



Integration for Biodiversity in Vietnam

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1. Introduction

Vietnam reported¹ on integrating biodiversity into inter-sectoral plans, programs and policies and regional development, such as: strategies for hunger eradication and poverty reduction, national sustainable development strategy, national action plan to combat desertification, planning to response to climate change, regional development plans; integrating biodiversity in implementing international conventions; integrating biodiversity in related sectors including the sector of natural resources and environment, the sector of agriculture and forestry , the sector of fishery, the sector of tourism, the sector of industry and trade, the sector of science and technology, the sector of finance, the sector of training and education; mechanisms for integrating biodiversity contents; ecosystem-based approach for integrating biodiversity into sectoral and inter-sectoral strategies, plans and programs; some achievements of biodiversity integration into sectoral and intersectoral policies.

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

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

Strategies for hunger eradication and poverty reduction

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

National Sustainable Development Strategy:

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

- Exploit appropriately, use economically and effectively natural resources; suspend, prevent, deal and control environment pollution effectively; protect national parks, PAs, biosphere reserves and conserve biodiversity; recover degradation and improve environmental quality.
- One of prioritized areas in this strategy is forest protection and development and biodiversity conservation. Some sectors with potential impacts on the environment such as energy, mining, construction, transportation, and tourism must develop their own action plans to ensure sustainable development, in which paying particular attention to application of advance technologies of exploitation and processing, so that natural resources are saved, pollution and emissions are reduced, renewable energy is encouraged to use, and the environment in exploited areas is improved.

¹ Vietnam (2009). 4th Country Report Vietnam's Implementation of the Biodiversity Convention, Ministry of Natural Resources and Environment, Vietnam Environment Administration, Ha Noi, 2008, 98 pp.

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

National action plan to combat desertification

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

Planning to response to climate change

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

Regional development plans

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

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

Environmental tools are widened to be able to conduct strategic environment assessment (SEA) for regional economic development plans. For example, SEA was conducted for the Regional Economic

Development Planning in the Central (from Thua Thien-Hue to Binh Dinh). In the SEA report, ecological and biodiversity issues of sensitive areas in the region were collected for assessment and prediction of possible impacts of each industry sector. SEA results play one basement for development planners to make adjustment suitable to actual situation, in order to harmonize development and environmental protection as well as biodiversity conservation.

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

3. Integrating Biodiversity in Implementing International Conventions

Ramsar Convention

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

In 2006-2007, the Environment Protection Agency drafted a Wetland Planning. In 2007, the agency developed a draft decision for MONRE Minister on Criteria for Wetlands Evaluation and Selection; a draft Decision for MONRE Minister to release guidance to Typical Wetland Planning; a draft Decision for MONRE Minister to release Vietnam Wetland Classification System. So far 2 Ramsar sites were acknowledged in Vietnam: Xuan Thuy National Park (Nam Dinh) and Bau Sau (Cat Tien National Park, Dong Nai).

Convention on International Trade in Endangered Species (CITES)

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

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

Convention on Protection of World Natural and Cultural Heritages

After joining the Convention, Vietnam have received acknowledgement for several World Natural Heritages, ASEAN Heritages and Biosphere Reserves.

Cartagena Protocol on Biosafety

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

United Nations Framework Convention on Climate change, 2007-2010

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

United Nations Convention to Combat Desertification

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

4. Integrating Biodiversity in Related Sectors

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

The Sector of Natural Resources and Environment

"National Strategy for Environment Protection to 2010 and Orientations towards 2020" was approved by the Government in 2003. One objective given in this strategy is to maintain ecological balance at high level, such as: recover 50% of mining areas and 40% of severely degraded ecosystems; Increase forest coverage to 43%, recover 50% of degraded watershed forests and improve forest quality; Promote dispersal planting in community; Increase the rate of using clean energy to 5% of total annually used energy; Increase total area of PAs to more 1.5 times of that at the present, especially marine and wetland protected areas; Regenerate the area of mangrove forests to 80% of that in 1990. To achieve these objectives, a series of tasks are identified as follows: Protect and develop nature reserves and national parks; Develop forests and increase the area of vegetation; Protect biodiversity; and particularly promote the application of economic tools for environment management.

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

The Environmental Protection Law 2005 includes regulations for SEA and EIA addressing people in charge of preparing reports; guidance for writing reports; report contents; appraisal and approval of

reports; as well as the responsibilities to following recommendations given in EIA/SEA reports and monitoring the compliance.

