA standard Forwarded to SHMA
7	Saola Nature Reserve	Thua Thien Hue	NC	15,519.93		X	Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
8	Saola Nature Reserve	Quang Nam	SC	15,822		X	National	Provincial PC	Meeting SHMA standard Forwarded to SHMA
9	Dak Uy	Kon Tum	HL	659.5	X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
10	Ea Ral	Dak Lak	HL	49	X		Provincial	Provincial PC	Meeting SHMA standard Under provincial planning, the area as 59.6 ha (including Ea Ral, Trap Kso and Cư Né) Forwarded to SHMA
11	Trap Kso	Dak Lak	HL	100	X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
12	San Chim Dam Doi	Ca Mau	MRD	130	X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
13	Bac Lieu bird garden	Bac Lieu	MRD	126.7	X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
14	Dong Thap Muoi Ecological PA	Tien Giang	MRD		X		Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA

15	Phu Quoc Marine PA	Kien Giang	MRD	2,881.47		X	National	Provincial PC	Meeting SHMA standard Forwarded to SHMA
16	Hon Khoai island forest	Ca Mau	MRD	621		X	Provincial	Provincial PC	Meeting SHMA standard Forwarded to SHMA
VI	***LANDSCAPE PROTECTED AREA (LPA)***								
1	Suoi Mo Area	Bac Giang	NE	1,207		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
2	Ban Gioc	Cao Bang	NE	566	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
3	Lam Son	Cao Bang	NE	75	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
4	Nui Lang Don	Cao Bang	NE	1,149	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
5	Pac Bo	Cao Bang	NE	1,137	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
6	Thang Hen	Cao Bang	NE	372	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
7	Tran Hung Dao	Cao Bang	NE	1,143	X		National	Provincial PC	Meeting LPA standard Forwarded to LPA
8	Muong Phang	Dien Bien	NW	10,048.81	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
9	Hung Temple	Phu Tho	NE	538	X		National	Provincial PC	Meeting LPA standard Forwarded to LPA
10	Nui Na	Phu Tho	NE	670	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
11	Yen Lap	Phu Tho	NE	330	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
12	Yen Tu	Quang Ninh	NE	2,783	X		National	Provincial PC	Meeting LPA standard Forwarded to LPA
13	ATK Dinh Hoa	Thai Nguyen	NE	8,758	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
14	Da Ban	Tuyen Quang	NE	119.6	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA

15	Kim Binh	Tuyen Quang	NE	210.8	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
16	Tan Trao	Tuyen Quang	NE	4,187.3	X		National	Provincial PC	Meeting LPA standard Forwarded to LPA
17	Chua Thay	Ha Noi	RRD	17	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
18	Huong Son	Ha Noi	RRD	3.760	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
19	K9 - Ho Chi Minh Mausoleum	Ha Noi	RRD	234	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
20	Vat Lai	Ha Noi	RRD	10	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
21	Dong Mo - Ngai Son	Ha Noi	RRD	900		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
22	Soc Son	Ha Noi	RRD	12		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
23	Ho Suoi Hai	Ha Noi	RRD	1.200		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
24	Con Son Kiep Bac	Hai Duong	RRD	1.216,9	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
25	Jingmen	Hai Duong	RRD	323,4		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
26	Do Son	Haiphong	RRD	228		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
27	Hoa Lu	Ninh Binh	RRD	2.985	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
28	Den Ba Trieu	Thanh Hoa	NC	434		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
29	Ham Rong	Thanh Hoa	NC	216		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
30	Lam Kinh	Thanh Hoa	NC	170		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA

31	Nui Chung	Nghe An	NC	628,3	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
32	Than Dinh Mountain (Chua Non)	Quang Binh	NC	136	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
33	Ru Linh	Quang Tri	NC	270	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
34	Ho Chi Minh road	Quang Tri	NC	5.680	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
35	Nam Hai Van	Da Nang	SC	3.397,3	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
36	Nui Ba	Binh Dinh	SC	2.384	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
37	Vuon Cam Nguyen Hue garden	Binh Dinh	SC	752	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
38	Quy Hoa Ghenh Rang	Binh Dinh	SC	2.163	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
39	Deo Ca -Hon Nua Pass	Phu Yen	SC	5.784	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
40	Nui Thanh	Quang Nam	SC	111		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
41	My Son	Quang Nam	SC	1.081		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
42	Nam Tra My	Quang Nam	SC	49		X	Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
43	Dray Sap-Gia Long	Dak Nong	HL	1.515,2	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
44	Ho Lak	Dak Lak	HL	10.284,3	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
45	Can cu Dong Rum	Tay Ninh	SE	32	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
46	Can cu Chau Thanh	Tay Ninh	SE	190	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA

47	Chang Riec	Tay Ninh	SE	10.711	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
48	Nui Ba Den Mountain	Tay Ninh	SE	1.761	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
49	Nui Ba Ra	Binh Phuoc	SE	1.056	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
50	Nui Sam	An Giang	MRD	171	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
51	Thoai Son	An Giang	MRD	370,5	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
52	Tra Su	An Giang	MRD	1.050	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
53	Tuc Dup	An Giang	MRD	200	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
54	Xeo Quyt	Dong Thap	MRD	61.28	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA
55	Go Thap	Dong Thap	MRD	289,8	X		Provincial	Provincial PC	Meeting LPA standard Forwarded to LPA

Legend:

PA	Protected Area;
BD	Biodiversity;
PC	People's Commitee;
NP	National Park;
NR	Natural Reserve;
SHMA	Species-Habitat Management Area
LPA	Landscape Protected Area;

NE	NorthEast
NW	Northwest
RRD	Red River Delta
NC	North Central
SC	South Central
HL	THighland
SE	South East
MRD	Mekong River Delta

