GMS BIODIVERSITY CONSERVATION CORRIDORS INITIATIVE

STRATEGIC FRAMEWORK AND TECHNICAL ASSESSMENT
Executive Summary

May 2005

1. The Greater Mekong Subregion (GMS) Economic Cooperation Program is an association of six countries, namely, Cambodia, Lao People's Democratic Republic [Lao PDR], Myanmar, the People's Republic of China (PRC; Yunnan and Guangxi Zhuang Autonomous Region), Thailand, and Viet Nam. The GMS is an informal group, guided by a set of principles and institutional arrangements to help them plan and carry out projects for their mutual benefit. One major initiative is a set of economic corridors based on highways linking the countries in north-south, southern coastal, and east-west directions. The corridors are expected to play a crucial role in meeting regional development goals. However, there is concern that they will fragment and damage critical ecosystems and important areas of biodiversity (biological diversity), which would undermine the long-term environmental security and, therefore, the socioeconomic development of the GMS.

2. In 2001, the GMS countries adopted a Strategic Development Framework (SDF) to guide the next 10 years of development cooperation. Investments of more than $10 billion are envisaged during this period, focused on the economic corridors and transforming economies, communities, and the environment in the subregion. The Asian Development Bank (ADB) regional cooperation strategy and program for 2004-2008 follows the SDF to improve connectivity, competitiveness, and sense of community around the subregion. Increasingly, GMS countries will be linked through transportation, telecommunications, energy production and usage, and cross-border trade. Gross domestic product (GDP) per capita in the subregion is expected to double by 2015, by which time the population will have increased by 40 million from the present 301 million. So far, ADB transport, energy, and tourism infrastructure projects costing almost $3.4 billion have been or are being implemented. Furthermore, the GMS Program envisages additional investments in the range of $10–15 billion over the next 10 years to catalyze economic integration in the subregion.

A. Biodiversity, an Essential Development Asset in the GMS

3. The GMS harbors globally important and irreplaceable elements of biodiversity. It contains several Global 200 ecoregions (natural ecological communities with shared species, dynamics, and environmental conditions), is a global biodiversity hotspot (i.e., it contains important species threatened with extinction), and includes an extensive network of important bird habitats. Much of the subregion, especially along the Greater Annamite Mountains, is biologically unexplored. Surveys over the past 10 years have revealed species new to science. Many of these have very small ranges and are irreplaceable elsewhere. Undoubtedly, many more species await discovery. This rich web of natural systems provides the foundation for the economic, social, and cultural future of the subregion.

4. The key GMS economic sectors of agriculture, energy, fisheries, tourism, and transport all depend on the maintenance and contribution of healthy natural systems. Agriculture and fisheries provide livelihoods for at least half the GMS population and make significant contributions to GDP. The water necessary for agriculture, domestic water supplies, and increasingly, electrical power and industry, comes from the many rivers flowing through the subregion and from its groundwater. The flow and quality of water depends on the integrity of the watersheds. When forest cover is removed, loss of natural water regulation leads to increased floods and droughts and reduced water quality and accessibility. Conservation of hydrological processes is essential for the continuation of these and other ecological services to economic sectors and the numerous human communities that depend on them.

5. Biodiversity is undervalued. The cultural, educational, health, recreational, and spiritual values of the subregion's biodiversity as well as those of ecological services are difficult to quantify in monetary terms. Yet, annual values for different ecosystems on a per-hectare basis for climate regulation, water regulation and supply, soil conditioning, pollination, erosion control, waste treatment, and biological control would run into billions of dollars if applied to the GMS countries. Biodiversity conservation and maintenance require urgent increased investment and attention.

B. Threats to Biodiversity And Natural Resources

6. Evidence from the six GMS countries shows that all levels of biodiversity—habitat, species, and genetic diversity—are being lost at unprecedented rates as a result of development. It is difficult to assess rates of species loss in absolute terms. But, rates of degradation in land, freshwater, and marine habitats are a reflection of species loss. If no action is taken, it is probable that the GMS will lose more than 50% of its remaining land and water habitats over the next century (a third over the next few decades alone), leading to impoverished and unstable natural, social, and economic systems. Threats to biodiversity and natural resources in the GMS come mainly from overexploitation of natural resources and habitat loss, exacerbation of rural poverty, and construction of transnational roads and other economic development, including damming of rivers.