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

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

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

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

Especially in 2004, the Central Communist Party Committee has released the Resolution No.41-NQ/TW about promoting environment protection efforts to support the country's industrialization and modernization. This resolution reflected how the top leaders aware of the importance of environmental protection. Later, Prime Minister has also released the Decision No.34/2005/QĐ-TTg dated on February 22nd 2005 approved the Governmental Action Plan to make the Resolution 41 operationalised. Nature conservation and biodiversity protection are those tasks addressing in this action plan, including:

- Strengthening marine, coastal and island environmental protection; protecting and developing forests, especially primary forests, special use forests, protection forests and mangrove forests. Strictly protecting PAs and national parks.
- Developing, approving and implementing the National Biodiversity Action Plan for the period of the country's industrialization and modernization.

- Strictly following regulations to protect precious, rare and threatened wildlife species which have been officially listed; protecting and preventing the loss of precious native genetic sources; preventing the invasion of alien species and those GMOs that negatively affected the environment and people.

The Sector of Agriculture and Forestry

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

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

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

The Sector of Fishery

It promulgated a range of regulations and developed several large-size projects and programs for sustainable protection and development of aquacultural resources. To implement the NBAPs, since 1997, the sector has taken place the Off-shore Fishing Programme, aiming to reduce over-exploitation and protect aquacultural resources in coastal marine, which have been exhausted for past many years, while accessing to off-shore resources that not yet exploited previously. Thanks to this programme, the productivity of off-shore aquacultural products of Vietnam has come up 1/3 of the total national productivity. Particularly in 1998, the former Ministry of Fishery prepared Overall Fishery Development Plan to 2020, which has put attention to serious risks of coastal ecosystem degradation and future opportunities of the sector. Recently, the development of aquacultural farming has considerably reduced pressures on natural exploitation of marine resources. According to statistics, the productivity

of aquacultural farming in 2004 was about 1.15 millions tons, making up 37.4% of the total harvest productivity. According to the plan, this rate is estimated to 60% in 2010.

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

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

The Sector of Tourism

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

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

The Sector of Industry and Trade

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

The Sector of Science and Technology

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

The Sector of Finance

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

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

The Sector of Training and Education

It developed and submitted the Prime Minister to approve the project that to integrate environmental protection contents into the the national education system.

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

5. Mechanisms for integrating biodiversity contents

- Formulation:

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

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

- Implementation:

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

The Decree No.144/2005/NĐ-CP released by the Government provides the guidance for cooperation between administration agencies to develop and monitor the implementation of policies, strategies, and plans. This Decree regulates principles, approaches and responsibilities for cooperation among administration agencies in formulating policies, strategies, and plans (all referred as projects) according to the jurisdiction of promulgation, approval, or ratification of the Government, the Prime Minister, Ministers, Heads of Ministerial Agencies, Heads of Governmental Agencies; People's Committee and Provincial People's Committee Chairmen,; and in monitoring the implementation of those projects once they are in effect (referred as implementation overseeing).

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

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

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

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

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

The Decree No.140/2006/NĐ-CP released by the Government regulating environmental protection contents in the formulation, appraisal, ratification, and implementation of development strategies, plans, programs and projects. The Article 4 of this decree about General Principles regulates: the environmental protection must be respected and considered when initiating the project ideas, developing project directions, overseeing through the process of formulating, appraising, approving,

and implementing development strategies, plannings, plans, programs and projects to ensure economically, socially and environmentally sustainable development. Short-term benefits should not be the reason for long-term serious damages to the environment.

Monitoring, Evaluation and Inspection

On 13th February 2007, Prime Minister has promulgated the Decision No.232/QĐ-TTg releasing the plan for checking the implementation of the Government's policies, strategies, plannings, and plans in 2007. According to the plan, 15 sectors will be checked, including investment, corporates; transportation; saving performance and wasting prevention; administrative reform; healthcare; post and telecommunication; education and training; land use and housing; science and technology; natural resources and environment; tourism; agriculture and rural; population and social issues; urban planning and management; governmental officer training. The decision also regulates the evaluation contents, host agencies for evaluation, main collaborator agencies, and scheduling for each specific sector.

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

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

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

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

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

based approach for biodiversity conservation in Yokdon national park (Dak Lak) and Ba Be national park (Bac Kan) (VIE/95/G31&031 project).

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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