

Vietnam is one of the most biologically diverse countries in the world and is recognized as a high priority for global conservation. Its natural ecosystems include a rich variety of productive and beautiful forest types, marshes, rivers, and coral reefs, which together support nearly 10 percent of the global total of mammal and bird species. Many species are unique to Vietnam or found in very few other places in the world, making the country the best—in some cases the only—opportunity in the world for their conservation.

Forest cover, including both natural forest and plantations, is 37 percent of the total land area of the country. About 18 percent of that total is plantations. Only 7 percent of remaining forest is “primary” forest, and nearly 70 percent is poor quality secondary forest. Vietnam’s wetlands include many types of rivers, ponds, swamps, wet forests, and reed beds. There are 39 documented wetland types, including mangroves and other inter-tidal forests, brackish lagoons, seagrass beds, and coral reefs, all of which have high species richness and productivity. The marine environment covers 20 distinctive ecosystem types; many are regionally unique in their oceanographic properties. These support more than 11,000 species. About 1,100 square kilometers of coral reefs are widely distributed from the north to the south, with the largest area and highest biodiversity found in the center and south of the country. Vietnam’s coral reefs support nearly 400 species of reef-building corals, which compares with the most diverse systems worldwide.

Vietnam is within one of the eight Vavilov “Centers of Origin” for domesticated plants, and has a high variety of both domesticated animals and crop plants. For example, Vietnam has dozens of races of the 14 major livestock and poultry species. Domestic plants are very diverse; over 700 plant species are grown for food, medicine, and construction.

In recent decades, scientists have discovered many previously unknown species in Vietnam, including some new to science. The list includes five new mammal species and three new bird species to be described in mainland Southeast Asia in 30 years. Also during this period, large numbers of new species of reptiles, amphibians, fishes, and invertebrates were described, including six new species of crabs. In the 10-year period to 2002, 13 new genera, 222 new species, and 30 new subspecies of plants were described in Vietnam.

Vietnam’s natural systems, species, and genetic material are an intrinsic part of the country’s economy and culture. This biodiversity makes a major contribution to many development sectors such as forestry, fisheries, agriculture, health, industry, and tourism. The aesthetic attractions and charismatic wildlife of natural areas bring considerable economic benefits to the country and local people through the expanding nature-based tourism industry. Vietnam’s natural systems provide important environmental services such as soil and watershed protection with benefits for soil fertility, river navigation, irrigation, and hydropower. They also contribute to global and local climate regulation. The coastal forests and coral reefs are important in coastal protection and as breeding grounds for many economically important species. In short, Vietnam cannot afford to let its biodiversity degrade.

Ecological systems and the biodiversity contained within them provide much of the basic needs of the rural poor—from foodstuffs to fuelwood, medicines, and potable water. In addition, they provide insurance against natural disasters, to which the poor are particularly vulnerable. Some 25 million Vietnamese depend on forest systems and an estimated 8 million depend on fisheries as their primary source of household income. An additional 12 million get part of their income or subsistence from fisheries. Recognizing and understanding the value of biodiversity for poor people can help provide livelihood opportunities, improved nutrition, health, and water supply. Over 85 percent of protected areas in Vietnam are located in areas of high poverty. Forest management and biodiversity conservation therefore affect and are affected by poverty reduction initiatives.

### **Biodiversity trends and threats**

Forest cover is increasing. The government has set a target of 43 percent forest cover in the country by 2010. Yet natural forests are increasingly fragmented and degraded. Over two-thirds of Vietnam's natural forests are considered poor or regenerating. Forest loss and degradation are major reasons for desertification and land impoverishment, creating a wide range of negative impacts and challenges such as more serious flooding and drought. Rapid conversion of wetlands continues; remaining areas are under intensive use and development pressure. Mangrove forests appear to have stabilized in some local areas, but wide-scale coral reef degradation continues.