4.2. LIST OF PROTECTED AREAS

(issued together with Decision 45/QD-TTg dated January4, 2014 of the Prime Minister approving the National Biodiversity Conservation Master Plan to 2020, vision to 2030)

No.	Name	Province	Planning area (ha)	Category	Type	Management level	Planning period	Note
North-Eastern region								
1.	ATK Dinh Hoa	Thai Nguyen	8,728	Landscape protection area	Terrestrial	Provincial	2020	Forwarded
2.	Ba Be	Bac Can	10,048	National Park	Terrestrial	Provincial	2020	Forwarded
3.	Bac Me	Ha Giang	9,042.5	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
4.	Bai Tu Long	Quang Ninh	15,600	National Park	Terrestrial	Provincial	2020	Forwarded
5.	Ban Gioc	Cao Bang	566	Landscape protection	Terrestrial	Provincial	2020	Forwarded
6.	Bat Dai Son	Ha Giang	4,531.2	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
7.	Cat Ba	Hai Phong	15,331.6	National Park	Terrestrial	Provincial	2020	Forwarded
8.	Cham Chu	Tuyen Quang	15,902.1	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
9.	Co To	Quang Ninh	7,850	National Park	Marine	Provincial	2020	Newly established
10.	Da Ban	Tuyen Quang	119.6	Landscape protection	Terrestrial	Provincial	2020	Forwarded
11	Tran Island	Quang Ninh	4,200	Landscape protection	Marine	Provincial	2020	Newly established
12	Hung Temple	Phu Tho	538	Landscape protection	Terrestrial	Provincial	2020	Forwarded
13	Dong Son – Ky Thuong	Quang Ninh	14,851	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
14	Du Gia	Ha Giang	11,540.1	Nature Reserve	Terrestrial	Provincial	2020	Forwadred
15	Huu Lien	Lang Son	8,293	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
16	Khau Ca	Ha Giang	2,010.4	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded

17.	Khuon Ha – Thuong Lam	Tuyen Quang	19,220	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Newly established
18.	Quan Ba	Ha Giang	5,000	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Newly established
19.	Chi San	Ha Giang	5,300	Species and Habitat Conservation Area	Terrestrial	Provincial	2030	Newly established
20	The intersecting region of three rivers Da – Lo - Thao	Phu Tho – Vinh Phuc – Hanoi	24.000	Species and Habitat Conservation Area	Wetland	Central	2020	Newly established
21	Kim Binh	Tuyen Quang	210,8	Landscape protection	Terrestrial	Provincial	2020	Forwarded
22.	Kim Hy	Bac Kan	14,772	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
23.	Lam Son	Cao Bang	75	Landscape protection	Terrestrial	Provincial	2020	Forwarded
24.	Na Hang	Tuyen Quang	22,401.5	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
25	Nam Xuan Lac	Bac Kan	1,788	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
26	Lang Don Mountain	Cao Bang	1,149	Landscape protection	Terrestrial	Provincial	2020	Forwarded
27.	Na mountain	Phu Tho	670	Landscape protection	Terrestrial	Provincial	2020	Forwarded
28.	Pia Oac mountain	Cao Bang	12,261	National Park	Terrestrial	Provincial	2020	Forwarded
29	Pac Bo	Cao Bang	1,137	Landscape protection	Landscape protection	Provincial	2020	Forwarded
30	Phong Quang	Ha Giang	7,910.9	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
31	Suoi Mo	Bac Giang	1,207.1	Landscape protection	Terrestrial	Provincial	2020	Forwarded
32	Tam Dao	Tuyen Quang Vinh Phu, Thai Nguyen, Tuyen Quang	29,515.03	National Park	Terrestrial	Provincial	2020	Forwarded

33.	Tan Trao	Tuyen Quang	4,187.3	Landscape protection	Terrestrial	Provincial	2020	Forwarded
34.	Tay Con Linh	Ha Giang	14,489.3	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
35.	Tay Yen Tu	Bac Giang	12,172.22	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
36.	Than Sa – Phuong Hoang	Thai Nguyen	17,639	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
37.	Thang Hen	Cao Bang	372	Landscape protection	Terrestrial	Provincial	2020	Forwarded
38.	Tran Hung Dao	Cao Bang	1,143	Landscape protection	Terrestrial	Provincial	2020	Forwarded
39.	Trung Khanh	Cao Bang	10,000	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
40.	The estuary region of Tien Yen river	Quang Ninh	21,000	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
41.	Xuan Son	Phu Tho	15,048	National Park	Terrestrial	Provincial	2020	Forwarded
42.	Yen Lap	Phu Tho	330	Landscape protection	Terrestrial	Provincial	2020	Forwarded
43.	Yen Tu	Quang Ninh	2,687	Landscape protection	Terrestrial	Provincial	2020	Forwarded
North-Western region								
44.	Che Tao	Yen Bai	20,108.2	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
45.	Copia	Son La	6,311	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
46.	Hang Kia – Pa Co	Hoa Binh	5,257.77	Nature Reserve	Terrestrial	Central	2020	Forwarded
47.	Hoang Lien	Lao Cai, Lai Chau	28,500.1	National park	Terrestrial	Central	2020	Forwarded
48.	Hoang Lien – Bat Xat	Lao Cai	15,000	Nature Reserve	Terrestrial	Provincial	2020	Newly established
49.	Muong La	Son La	20,000	Nature Reserve	Terrestrial	Provincial	2020	Newly established
50.	Muong Nhe	Dien Bien	44,940.30	Nature Reserve	Terrestrial	Provincial	2020	Forwarded

