

**Cardamoms Biodiversity Conservation Corridors
Cambodia**

Pilot Project Profile (2005–2008)

May 2005

ABBREVIATIONS

ADB	–	Asian Development Bank
BCI	–	Biodiversity Conservation Corridors Initiative
CDC	–	Council for the Development of Cambodia
CEDAC	–	Centre d'Etude et de Developpement Agricole Cambodgien
CI	–	Conservation International
CITES	–	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMWSP	–	Cardamom Mountains Wildlife Sanctuaries Project
DANIDA	–	Danish International Development Assistance
DONRAEDAM	–	Department of Natural Resource Assessment and Environmental Data Management
FA	–	Forest Administration
FFI	–	Fauna and Flora International
GEF	–	Global Environment Facility
GMS	–	Greater Mekong Subregion
IUCN	–	World Conservation Union
MAFF	–	Ministry of Agriculture, Forestry and Fisheries
MEF	–	Ministry of Economy and Finance
MOC	–	Ministry of Commerce
MOE	–	Ministry of Environment
MOP	–	Ministry of Planning
MOT	–	Ministry of Tourism
MRD	–	Ministry of Rural Development
NGO	–	nongovernment organization
NPRS	–	National Poverty Reduction Strategy
NREM	–	natural resource and environmental management
PCU	–	regional program coordination unit
PIU	–	project implementation unit
RCC	–	regional coordination committee
RETA	–	regional technical assistance
SWEC	–	South West Elephant Corridor
TAP	–	technical advisory panel
USAID	–	United States Agency for International Development
USFWS	–	United States Fish and Wildlife Service
WCS	–	Wildlife Conservation Society
WWF	–	World Wide Fund for Nature

NOTE

In this report, "\$" refers to US dollars, unless otherwise noted.

A. Project Context

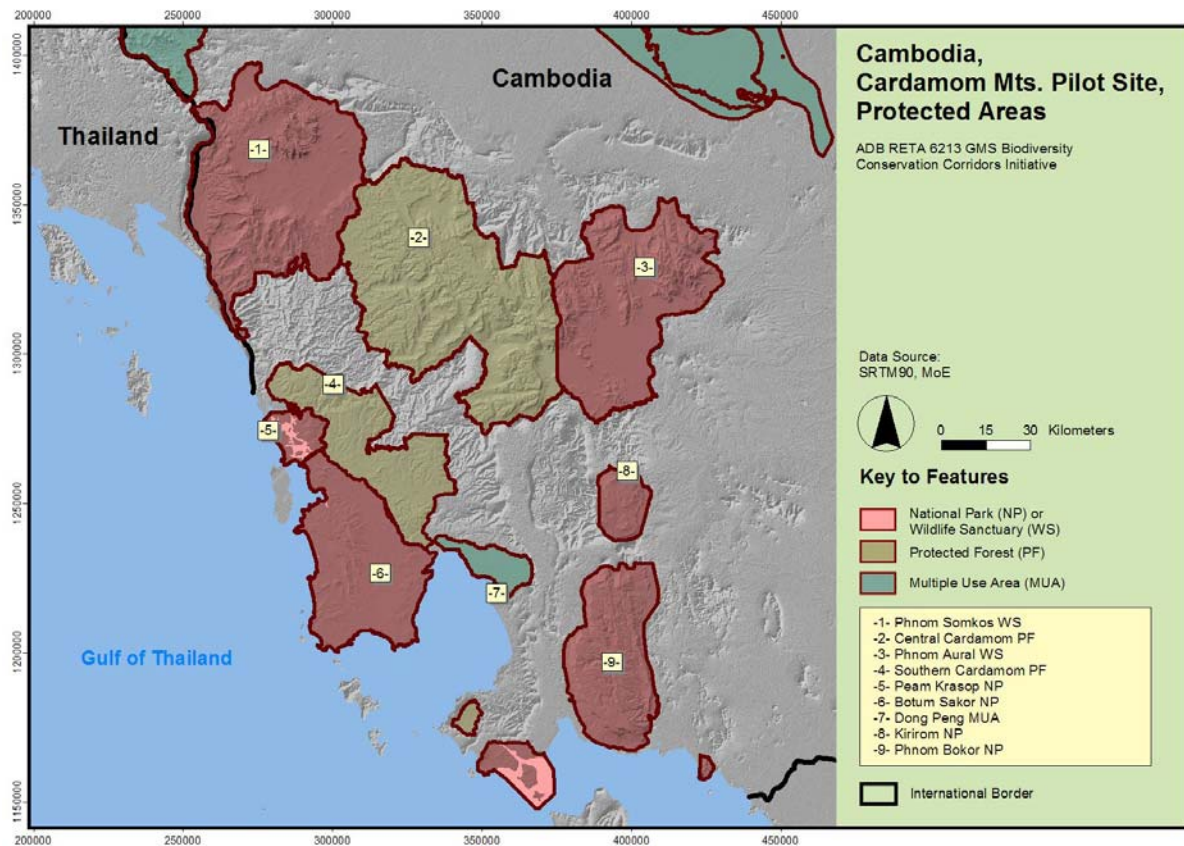
1. Under the Greater Mekong Subregion (GMS) Biodiversity Conservation Corridors Initiative (BCI) currently being implemented as Asian Development Bank (ADB) regional technical assistance (RETA) 6213, biodiversity corridor pilot sites for 2005–2008 in each GMS country are to be selected based on the following criteria:

- (i) Falling within GMS economic corridors or their zone 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 (state and nonstate) capacity on the ground that is currently active in implementing one or more projects

B. Selection and Location of Pilot Sites

2. In Cambodia, the biodiversity conservation corridor pilot sites are located in the Cardamom and Elephant Mountains landscape down to the coast (Map 1). This project profile provides background information on the area and sets out the project objectives, indicative activities, and institutional arrangements. Koh Kong Province and specific corridors in it provide the focus of the project.

Map 1. The Cardamom and Elephant Mountains, showing the existing system of areas under protection

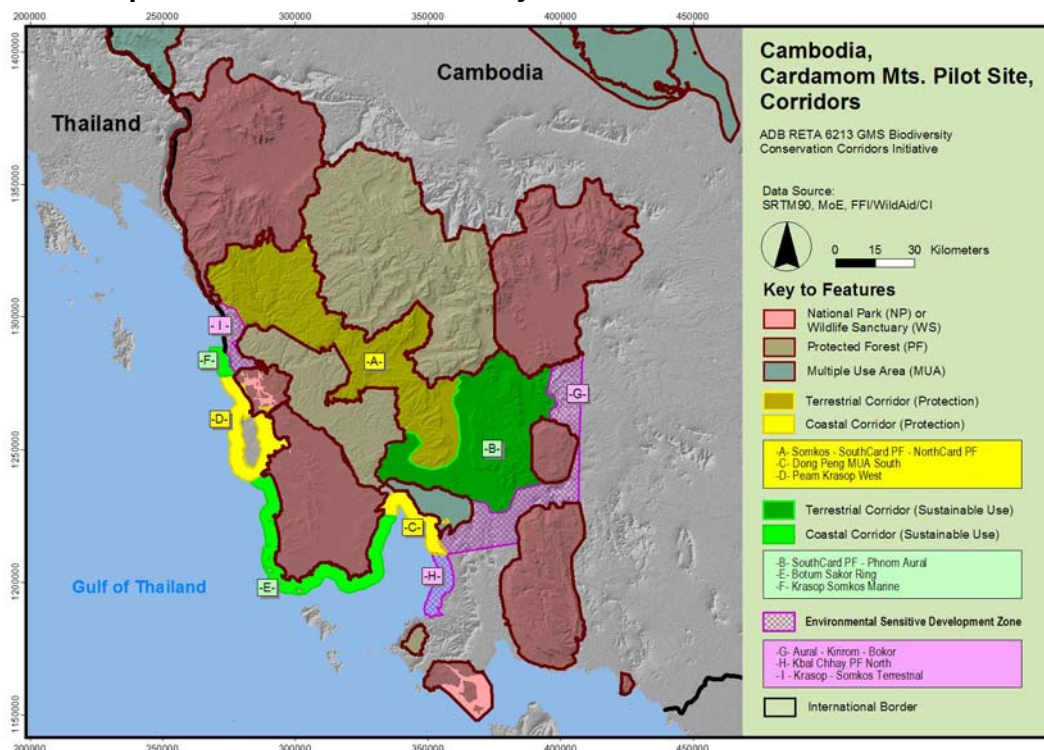


3. Koh Kong Province takes in part of Phnom Samkos Wildlife Sanctuary and the Central Cardamoms Protected Forest in the north, the Coastal Cardamoms Protected Forest and Peam Krasop Wildlife Sanctuary, Botum-Sakor National Park and Dong Peng Multiple Use Area to the south, and parts of Kirirom and Bokor national parks to the east (Map 1). In the face of mounting development challenges, the provincial government has provided strong backing for conservation, supported by the Ministry of Agriculture, Forest, and Fisheries and the Ministry of Environment in partnership with three international conservation organizations with a long-term commitment to the region: Conservation International (CI), Fauna and Flora International (FFI), and WildAid. This combination of commitment and capacity in a region of international biodiversity importance makes it well suited for the focus of the BCI in Cambodia.