7. Domestic and export demand for many commodities will increase with the construction of transnational roads, and remaining forest patches will become increasingly vulnerable. The planned system of transnational roads could have severe, widespread, and irreversible impact on biodiversity in the GMS. Some of the roads bisect important conservation areas or important biodiversity corridors. Unless mitigation and conservation measures are taken, these roads will encourage the illegal wildlife trade already taking a heavy toll on biodiversity. The roads will encourage encroachment and settlements in conservation areas and will create barriers to dispersal and movement of species, especially such species as primates that are reluctant to cross open areas.

C. Biodiversity Conservation Corridors: a Development Strategy

8. The threats to natural systems, their development values, and conservation needs in the GMS call for a package of measures that build land-use and management regimes for sustainable use and conservation, restoring connectivity of ecosystems, and for poverty alleviation. While the technical problems and possible solutions are well known, there is a need for strengthening local capacity to plan, manage, and maintain biodiversity conservation for the full range of development benefits it brings. Further, there is a need to secure and greatly expand sustainable financing for biodiversity conservation measures in the GMS.

9. Biodiversity conservation corridors are areas of suitable habitat that provide functional linkages between protected areas. They have three main functions: (i) conserving habitat for species movement and for the maintenance of viable populations, (ii) conserving and enhancing ecosystem services, and (iii) promoting and enhancing local community welfare through the conservation and sustainable use of natural resources.

10. Biodiversity corridors are analogous to economic corridors in their function and objectives: both attempt to increase system connectivity, economies of scale, integration, and efficiency. Biodiversity corridors do so by enlarging the functional boundaries of conservation areas. They help the movements of species and safeguard the contributions of natural systems

more widely across development landscapes. In the absence of such corridors, ecological and environmental services of importance to the GMS development agenda will continue to decline.

11. Biodiversity corridors are intended to consolidate and expand the development and economic benefits derived from natural systems in protected areas and across the landscapes linking them. They do so through rehabilitation, conservation, and sustainable use and by internalizing biodiversity products and services in the development planning process.

D. Priority GMS Biodiversity Conservation Landscapes

12. The GMS governments, with support from ADB and nongovernment organization (NGO) partners, have identified the most important biodiversity conservation landscapes in the subregion and the biodiversity corridors within them that should receive priority attention.

13. The primary biological criteria for identifying the biodiversity conservation landscapes were the presence of landscape species (those that need large, ecologically diverse areas for their survival), ecological processes that occur over large areas, globally important species that will be affected by development and require urgent conservation, and representation of the ecoregions of the GMS. Nine high-priority landscapes were then identified based on five criteria. They had to be in the GMS economic corridors, in a designated biodiversity hotspot, affected by a major transnational road or other development, able to support landscape species and ecological processes, and important for their ecological services.

14. The nine high-priority GMS biodiversity conservation landscapes and their locations are:

(i) Western Forest Complex (Thailand and Myanmar)
(ii) Ton Le Sap Inundation Zone (Cambodia)
(iii) Cardamom and Elephant Mountains (Cambodia)
(iv) Northern Plains Dry Forests (Cambodia and the Lao PDR)
(v) Eastern Plains Dry Forests (Cambodia and Viet Nam)
(vi) Tri-Border Forests (Cambodia, the Lao PDR, and Viet Nam)
(vii) Central Annamites (Viet Nam and the Lao PDR)
(viii) Northern Annamites (Viet Nam and the Lao PDR)
(ix) Mekong Headwaters (PRC, Yunnan Province and Myanmar)

E. Protected Areas in the Biodiversity Conservation Landscapes

15. The nine high-priority landscapes include more than 55 protected areas, many contiguous across national borders and forming complexes of regional significance for biodiversity conservation. The protected areas provide the main nodes of connectivity in the nine landscapes linked by remaining but often fragmented and degraded natural forest. With rehabilitation, the habitat linkages could act as corridors for species dispersal between core populations in the protected areas. Rehabilitated and well-managed corridors between protected areas would help conserve biodiversity across the landscape, maintain ecological services, buffer core areas from external influences, and provide natural and semi-natural habitats for sustainable natural resource extraction.