51.	Muong Phang	Dien Bien	935.88	Landscape protection	Terrestrial	Provincial	2020	Forwarded
52.	Muong Te	Lai Chau	33,775	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
53.	Na Hau	Yen Bai	1,699.92	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
54.	Ngoc Son – Ngo Luong	Hoa Binh	15,890.63	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
55.	Phu Canh	Hoa Binh	5,647	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
56.	Sop Cop	Son La	18,020	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
57	Ta Xua	Son La	16,553	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
58.	Thuong Tien	Hoa Binh	5,872.99	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
59.	Van Ban	Lao Cai	25,173	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
60.	Xuan Nha	Son La	18,116	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
Red River region								
61.	Ba Vi	Hanoi, Hoa Binh	10,749.7	National Park	Terrestrial	Central	2020	Forwarded
62.	Quan Sơn	Hà Nội	2,741	Nature Reserve	Wetland	Provincial	2020	Newly established
63.	Bach Long Vi	Hai Phong	20,700	Nature Reserve	Marine	Provincial	2020	Newly established
64.	Thay Temple	Hanoi	37.13	Landscape protection	Terrestrial	Provincial	2020	Forwarded
65.	Con Son Kiep Bac	Hai Duong	1,216.9	Landscape protection	Terrestrial	Provincial	2020	Forwarded
66.	The estuary of Red River	Nam Dinh – Thai Binh	40,000	Nature Reserve	Wetland	Central	2020	Newly established
67.	Thai Binh estuary	Hai Phong – Thai Binh	2,000	Nature Reserve	Wetland	Central	2020	Newly established
68.	Thai Thuy estuary	Thai Binh	13,100	Nature Reserve	Wetland	Provincial	2030	Newly established

69.	Van Uc estuary, Tien Lang district	Hai Phong	1,500	Nature Reserve	Wetland	Provincial	2030	Newly established
70.	Cuc Phuong	Ninh Binh, Thanh Hoa, Hoa Binh	22,405.9	National Park	Terrestrial	Central	2020	Forwarded
71.	Hong Mo – Ngai Son lake	Hanoi	900	Landscape protection	Wetland	Provincial	2030	Newly established
72.	Hoan Kiem Lake	Hanoi	16	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
73.	Suoi Hai Lake	Hanoi	1,200	Landscape protection	Wetland	Provincial	2030	Newly established
74.	West Lake	Hanoi	440	Landscape protection	Wetland	Provincial	2020	Newly established
75.	Hoa Lu	Ninh Binh	2,985	Landscape protection	Terrestrial	Provincial	2020	Forwarded
76.	Huong Son	Hanoi	2,719.8	Landscape protection	Terrestrial	Provincial	2020	Forwarded
77.	IC9 – President Ho Chi Minh temple	Hanoi	423	Landscape protection	Terrestrial	Provincial	2020	Forwarded
78.	Co Island	Hai Duong	31,673	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
79.	Tien Hai	Thai Binh	3,245	Nature Reserve	Wetland	Provincial	2020	Forwarded
80.	Van Long	Ninh Binh	1,973.5	Nature Reserve	Terrestrial wetland	Provincial	2020	Forwarded
81.	Vat Lai	Hanoi	11,28	Landscape protection	Terrestrial	Provincial	2020	Forwarded
82.	Xuan Thuy	Nam Dinh	7,100	National Park	Wetland	Provincial	2020	Forwarded
Northern Central region								
83.	Bac Huong Hoa	Quang Tri	23,456	Nature Reserve	Terrestrial	Provincial	2020	Forwarded

84.	Bach Ma	Thua Thien Hue, Quang Nam	37,487	National Park	Terrestrial	Central	2020	Forwarded
85.	Bau Sen	Quang Binh	200	Landscape protection	Wetland	Provincial	2030	Newly established
86.	Ben En	Thanh Hoa	12,033	National Park	Terrestrial	Provincial	2020	Forwarded
87.	Con Co	Quang Tri	4,400	Nature Reserve	Marine	Provincial	2020	Forwarded
88.	DakRong	Quang Tri	40,526	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
89.	Ho Chi Minh road	Quang Tri	5,680	Landscape protection	Terrestrial	Provincial	2020	Forwarded
90.	Hai Van – Son Cha	Thua Thien Hue – Da Nang	17,000	Nature Reserve	Marine	Provincial	2020	Newly established
91.	Ho Cam Khanh	Quang Binh	8,590	Nature reserve	Wetland	Provincial	2030	Newly established
92.	Hon Me	Thanh Hoa	6,700	Landscape protection	Marine	Provincial	2020	Newly established
93.	Huong Nguyen	Thua Thien Hue	10,310.5	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
94.	Ke Go	Ha Tinh	21,759	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
95.	Giang Man	Quang Binh, Ha Tinh	20,000	Nature Reserve	Terrestrial	Provincial	2030	Newly established
96.	Tam Quy Forest of sen (Madhuca pasquieri)	Thanh Hoa	518.5	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Newly established
97.	Sao La Protected Area	Thua Thien Hue	12,153	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
98.	Khe Net	Quang Binh	26,800	Nature Reserve	Terrestrial	Provincial	2020	Newly established
99.	Khe nuoc trong	Quang Binh	19,000	Nature Reserve	Terrestrial	Provincial	2020	Newly established