Nearly 700 species are threatened with extinction nationally, while over 300 species are threatened with global extinction. Forty-nine of Vietnam's globally threatened species are classified as "critically endangered," meaning they face a high risk of extinction in the wild in the immediate future. Fisheries resources are declining, especially in inland and nearshore ecosystems. If current trends continue, it is likely that the first decades of the 21<sup>st</sup> Century will witness a wave of species extinctions unprecedented in Vietnam's history.

As the country's economy has expanded and the population grown, Vietnam has experienced worsening habitat loss, habitat fragmentation, pollution, and the increasing incursion of invasive alien species. Threats are compounded by the lack of clear institutional arrangements for biodiversity conservation, capacity and commitment in implementation of good policies, and a lack of ownership of the natural resource base by local communities.

Wildlife consumption in Vietnam is unsustainable. Poaching is one of the most significant threats to protected areas and is considered among the greatest threats to biodiversity in Southeast Asia. In 2002, the trade in wildlife within and from Vietnam amounted to approximately 3,050 tons and was worth over \$66 million. Other threats include destructive fishing techniques, such as the use of dynamite, poison, and electric fishing, which are effecting over 80 percent of Vietnam's coral reefs. Illegal logging continues in areas where effective forest protection has not taken hold. Between 0.5 and 2 million m<sup>3</sup> of timber is extracted illegally each year from all forest categories, including special-use forests. The rate of extraction exceeds sustainable levels by 70 percent.

The unintended effects of infrastructure development on natural systems are leading to biodiversity loss and beginning to have very significant negative impacts on the productivity of key economic sectors and on the economy overall. Encroachment by fixed cultivation and shifting agriculture has led to loss of forest ecosystems. Freshwater wetlands, such as seasonally inundated grasslands, also have been threatened by conversion to rice agriculture. Vietnam has experienced the introduction of a number of invasive species. The increase in global trade, travel, and transport of goods across borders—as well as growing development of infrastructure such as roads—has facilitated the spread of invasive alien species. Although to date natural terrestrial ecosystems do not appear to be seriously affected in freshwater and agricultural systems, the impacts of invasive species have been much more dramatic, with substantial economic costs.

About 6 million hectares of Vietnam's forests are considered to be vulnerable to fire. Between 1992 and 2002, forest losses due to fire averaged 6,000 hectares annually. In the three years to 2005, MARD reports that authorities uncovered 134,000 cases of crime related to the prevention and control of forest fire rules.

## Policy, institutional and management responses

The Government of Vietnam and its partners are responding to these urgent conservation needs. Efforts by the government, international donors, and conservation organizations have been substantial and have resulted in several key achievements. Vietnam has established a solid framework of laws and institutions. Starting in the late 1980s, Vietnam committed to establishing the necessary laws to protect its biodiversity. In 1995, a national Biodiversity Action Plan (BAP) was adopted to guide and focus the nation's conservation effort. A new BAP, covering the period 2006-2015 with a vision to 2020, is being developed by MoNRE and will be issued in 2006. A law on biodiversity is in the early stages of preparation. Other detailed plans for biodiversity conservation include the Management Strategy for a Protected Area System in Vietnam to 2010, which was adopted by government in 2003; the Action Plan for Wetlands Conservation and Sustainable Development (2004–10); and the draft Marine Protected Areas Action Plan, which is expected to be adopted early in 2006. Regulations to support implementation of these plans are being prepared by MARD, MoFi, and MoNRE.

Responsibility for many aspects of biodiversity conservation is strongly decentralized to the provincial and levels of local government, which presents a number of opportunities for better management. Decentralization also presents a number of obstacles to effective biodiversity conservation. Critical responsibilities and authorities are often devolved to agencies that do not have the capacity, skills, and detailed administrative arrangements to take the new roles on board. Implementation has been a slow process, while institutional capacities and enabling regulations and procedures have steadily been put in place. Significant barriers remain in the institutional framework, which suffers from poor inter-agency coordination and overlapping and unclear mandates.