F. Population and Poverty in the Biodiversity Landscapes

16. There are a number of important relationships between the nine GMS biodiversity landscapes and population. In each GMS country, corridors tend to fall in the least populated locations, are situated in regions of medium to high poverty, are subject to increasing immigration, and are experiencing increasing community pressure on biodiversity.

17. In general, although the biodiversity corridors are in regions of low population density, they are areas of medium to high population growth and medium to high poverty incidence. People are moving seasonally and permanently into them in increasing numbers. The migrant population in Cambodia, for example, is 31.5% of the total, and 70% of the migrants move from one rural area to another. People are moving into regions of remaining biodiversity wealth. In Viet Nam, the most notable migration of the last decade has been from the heavily populated north, especially the Red River Delta region, down to the central highlands. Districts around Yok Don National Park in Dak Lak Province experienced population growth rates of 14% annually, compared to the national average of 1.3%, and equivalent to some of the fastest-growing urban centers in the country. As Thailand's population increased, land-poor families migrated to forest frontier areas declared as National Reserved Forest. By 1980, an estimated 10 million people, or more than 20% of the country's villages, were located in these forest regions, which include the national protected areas system.

18. Remote areas are a refuge for displaced communities and a "last resort" employer for some of the poorest and most powerless people; these are the people most directly dependent on the supply and quality of natural resources. Often they have moved higher up into mountains, deeper into forests, or closer to sandy shorelines because of development in the lowlands, such as overpopulation, exploitation of new economic zones, and resettlement schemes for development projects, including hydropower and irrigation dams.

19. The broad distribution of poverty in the subregion affirms the importance of undertaking pro-poor and pro-biodiversity conservation interventions: poverty tends to concentrate in and around the biodiversity landscapes and the economic corridors.

G. Key Governance Opportunities for Effective Biodiversity Corridor Management

20. Four fields of governance reform are changing the way protected areas and biodiversity conservation are planned and managed in the GMS countries. They are decentralization, "democratization" (i.e., providing more opportunities for nongovernment groups, communities, and individuals to influence how natural resources are used), institutional innovation, and reinforcing the rule of law.

21. **Decentralization** is a major force in governance reform in the GMS countries. It entails delegating greater responsibility and authority for development decisions to local government. It involves transferring to local levels certain powers over budget management and even the potential for local taxation and revenue raising. These reforms, combined with expanding legal frameworks for establishing tenure, ownership and rights of access to land and natural resources, shift the weight of development planning and decision making closer to where resources are used.

22. **Democratization** has three important linked elements: more transparent and open government, easier access to information (e.g., in planning processes, environmental assessment, and state-of-environment reporting), and community participation in planning and

management. All three aspects of governance are being promoted in most GMS countries through laws and policies, with the expanding role for communities and NGOs in information sharing and decision making. Community participation, comanagement, and equity in natural resource use are urgent and rapidly evolving issues confronting biodiversity managers in the region, who have more experience in relatively nonparticipatory and centralized approaches.

23. **Institutional innovation.** Over the past decade, GMS countries have gone through one or two waves of major reform to the organizations managing natural resources and protected areas, most recently in Thailand and Viet Nam, which have new amalgamated ministries of natural resources and environment. Agencies have been set up at central and local levels bringing a reorientation and consolidation of staffing and budgets to focus on new priorities and approaches to natural resource management with the intention of fostering greater cross-sector integration.

24. **Reinforcing the rule of law.** The institutional change has been accompanied by major law reform. New laws are being introduced to

- clarify tenure and land-use rights;
- delegate authority for detailed planning and investment decisions;
- introduce integrated planning for natural resource regions, such as landscapes/river basins (in Thailand and Viet Nam);
- develop systems to resolve conflicts in land and natural resource use; and
- provide national legal frameworks for protected areas.

25. This is a critical period for biodiversity policy development in all GMS countries. Needed are devolved management authority and structures; greater emphasis on outreach and involvement of local communities and governments; and more clarity in management controls, procedures, and rights under the law. A key challenge has been enforcement of new legal regimes, particularly in controlling the use of protected areas and the regions surrounding them.