100.	Puxilaileng	Nghe An	5,000	Nature Reserve	Terrestrial	Provincial	2020	Newly established
101.	Chung mountain	Nghe An	628.3	Landscape protection	Terrestrial	Provincial	2020	Forwarded
102.	Than Dinh Moutain (Non Temple)	Quang Binh	136	Landscape protection	Terrestrial	Provincial	2020	Forwarded
103.	Pha Tam Giang – Cau Hai swamp	Thua Thien Hue	20,000	Nature Reserve	Wetland	Provincial	2020	Newly established
104.	Phong Dien	Thua Thien Hue	30,262.8	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
105.	Phong Nha Ke Bang	Quang Binh	125,362	National Park	Terrestrial	Provincial	2020	Forwarded
106.	Pu Hoat	Nghe An	35,723	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
107.	PuHu	Thanh Hoa	23,028.2	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
108.	PuHuong	Nghe An	40,127.7	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
109.	Pu Luong	Thanh Hoa	16,902.3	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
110.	Pu Mat	Nghe An	93,524.7	National park	Terrestrial	Provincial	2020	Forwarded
111.	Ru Linh	Quang Tri	270	Landscape protection	Terrestrial	Provincial	2020	Forwarded
112.	Vu Quang	Ha Tinh	52,882	National Park	Terrestrial	Provincial	2020	Forwarded
113.	Xuan Lien	Thanh Hoa	23,475	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
Southern Central region								
114.	An Toan	Binh Dinh	22,545	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
115.	Ba Na – Chua Moutain	Quang Nam	2,753	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
116.	Ba Na – Chua Mountain	Da Nang	30,206.3	Nature Reserve	Terrestrial	Provincial	2020	Forwarded

117.	Son Tra peninsula	Da Nang	3,871	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
118.	Cu Lao Cham	Quang Nam	1,490	Landscape protection	Terrestrial	Provincial	2020	Forwarded
119.	Cu Lao Cham	Quang Nam	8,265	Landscape protection	Marine	Provincial	2020	Forwarded
120.	Cu Mong swamp	Phu Yen	3,000	Nature Reserve	Wetland	Provincial	2030	Newly established
121.	Nai swamp	Ninh Thuan	700	Nature Reserve	Wetland	Provincial	2030	Newly established
122.	O Loan swamp	Phu Yen	1,570	Nature Reserve	Wetland	Provincial	2030	Newly established
123.	Thi Nai swamp	Binh Dinh	5,000	Nature Reserve	Wetland	Provincial	2030	Newly established
124.	Tra O swamp	Binh Dinh	1,600	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
125.	Tra O swamp	Binh Dinh	10,000	Landscape protection	Wetland	Provincial	2030	Newly established
126.	Deo Ca – Hon Nua	Phu Yen	5,768.2	Landscape protection	Terrestrial	Provincial	2020	Forwarded
127.	Song Hinh Lake	Phu Yen	500	Nature Reserve	Wetland	Provincial	2030	Newly established
128.	Hon Ba	Khanh Hoa	19,164.48	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
129.	Hon Cau	Binh Thuan	12,500	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
130.	Hon Heo	Khanh Hoa	7,000	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Newly established
131.	Sao La Protected Area	Quang Nam	15,822	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
132.	The eastern region of Ba To district	Quang Ngai	39,000	Nature Reserve	Terrestrial	Provincial	2020	Newly established
133.	Krong Trai	Phu Yen	13,392	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
134.	Ly Son	Quang Ngai	7925	Nature Reserve	Marine	Provincial	2020	Newly established

135.	Nam Hai Van	Da Nang	3,397.3	Landscape protection	Terrestrial	Provincial	2020	Forwarded
136.	Nam Yet	Khanh Hoa	35,000	Nature Reserve	Marine	Provincial	2020	Newly established
137.	Ngoc Linh	Quang Nam	17,576	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
138.	Ba mountain	Binh Dinh	2,384	Landscape protection	Terrestrial	Provincial	2020	Forwarded
139.	Chua mountain	Ninh Thuan	29,865	National Park	Terrestrial	Provincial	2020	Forwarded
140.	Ong mountain	Binh Thuan	23,834	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
141.	Phu Quy	Binh Thuan	18,980	Nature Reserve	Marine	Provincial	2020	Newly established
142.	Phuoc Binh	Ninh Thuan	19,814	National Park	Terrestrial	Provincial	2020	Forwarded
143.	Quy Hoa – Ghenh Rang	Binh Dinh	2,163	Landscape protection	Terrestrial	Provincial	2020	Forwarded
144.	Son Thai – Giang Ly	Khanh Hoa	10,500	Nature Reserve	Terrestrial	Provincial	2020	Newly established
145.	Thanh River	Quang Nam	79,694	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
146.	Ta Kou	Binh Thuan	8,407	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
147.	Tra Bong	Quang Ngai	1,000	Nature Reserve	Terrestrial	Provincial	2020	Newly established
148.	Nha Trang Bay	Khanh Hoa	15,000	Nature Reserve	Marine	Provincial	2020	Forwarded
149.	Nguyen Hue orange forest	Binh Dinh	752	Landscape protection	Terrestrial	Provincial	2020	Forwarded
Central Highlands								
150.	Bidoup – Ba Mountain	Lam Dong	55,968	National Park	Terrestrial	Provincial	2020	Forwarded
151.	Ho Sea	Gia Lai	600	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
152.	Chu Mon Ray	Kon Tum	56,434.2	National Park	Terrestrial	Provincial	2020	Forwarded

153.	Chu Yang Sin	Dak Lak	59,316.1	National Park	Terrestrial	Provincial	2020	Forwarded
154.	Dak Uy	Kon Tum	659.5	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
155.	Dray Sap – Gia Long	Dak Nong	1,515.2	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
156.	Ea Ral	Dak Lak	49	Species and Habitat Conservation Area	Wetland	Provincial	2020	Forwarded
157.	Ea So	Dak Lak	24,017	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
158.	Ialy Lake	Gia Lai	6,450	Nature Reserve	Wetland	Provincial	2030	Newly established
159.	Lak Lake	Dak Lak	9,478.3	Landscape protection	Wetland	Provincial	2020	Forwarded
160.	Yaun Ha Lake	Gia Lai	700	Nature Reserve	Wetland	Provincial	2030	Newly established
161.	Ayun Pa	Gia Lai	50,000	Nature Reserve	Terrestrial	Provincial	2020	Newly established
162.	Kon Chu Rang	Gia Lai	15,446	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
163.	Kon Ka Kinh	Gia Lai	39,955	National Park	Terrestrial	Provincial	2020	Forwarded
164.	Nam Ca	Dak Lak	21,912.3	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
165.	Nam Nung	Dak Nong	10,912	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
166.	Ngoc Linh	Kon Tum	38,109.4	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
167.	Sen San River – Ialy lake	Gia Lai	6,500	Species and Habitat Conservation Area	Wetland	Central	2020	Newly established
168.	Ta Dung	Dak Nong	17,915.2	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
169.	Trap Kso	Dak Lak	100	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
170.	YokDon	Dak Lak	109,196	National Park	Terrestrial	Provincial	2020	Forwarded