During the past decade, Vietnam's protected areas system has expanded rapidly with the establishment of a network of 126 special-use forests (SUFs), including national parks, nature reserves, and landscape conservation areas. While coastal and marine ecosystems are represented in a number of SUFs, comprehensive planning for a national MPA system began only a few years ago. Vietnam's first marine protected area, at Nha Trang Bay, was approved for establishment in 2001. A national system of 17 MPAs is being proposed, and includes a site within the Halong Bay World Heritage Site. Protection of freshwater wetlands remains in the planning stages. The management of these areas is improving, but they are facing constraints, including a lack of consistent support from local authorities and limited funding. The number of staff and their qualifications are not adequate to meet the demands of PA management. Both the government and NGOs have recognized the need for further conservation training.

Around 80 percent of SUFs have communities living within them, although this is not permitted under the 2004 Forest Development and Protection Law. The situation with MPAs and wetland conservation areas will differ. Under the Fisheries Law and the draft MPA regulations, the concept of multiple use and community zones associated with protected areas has been introduced. Overall, government policies relating to communities and protected areas are evolving.

Protected-area designation applies to only 7 percent of the country. Natural areas beyond their borders are also critical to the long-term conservation of biodiversity. The role of buffer zones in preventing and lessening encroachment on protected areas has been recognized in government regulations since the late 1980s, but they do not have clearly defined boundaries or management objectives and regimes. More protected areas are being planned and managed at the landscape or bioregional scales. This is a reflection of the ecosystem approach advocated by the Convention on Biological Diversity (CBD), to which Vietnam is a party. This approach extends the conservation reach well beyond strictly protected core zones. In several regions of the country, landscape planning is under way to encourage conservation of contiguous habitat linking protected areas.

## SUMMARY

Although there continues to be a lack of acknowledgment of biodiversity values within the plans and strategies of other sectors, there are a growing number of examples—in agriculture, fisheries, and forestry—in which biodiversity issues are being integrated. The forest sector, in particular, has led in bringing conservation and sustainable use into policies, legislation, and national programs. Examples include the Forest Protection and Development Law (1991 and 2004), the Land Law (1993 and 2003), the policy on closing natural forests, and the Forest Land Allocation (FLA) programs, which have been conducted since the 1993 Land Law revision. The operational focus for implementing these policies has been the Five Million Hectare Reforestation Program (5MHRP), also known as the 661 Program, as well as a series of initiatives, including National Agenda 21, the Law on Environmental Protection (1993) and its amendment now under consideration by the National Assembly, the National Environmental Protection Strategy until 2010 and Vision toward 2020, Politburo Resolution 41-NQ/TW on environmental protection, and the Prime Minister's Decision 34/2005/QĐ-TTg promulgating Government's action plan to implement the Resolution 41-NQ/TW. Together, these provide direction for incorporating environmental issues across governmental plans and programs, including emphasis on the use of environmental assessment early in development planning.

National and international investment in Vietnam's conservation projects has been growing; \$261 million was spent between 1996 and 2004. Total investment in biodiversity conservation in 2005 could reach \$51.8 million, which is 10 times higher than total investment a decade earlier. While ODA still accounts for most expenditure on biodiversity, the government share has increased from 26 percent in 1996 to 40 percent in 2004. Even so, average annual spending for biodiversity accounts for only 0.4 percent of total expenditure from the state budget, for 2 percent of total ODA to the environment sector, and only 0.3 percent of total ODA to Vietnam. Despite a growing commitment to the principle of corporate environmental and social responsibility by private firms globally and some encouraging pilot activities, the private sector is not fully engaged in biodiversity conservation in Vietnam.

Both ODA and government investment in biodiversity conservation has been skewed toward particular ecosystems, sites, and approaches. More than 66 percent of the government's total expenditure on biodiversity has been for capital investment projects that were not necessarily priorities for conservation.

Payment for environmental services represents one innovative source of conservation financing with high potential for application in Vietnam. New policy developments such as the Law on Forest Protection and Development (2004) and the planned biodiversity law could provide a foundation for ecosystem service payments and a user pays approach to those who benefit commercially from biodiversity.