H. The Biodiversity Conservation Corridors Initiative

1. The vision

26. GMS leaders will consider the BCI at the Second GMS Summit in July 2005, with the following vision:

> By 2015, GMS countries will have established priority biodiversity conservation landscapes and corridors for maintaining the quality of ecosystems, ensuring sustainable use of shared natural resources, and improving the livelihoods of people.

2. Goal, purpose, and components

27. The goal is that by 2015, GMS countries will endeavor to maintain and improve the cover, condition, and biodiversity of forestlands and associated ecosystems in priority biodiversity conservation landscapes and corridors.

28. The purpose of the BCI is to establish sustainable management regimes for restoring ecological connectivity and integrity in a selected set of important biodiversity areas. This is to be combined with provision of natural resource goods and services that contribute to improving livelihoods of peoples living in and around the biodiversity conservation corridors, and protect

the physical infrastructure investments deemed central to economic integration and sustainable development in the subregion.

29. The BCI has five components:

(i) Poverty alleviation through sustainable use of natural resources and development of livelihoods
(ii) Clear definition of optimal land uses and harmonized land management regimes
(iii) Restoration and maintenance of ecosystem connectivity
(iv) Capacity building in local communities and government staff
(v) Sustainable financing mechanisms and structures integrated with government planning and budgeting procedures

30. The orientation of activities under each of the five BCI components is as follows:

(i) **Poverty reduction.** Livelihood improvement interventions (for example, access to secure land tenure, community forestry, local primary processing of wood and nonwood products, ecological farming, and ecotourism) will be undertaken and market linkages promoted. This entails the provision of incentives, funding, legal rights, and technical assistance in the corridor sustainable-use areas.

(ii) **Integrated land-use planning and management.** A spatial land-use planning process will be undertaken using a participatory consultative framework. Local communities will benefit (in kind and cash) from their involvement in the required socioeconomic and biodiversity surveys. This process includes the definition and delineation of environmentally sensitive areas, identification of appropriate safeguards, sustainable-use and development zones, and preparation of an overview spatial map of current land-use patterns. Agreements will be reached with stakeholders on appropriate land-use and conservation arrangements.

(iii) **Restored ecosystem connectivity.** Ecosystem restoration to establish connectivity and sustainable-use areas will be undertaken and evaluated. Planting of native species may be required to create corridors between some core areas. Areas for sustainable use and protection will need to be delineated in the buffer or transition zones around protected areas.

(iv) **Capacity building.** Institutional and human capacity for managing biodiversity corridors will be improved. Local people and officials need capacity building for biodiversity conservation planning, management, and monitoring.

(v) **Sustainable financing.** Sustainable financing for the BCI will be identified and secured. This component entails identifying and setting up funding mechanisms that will allow conservation areas as well as corridors to function in the long term. Apart from recurrent budget support from the GMS countries, areas that will be explored include transfer payments for environmental services such as watershed protection, Clean Development Mechanism (CDM), and setting up endowments and contributions from tourism and other natural resource-use tax regimes.

3. BCI phases

31. The BCI objectives will be achieved in three phases over 10 years, the period between GMS Summits from 2005 to 2014.

32. In Phase I (2005–2008), five GMS countries (Cambodia, Lao PDR, PRC, Thailand, and Viet Nam) will carry out pilot projects in a selected site in each of the GMS biodiversity corridor landscapes. ADB will work with the United Nations Environment Programme (UNEP) for implementing BCI activities in Myanmar. Each pilot site includes a complex of protected areas and several proposed linking biodiversity corridors. In addition, enabling activities will be carried out at national and regional levels. Plans will be prepared for expansion and scaling-up of the pilot project and for additional corridors in the nine GMS biodiversity landscapes to receive BCI support in Phase II.

33. In Phase II (2009–2011), the methodology and framework of action developed in Phase I will be scaled-up in the pilot sites and applied to other corridors in the nine GMS biodiversity landscapes.

34. In Phase III (2012–2014), all nine GMS biodiversity landscapes and the priority corridors in them will be consolidated in terms of investments, and an evaluation of the approach and achievements will be carried out to determine whether the vision has been achieved.