South-Eastern region								
171.	Binh Chau Phuoc Buy	Ba Ria – Vung Tau	10,905	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
172.	Bu Gia Map	Binh Phuoc	25,926	National Park	Terrestrial	Provincial	2020	Forwarded
173.	Chau Thanh	Tay Ninh	147	Landscape protection	Terrestrial	Provincial	2020	Forwarded
174.	Dong Rum	Tay Ninh	32	Landscape protection	Terrestrial	Provincial	2020	Forwarded
175.	Cat Tien	Dong Nai, Lam Dong, Binh Phuoc	71,457	National Park	Terrestrial	Central	2020	Forwarded
176.	Chang Riec	Tay Ninh	9,122	Landscape protection	Terrestrial	Provincial	2020	Forwarded
177.	Con Dao	Ba Ria – Vung Tau	19,991	National Park	Terrestrial	Provincial	2020	Forwarded
178.	The estuary of Dong Nai river	Ba Ria – Vung Tau	10,000	Nature Reserve	Wetland	Provincial	2020	Newly established
179.	Lo Go Ma Sat	Tay Ninh	18,345	National Park	Terrestrial	Provincial	2020	Forwarded
180.	Ba Den mountain	Tay Ninh	1,545	Landscape protection	Terrestrial	Provincial	2020	Forwarded
181.	Ba Trap mountain	Binh Phuoc	1,056	Landscape protection	Terrestrial	Provincial	2020	Forwarded
182.	Be River – Thac Mo lake	Binh Phuoc	1,000	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
183.	Dong Nai River – Tri An Lake	Dong Nai	32,300	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
184.	Sai Gon River – Dau Tieng Lake	Tay Ninh, Binh Phuoc Binh Duong	300	Species and Habitat Conservation Area	Wetland	Central	2020	Newly established
185.	Vinh Cuu	Dong Nai	53,850.3	Dự trữ thiên nhiên	Terrestrial	Provincia	2020	Forwarded

The Mekong Delta								
186.	Ap Canh Dien	Bac Lieu	363	Nature Reserve	Terrestria	Provincial	2020	Forwarded
187.	Bung Binh Thien	An Giang	500	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
188.	Tho Chu cluster of islands	Kien Giang	20,000	Nature Reserve	Marine	Provincial	2030	Newly established
189.	Dong Ho swamp	Kien Giang	1,597	Nature Reserve	Wetland	Provincial	2020	Newly established
190.	Thi Tuong swamp	Ca Mau	700	Nature Reserve	Wetland	Provincial	2020	Newly established
191.	Go Thap	Dong Thap	289.8	Landscape protection	Terrestrial	Provincial	2020	Forwarded
192.	Hon Chong	Kien Giang	964.7	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
193.	Phu Quoc Marine Protected Area	Kien Giang	2,881.47	Species and Habitat Conservation Area	Marine	Provincial	2020	Forwarded
194.	Cu Lao An Hoa coastal region	Ben Tre	10,000	Landscape protection	Wetland	Provincial	2030	Newly established
195.	The estuary of Ham Luong River	Ben Tre	10,000	Landscape protection	Wetland	Provincial	2030	Newly established
196.	Long Khanh mangrove protected are	Tra Vinh	868.1	Nature Reserve	Wetland	Provincial	2020	Forwarded
197.	Dong Thap Muoi ecosystem area	Tien Giang	623	Nature Reserve	Wetland	Provincial	2020	Newly established
198.	Ba Lai	Ben Tre	10,000	Landscape protection	Wetland	Provincial	2030	Newly established
199.	The melaleuca forest of Tri Ton district	An Giang	1,900	Species and Habitat Conservation Area	Wetland	Provincial	2020	Newly established
200.	Cu Lao Dung mangrove	Soc Trang	25,333.7	Nature Reserve	Wetland	Provincial	2020	Newly established
201.	Lang Sen	Long An	5,030	Nature Reserve	Wetland	Provincial	2020	Forwarded

202.	Lung Ngoc Hoang	Hau Giang	790.64	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
203.	The cape of Ca Mau	Ca Mau	41,089	National Park	Terrestrial	Provincial	2020	Forwarded
204.	Kien Luong limestone mountain	Kien Giang	929.1	Nature Reserve	Terrestrial	Provincial	2020	Newly established
205.	Sam mountain	An Giang	171	Landscape protection	Terrestrial	Provincial	2020	Forwarded
206.	Phu My	Kien Giang	1,106.3	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Newly established
207.	Phu Quoc	Kien Giang	29,135.9	National Park	Terrestrial	Provincial	2020	Forwarded
208.	Hon Khoai cluster of islands	Ca Mau	621	Landscape protection	Terrestrial	Provincial	2020	Forwarded
209	Tra Su cajeput forest	An Giang	850	Nature Reserve		Provincial	2020	Newly established
210.	Bird Sanctuary of Doi swamp	Ca Mau	130	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
211.	Thach Phu	Ben Tre	2,584	Nature Reserve	Terrestrial	Provincial	2020	Forwarded
212.	Thoai Son	An Giang	370.5	Landscape protection	Terrestrial	Provincial	2020	Forwarded
213.	Tra Su	An Giang	844.1	Landscape protection	Terrestrial	Provincial	2020	Forwarded
214.	Tram Chim	Dong Thap	7,313	National Park	Terrestrial	Provincial	2020	Forwarded
215.	Tuc Dup	An Giang	200	Landscape protection	Terrestrial	Provincial	2020	Forwarded
216.	U Minh Ha	Ca Mau	7,926	National Park	Terrestrial	Provincial	2020	Forwarded
217.	U Minh Thuong	Kien Giang	8,038	National Park	Terrestrial	Provincial	2020	Forwarded
218.	Bac Lieu Bird Garden	Bac Lieu	385	Species and Habitat Conservation Area	Terrestrial	Provincial	2020	Forwarded
219.	Xeo Quyt	Dong Thap	50	Landscape protection	Local	Provincial	2020	Forwarded