The role of communities in biodiversity conservation is growing. With a large number of poor communities dependent upon natural resources in the country, especially in the remote mountainous areas and protected areas, the relationship between biodiversity and communities is crucial to both poverty alleviation and conservation. Progress on this front has been incremental. Community-based projects and public awareness are growing, but the systematic approach necessary for truly broad impact is lacking.

### **Challenges and directions for innovation**

***Improve the protected area network and its management effectiveness.*** The protected area system is a cornerstone of Vietnam's biodiversity conservation program. The priorities are to expand the protected area network to include poorly represented habitats such as lowland evergreen forests, rivers, coastal wetlands, and marine areas. A review of the protected areas system is needed to define a comprehensive, adequate, and representative (CAR) system of protected areas for all terrestrial and

marine bioregions, and to identify adjustments and additions required. Management planning is critical to improving the PA system so that scarce financial resources are focused on conservation needs. Legal provisions and procedures are also required for (a) boundary demarcation and zoning, (b) working with communities living within and around PAs, (c) establishing clearly defined buffer zones, and (d) allowing management boards clear autonomy to raise and use revenues.

***Strengthen the rights and capacity of communities to manage natural resources.*** In marine and wetland conservation areas and in certain categories of forest, the evolving legal framework foreshadows multiple use zones and collaborative management arrangements. The mechanisms for natural resources management and sustainable use by communities need to be developed. Extension services and protected areas staff need to develop greater capacity to allow new roles to be taken on in community outreach and support. Special arrangements are needed to manage uses of protected areas, including structures and governance procedures to involve communities and to allow traditional and subsistence uses of PA resources within the context of agreed plans, zones, and monitoring. The main challenge for PA staff and communities is to determine the levels of use that natural systems can sustain without harming biodiversity.

***Improve the integration of biodiversity protection measures into economic development.*** Infrastructure developments and expanding exploitation of natural resources are having major impacts on biodiversity at the site and landscape levels. Three priority strategies are needed: (1) regional biodiversity planning to set conservation frameworks for development both within and outside protected areas; (2) a much more rigorous application of EIA procedures to ensure that conservation standards and guidelines are followed, and areas which must be kept in their natural state are not harmed; and (3) “user pays” policies for commercial exploitation of biodiversity and ecosystem benefits.

***Improve enforcement, especially regarding illegal wildlife trade.*** Vietnam is one of Asia’s major international markets in endangered plant and animal species, both as a supplier of species caught within Vietnam and as a transit point for trade between regional neighbors. For Vietnam to meet its international legal obligations, it needs to fully implement the various action plans covering enforcement, public disclosure, and awareness. This will require increased powers for the Forest Protection Department in law enforcement, improved coordination between local authorities and enforcement agencies, and increased understanding and knowledge of the laws and capacity to enforce them.

***Increase, diversify, and effectively manage the financing available for conservation.*** Investment in biodiversity conservation has emphasized a relatively small number of areas and the financing of buildings and roads in protected areas. To reverse the current trend of biodiversity loss, there will need to be (1) an increase in the total amount of conservation investment by government, and (2) a more strategic targeting of funds to meet conservation needs. Another priority is to assess and develop the opportunities for the poor to benefit from the provision of ecological services, in particular ecotourism, watershed protection, and carbon sequestration, and to empower protected areas staff to raise revenues and thereby develop sustainable conservation financing.

Underlying all these challenges is the need to build the capacity, skills, and budgets of protected area managers. Strong protected area authorities are essential to the innovation and flexibility required if protected area systems are to survive and remain the principle form of special tenure for biodiversity conservation. Protected area managers must be given the authority, confidence, and resources to build working relationships with development sectors and local communities, allowing them to take their skills and knowledge into the productive sectors around the protected areas. A strong impetus for innovation and progress in managing protected areas will come from Vietnam’s working relationships with neighbouring countries and with the international community.

## SUMMARY

Species extinction and, to a large extent, habitat loss are irreversible. Decisions taken today will affect future generations. Wisdom and conviction are needed to ensure that Vietnam's remarkable natural assets are managed to ensure that the benefits and advances of the steep development path that Vietnam is on do not come at the cost of permanent damage to the global commons.