4. Phase I pilot projects

35. Phase 1 of the BCI includes five pilot projects and national and regional activities. The pilot sites were selected by governments with support from NGO partners based on the following six criteria:

(i) Falling within GMS economic corridors or their zones of influence
(ii) Reducing ecosystem fragmentation by linking two or more protected areas
(iii) Areas of international biodiversity importance
(iv) Areas of high poverty incidence and population growth
(v) Being of a transboundary nature
(vi) Having institutional capacity on the ground that is active in implementing one or more projects

36. In Cambodia, the Cardamom and Elephant Mountains landscape down to the southwestern coast is the location of the pilot site. Koh Kong Province and specific corridors within it linking 11 protected areas provide the focus of the project. Preparatory activities will be undertaken at a second site in Mondulkiri Province in northeastern Cambodia bordering Viet Nam, with detailed planning for Phase II.

37. In the Lao PDR, the pilot project is to develop a sustainable-use corridor linking Dong Houa Sao (DHS) national biodiversity conservation area (NBCA) in Champasak Province to the Xe Pian NBCA, which covers both Champasak and Attapeau provinces in the Tri-Border Forests landscape.

38. In the PRC, the pilot site is the Xishuangbanna Tropical Rainforest landscape in southern Yunnan Province, stretching down to the border of the Lao PDR. Yunnan Province and eight corridors in the Prefecture of Xishuangbanna are the focus of the project, including the

linkage of nine existing and proposed protected areas. Preparatory activities will be undertaken in PRC and Myanmar transboundary areas, particularly for the Mangao-Mengsong corridor.

39. In Thailand, the pilot site is in the Tenasserim Range in western Thailand, between the Western Forest Complex (WEFCOM) and the Kaeng Krachan Forest Complex. To the west of both complexes is a forested area in Myanmar. The project will develop a corridor for protection and sustainable use linking the two existing forest complexes with their 19 contiguous protected areas. BCI partners, such as UNEP, will facilitate the undertaking of transboundary cooperation activities between Thailand and Myanmar.

40. In Viet Nam, the pilot project is in Quang Nam Province of the Central Annamites and bordering areas of Thua Thien Hue and Kon Tum provinces and Sekong and Attapeu in the Lao PDR. Activities in the three BCI phases are designed in sequence to tackle the areas of highest risk first without losing sight of the long-term goal of establishing a continuous forest landscape throughout the Central Annamite Mountains. Phase 1 focuses on the links between three nature reserves, Ngoc Linh, Song Thanh, and Ba Na in Quang Nam Province, and Xe Sap NBCA in the Lao PDR.

I. Partnerships and Sustainable Financing

41. The BCI will promote active collaboration with and between NGO partners already implementing activities in the nine GMS biodiversity conservation landscapes, aimed at bringing about synergy in actions and funding for systematic and coordinated conservation and sustainable use in the corridors. The BCI will promote partnerships between governments and NGOs through the program structure and implementation arrangements.

42. Corporate sponsors will be sought to provide patronage to one or more of the corridors that may have flagship species, or to provide opportunities for carbon trading through the Clean Development Mechanism or transfer payment mechanisms relating to watershed protection. In addition to GMS country contributions, all avenues will be explored to raise funds from public and private sources. In particular, multilateral funding sources (e.g., Global Environment Facility), and multi- and bi-lateral partners will be approached to fund the initiative.

J. Expected Benefits of the Initiative

43. The expected benefits of the proposed BCI over a period of 10 years are as follows:

(i) Securing and improving the livelihood of poor people living in and around forests in remote rural areas in the nine GMS biodiversity corridor landscapes
(ii) Securing watershed protection and carbon sequestration by improving forest cover and the quality and productivity of forest ecosystems
(iii) Establishing land management and governance regimes that provide incentives to manage and maintain natural resources responsibly and sustainably
(iv) Establishing and consolidating a system of payment for environmental services that functions as a basis for sustainable financing of BCI
(v) Availability of trained and competent personnel in state and nonstate sectors employed in the growing conservation and environmental protection sector locally and nationally
(vi) Establishing areas of conservation, ecotourism, sustainable use, and regional cooperation in the region that demonstrate best developmental and conservation practices