4.3. LIST OF BIODIVERSITY FACILITIES

(issued together with Decision 45/QD-TTg dated January 4, 2014 of the Prime Minister approving the National Biodiversity Conservation Master Plan to 2020, vision to 2030)

No.	Name	Type	Line agency	Province	Planned area (ha)	Period
			North East			
1.	Me Linh Botanic Garden	Botanic Garden	Me Linh Biodiversity Station, Institute of Ecology and Biological Resources	Vinh Phuc	170	2020
2.	Tam Dao Rescue Center	Rescue Center	Tam Dao National Park	Vinh Phuc	05	2020
3.	Tam Dao Medicine Plant Garden	Medicine Plant Garden	The Institute of Medicine	Vinh Phuc	1.5	2020
4.	Yên Tu Medicine Plant Garden	Medicine Plant Garden		Quang Ninh	270	2030
5.	An Phu Botanic Garden	Botanic Garden	Hai Duong Department of Agriculture and Rural Development	Hai Duong	20	2030
6.	Cau Hai Botanic Garden	Botanic Garden	Cau Hai Experimental Research Center	Phu Tho	700.8	2030
7.	Con Sơn Botanic Garden	Botanic Garden	Hai Duong Department of Agriculture and Rural Development	Hai Duong	35.5	2030
			North West			
8.	Hoang Lien - Sa Pa Rescue Center	Rescue Center	Hoang Lien National Park	Lao Cai	05	2020
9.	Sa Pa Medicine Plant Garden	Medicine Plant Garden	The Institute of Medicine	Lao Cai	03	2020
			Red River Delta			
10.	Livestock genetic conservation system	Gene bank	National Institute of Animal Husbandry	Hanoi and other provinces		2020

11.	National flora genetic conservation system	Gene bank	Center ofAgricultural Plant Resources (25 Institutes and other research centers, including 3 seed gene banks, 24 field gene banks (plant collection gardens) and a number of invitro gene banks)	Hanoi and other provinces	100	2020
12.	Medicinal gene bank (seed and invitro gene bank)	Gene bank	The Institute of Medicine	Hanoi	0.1	2020
13.	Plant Seed Company	Gene bank	Central forestry seed company (including 9 units)	Hanoi and other provinces		2030
14.	Soc Son Rescue Centre	Rescue Centre	Hanoi Forest Protection Department	Hanoi	01	2020
15.	Hanoi Zoo	Animal Facility	Hanoi People's Commitee	Hanoi	220	2020
16.	Hanoi Botanic Garden	Botanic Garden	One-member Ltd. Company of Hanoi Green Tree	Hanoi	10	2020
17.	Hanoi Medicine Plant Garden	Medicine Plant Garden	The Institute of Medicine	Hanoi	05	2020
18.	Nui Luot Botanic Garden	Botanic Garden	Forestry University, MARD	Hanoi	100	2030
19.	Cuc Phuong Rescue Centre	Rescue Centre	Cuc Phuong National Park	Ninh Binh	04	2020
North Central Coast						
20.	Phong Nha Rescue Centre	Rescue Centre	Phong Nha National Park	Quang Binh	05	2020
21.	Pu Mat Rescue Centre	Rescue Centre	Pu Mat National Park	Nghe An	05	2020

22.	Medicine Plant Garden inThanh Hoa	Medicine Plant Garden	The Institute of Medicine	Thanh Hoa	05	2020
23.	Pu Mat Ex-situ Botanic Garden	Botanic Garden	Pu Mat National Park	Nghe An	53.65	2030
24.	Ben En Rescue Centre	Rescue Centre	Ben EnNational Park	Thanh Hoa	05	2030
South Central coast						
25.	Marine animal park/ marine animal rescue centre	Animal Park	Khanh Hoa PC	Nha Trang	Newly established	2030
26.	Song Thanh Rescue Centre	Rescue Centre	Song Thanh National Park	Quang Nam	05	2030
Central Highlands						
27.	Bidoup – Nui Ba Rescue Centre	Rescue Centre	Bidoup – Nui Ba National Park	Lam Dong	5	2020
28.	Kon Ka Kinh Rescue Centre	Rescue Centre	Kon Ka Kinh National Park	Gia Lai	50	2020
29.	Lang Hanh Botanic Garden	Botanic Garden	Lang Hanh Forestry Experiment Station	Lam Dong	105	2030
30.	Chư Mom Ray Rescue Centre	Rescue Centre	Chư Mom Ray National Park	Kon Tum	80	2020
South East						
31.	Medicine Plant Garden	Medicine Plant Garden	The Institute of Medicine	Ho Chi Minh City	1.2	2020
32.	Cat Tien Rescue Centre	Rescue Centre	Cat Tien National Park	Dong Nai	240	2020
33.	Cu Chi Rescue Centre	Rescue Centre	Ho Chi Minh FPD	Ho Chi Minh City	0.4	2020
34.	Thao Cam Vien Zoo	Zoo	Ho Chi Minh PC	Ho Chi Minh City	200	2020
35.	Sai Gon Park	Botanic Garden	Ho Chi Minh PC	Ho Chi Minh City	33	2020
36.	Cu Chi Botanic Garden	Botanic Garden	Ho Chi Minh PC	Ho Chi Minh City	219.39	2020

37.	Trang Bom Botanic Garden	Botanic Garden	Center for Agricultural Production Science of East Southern – Vietnam Association of Forestry Science	Dong Nai	07	2030
Mekong River Delta						
38.	Hon Me Rescue Centre	Rescue Centre	Kien Giang FPD	Kien Giang	0.1	2020

4.4. LIST OF BIODIVERSITY CORRIDORS

(issued together with Decision 45/QD-TTg dated January 4, 2014 of the Prime Minister approving the National Biodiversity Conservation Master Plan to 2020, vision to 2030)

No.	Name	Province	Area (ha)	Period	Target of establishment
			North East		
1.	Na Hang - Ba Be	Tuyen Quang	506	2020	Supports the migration of species in the future due to impacts of climate change
2.	Bac Mê - Du Gia	Ha Giang	5,601	2030	Supports the migration of species in the future due to impacts of climate change
3.	Bac Me - Khau Ca	Ha Giang	7,576	2030	- Snub-nosed monkey populations in Khau Ca protected areas might approach ecological carrying capacity. - Supports restoration of populations of species in places where local extinctions or population declines occur.
4.	Khau Ca - Du Gia	Ha Giang	360	2030	- Snub-nosed monkey populations in Khau Ca protected areas might approach ecological carrying capacity. - Supports restoration of populations of species in places where local extinctions or population declines occur. - Small area and high feasibility
5.	Na Hang – Bac Me	Tuyen Quang, Ha Giang	17,847	2030	- Conduct conservation outside SUF boundaries and in the corridor passing through the area of conservation significance where Francois' langurs exist. - Supports the migration of species in the future due to impacts of climate change
6.	Cuc Phuong – Ngoc Son – Ngo Luong	Hoa Binh	622	2030	- Supports the migration of species in the future due to impacts of climate change - Small area and high feasibility - Supports the exchange of genetic information between isolated populations of golden-headed langur
7.	Pu Luon- Hang Kia – Pa Co	Hoa Binh	19,141	2030	Supports the migration of species in the future due to impacts of climate change
			Red River Delta		
8.	Northern biodiversity corridor	Thai Binh, Hai Phong, Quang Ninh	20,056	2030	- Is a stepping-stone corridor - Accelerates the accumulation of material, raises the soil and minimizes the impacts of rising sea levels. - Supporting the formation of biosphere reserves the Red River Delta. - Disaster Prevention (waves) - Provides habitat and breeding area for species with high economic value - Supports the migration of species in the future due to impacts of climate change

North Central Coast					
9.	Khe Net - Vu Quang	Ha Tinh, Quang Binh	88,786	2030	- Supports the migration of species in the future due to impacts of climate change, particularly endemic pheasant groups with narrow ecological range - Extends the habitat for the Asian elephant populations - Includes the Giang Man mountain area that has high biological diversity
10.	Pu Hoat – Xuan Lien	Nghe An	17,318	2030	Supports the migration of species in the future due to impacts of climate change
11.	Pu Huong – Pu Hoat	Nghe An	23,037	2030	- Supports the establishment of Western Nghe An Biosphere Reserve - Supports the migration of species in the future due to impacts of climate change
12.	Pu Mat – Pu Huong	Nghe An	35,964	2030	- Supports the migration of species in the future due to impacts of climate change
13.	Vu Quang – Pu Mat	Ha Tinh, Nghe An	79,688	2030	- Supports the movement of species with a large living area - Supports the migration of species in the future due to impacts of climate change
South Central Coast					
14.	Dak Rong- Bac Huong Hoa	Quang Tri	15,451	2020	- Supports the movement of species with a large living area - Conducts conservation outside SUF boundaries - Supports the migration of species in the future due to impacts of climate change, particularly pheasant and primate groups with narrow ecological range
15.	Sao La - Phong Dien	Thua Thien Hue	26,711	2020	- Supports the movement of species with a large living area - Supports restoration of populations of species in places where local extinctions or population declines occur. (E.g.Primate groups in Bach Ma NP) - Conducts conservation outside SUFs - Supports the migration of species in the future due to impacts of climate change
16.	Song Thanh - Sao La	Quang Nam	76,579	2020	- Support the movement of species with a large living area - Conducts conservation outside SUF boundaries - Supports the migration of species in the future due to impacts of climate change

17.	Ngoc Linh (Quang Nam) Song Thanh	Quang Nam	9,633	2030	- Supports the movement of species with a large living area - Conducts conservation outside SUF boundaries - Supports the migration of species in the future due to impacts of climate change
Central Highlands					
18.	Ngoc Linh – Ngoc Linh (Kon Tum)	Kon Tum	2,336	2030	- Supports the movement of species with a large living area - Supports the migration of species in the future due to impacts of climate change
19.	Kon Ka Kinh - Kon Chu Rang	Gia Lai	9,511	2030	- Supports the movement of species with a large living area - Supports the migration of species in the future due to impacts of climate change
South East					
20.	Cat Tien – Cat Loc	ĐongNai	16,722	2030	- Supports the movement of species with a large living area (gaur) - Supports the migration of species in the future due to impacts of climate change
Mekong River Delta					
21.	Mekong Delta	Tien Giang, Ben Tre, Bac Lieu, Ca Mau	90,222	2030	- Is a stepping-stone corridor connecting Ca Mau Cape, Dam Doi, Thanh Phu and Can Gio Protected Areas - Accelerates the accumulation of material, raises the soil and minimizes the impacts of rising sea levels - Disaster Prevention (waves) - Provides habitat and breeding area for species with high economic value - Supports the migration of species in the future due to impacts of climate change

Appendix 5:

LIST OF MARINE PROTECTED AREAS UP TO 2015

(According to Decision No. 742/QĐ-TTg dated May 26, 2012 of the Prime Minister)

No.	Name/Location	Total area (ha)	Marine area (ha)	Status
1	Tran Island/Quang Ninh	4,200	3,900	
2	Co To/Quang Ninh	7,850	4,000	
3	Bach Long Vi/Hai Phong	20,700	10,900	Established
4	Cat Ba/Hai Phong	20,700	10,900	Established
5	Hon Me/Thanh Hoa	6,700	6,200	
6	Con Co/Quang Tri	2,490	2,140	Established
7	Hai Van-Son Tra/Thua Thien Hue- Da Nang	17,039	7,626	
8	Cu Lao Cham/Quang Nam	8,265	6,716	Established
9	Ly Son/Quang Ngai	7,925	7,113	
10	Nam Yet/Khanh Hoa	35,000	20,000	
11	Nha Trang Bay/Khanh Hoa	15,000	12,000	Established
12	Chua Mountain/Ninh Thuan	29,865	7,352	Established
13	Phu Quy/Binh Thuan	18,980	16,680	
14	Hon Cau/Binh Thuan	12,500	12,390	Established
15	Con Dao/Ba Ria-Vung Tau	29,400	23,000	Established
16	Phu Quoc/Kien Giang	33,657	18,700	Established

Appendix 6:

INDICATORS FOR MONITORING AND EVALUATION OF THE NBSAP IMPLEMENTATION

No.	Indicator	Responsible agency (including monitoring and evaluation)	Time frame			Evaluation method
			2010	2015	2020	
I	Strategic Goal 1:Protectecosystems of national and international importance					
1	Total area of terrestrial Protected Areas (including wetland PAs)	MARD	2.5 million ha	2.75 million ha	3.0 million ha	Statistics and reporting
2	The forest coverage	MARD	40%	42-43%	45%	Statistics and reporting
3	The area of primary forests	MARD	0.57 million ha	Unchanged	Unchanged	Statistics and reporting
4	The area of mangroves	MARD	190,000 ha	Unchanged	Unchanged	Statistics and reporting
5	The area of seagrass beds	MONRE	12,380 ha	Unchanged compared to 2010	Unchanged compared to 2010	Statistics and reporting
6	The area of coral reefs	MONRE	14,131 ha	Unchanged compared to 2010	Unchanged compared to 2010	Statistics and reporting
7	Number of internationally recognized PAs	MONRE	2 Ramsar sites, 8 Biosphere Reserves, 4 ASEAN Heritage Parks	7 Ramsar sites, 9 Biosphere Reserves, 7 ASEAN Heritage Parks	10 Ramsar sites, 10 Biosphere Reserves, 10 ASEAN Heritage Parks	Statistics and reporting

8	Number of PAs carrying out economic evaluation of ecosystem services and biodiversity	MONRE	0	5	30	Statistics and reporting
II	***Strategic Goal 2: Reduce the degradation of endangered, rare and precious wildlife, plants, agricultural crops and domestic animals***					
9	Number of qualified national plant gene banks by international standards	MARD	-	-	1 (upgrading plant genetic resource centers)	Statistics and reporting
10	Number of crop specimens stored and preserved in seed banks, gene banks, in the field and in-vitro	MARD	>20,000	40,000 – 50,000	80,000 – 120,000	Statistics and reporting
11	Number of rare and precious species threatened with extinction	MONRE	47	Unchanged compared to 2010	Unchanged compared to 2010	Survey
12	Number of extinct rare and precious species	MONRE	9	0	0	Survey
13	Number of rare and precious species protected from the threat of extinction	MONRE	-	-	10	Statistics and reporting
III	***Strategic goal 3: Strengthened sustainable use and equitable sharing of ecosystems, species and genetic resources***					
14	Percentage of important degraded ecosystems effectively recovered	MARD	(no baseline data)		Up by at least 15% compared to 2010	Statistics and reporting

15	Number of rare species with economic value studied and bred	MARD		Up by 15% compared to 2010	Up by 30% compared to 2010	Statistics and reporting
16	Percentage of PAs applying benefit-sharing mechanisms	MARD	10 PAs	Up by 10%	Up by 50%	
IV	***Strategic goal 4: Reduce direct pressures on biodiversity***					
17	The rate of loss of natural forests and water surface area due to land-use conversion	MARD	(no baseline data)	Reduced by 10% compared to 2010	Reduced by 40% compared to 2010	Statistics and reporting
18	Number of wildlife violations	MARD	876 cases	Reduced by 10% compared to 2010	Reduced by 40% compared to 2010	Statistics and reporting
19	Number of cases of trade and transportation of forest products	MARD	17,899 cases	Reduced by 10% compared to 2010	Reduced by 40% compared to 2010	Statistics and reporting
20	Number of deforestation cases	MARD	3,503 cases	Reduced by 20% compared to 2010	Reduced by 50% compared to 2010	Statistics and reporting
21	Number of confiscated precious and rare wildlife	MARD	12,936	Giảm 20% so với 2010	Giảm 40% so với 2010	Thống kê báo cáo
22	Number of invasive alien species discovered in Vietnam	MONRE	33	No increase compared to 2010	No increase compared to 2010	Statistics and reporting
V	***Strategic goal 5: Actively respond to climate change through biodiversity conservation measures***					
23	Number of biodiversity corridors set up	MONRE	(piloting, not yet recognized)	3	6	Statistics and reporting

UNITED NATIONS DEVELOPMENT PROGRAMME (UNDP)

GLOBAL ENVIRONMENTAL FACILITY (GEF)

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