4. The pilot project targets three corridors: a corridor of strict protection linking the Central Cardamoms Protected Forest and Phnom Samkos Wildlife Sanctuary with the Southern Cardamoms Protected Forest, with further links along Route 48 to Peam Krasop Wildlife Sanctuary and Dong Peng Multiple Use Area (Map 2). It can be described as the Areng catchment corridor after the main river and watershed running through its center.

5. The other two critical corridors will receive attention on a more modest scale including non-timber forest product survey, sustainable use, and management. One is the mangrove forest or coastal corridor running from Dong Peng to Phnom Samkos, with an initial focus on the coastal system and communities of southeastern Botum-Sakor National Park. Part of the coastal corridor should be under protection. The other is the Aural-Kirirom sustainable-use corridor between Phnom Aural and Kirirom and then from Kirirom to Bokor. The outer boundary of this corridor is the Koh Kong provincial boundary.

Map 2. Cardamoms Biodiversity Corridor Conservation Pilot Site



6. These three corridors are identified for highest priority action according to the pilot site selection criteria. The corridors are

- (i) within the southern GMS economic corridor with links to Thailand;
- (ii) essential as a focus of effort to reduce ecosystem fragmentation;
- (iii) areas of international biodiversity importance;
- (iv) areas of high poverty incidence, increasing poor populations, and ethnic minorities with traditional ties to the Cardamoms; and
- (v) areas with high levels of provincial, national, and international commitment and well-established conservation and livelihoods programs as a foundation for sustainability of the pilot project activities.

7. While the pilot project will have a sharp geographic and community focus, the provincial authorities have identified the need to keep in view the broader development planning landscape. The pilot project will reinforce some province-wide planning activities that involve supporting the Government in a study of the socioeconomic, biodiversity, and natural resources situation as a contribution to a provincial land-use planning process and clearer definition of development and conservation opportunities and zones. The pilot corridors themselves will need to be more precisely defined. Some areas will need to be strictly protected because of their importance for biodiversity and ecosystem service values. Other areas can sustain various intensities of use and development.

8. Initially, the project will concentrate on the unique Khmer Daeum minority community of the Areng Valley, where there is an urgent need for reducing poverty and improving food security in ways that are compatible with the outstanding biological values of the Areng Catchment Corridor. Other communities within the project area will be the focus of socioeconomic studies and land-use planning. Current livelihood work and village-level planning with these communities involve Ministry of Environment (MOE) and Ministry of Agriculture, Forests, and Fisheries (MAFF) with WildAid, CI, and FFI. This demonstration work needs to be strengthened and expanded according to the capacity of the state and nonstate implementers. Mutual learning and exchange between target villages should be promoted. Implementation arrangements involving the main partners are defined in Section 10.

C. Description of Pilot Project Corridors

9. The three corridors each connect existing areas under various forms of protection to contribute to one of the largest blocks of contiguous forest in Southeast Asia. The natural systems of the corridors contribute in significant ways to the maintenance of habitat and watershed functions, water supply, protection against flooding and other natural disasters, and to the productivity of fisheries and agricultural systems. The sizes of the corridors' components are shown in Table 1.

10. **Areng catchment corridor.** This corridor is part of the most significant Indochina habitat for the tiger (*Panthera tigris*) and Asian elephant (*Elephas maximus*) and most significant global habitat for the Siamese crocodile (*Crocodylus siamensis*). It is one of the very few sites in Asia with white-winged ducks, black-necked storks, and Asian arowana. It includes hilly evergreen forest, unique upland and lowland freshwater swamp forest, with some semi-evergreen and dry forest, and will require strict protection. The rugged western portion of this corridor (Mondulsei District) contains pristine evergreen forest that receives up to 5 meters of rain per year, and must be safeguarded as a critical watershed for the Koh Kong City development zone. The elephants in the area move through a diversity of habitats down to Botum-Sakor. Further

D. Biodiversity Values

13. The Cardamom and Elephant Mountain landscape is rich in habitat types and species diversity. The most species-rich ecosystems in Cambodia are the lowland wet evergreen forests. Montane forests are less diverse but support more endemic species.

14. Within the Cardamom Mountain system, there are also distinct biogeographical landscapes containing important protected area complexes. The Central Cardamom Protected Forests connects the Phnom Samkos Wildlife Sanctuary (333,800 hectares) and Phnom Aural Wildlife Sanctuary (253,800 hectares), forming one of Asia's largest protected area complexes. The Coastal and Southern Cardamoms and the Botum-Sakor Peninsula comprise another important biogeographical landscape. Most of the area is covered with either tall evergreen forest on sandy-clay soils, or short evergreen forest on white sand soils. The former has the highest tree diversity of any forest type in Cambodia. There are also sizeable areas of freshwater and estuarine swamps, melaleuca woodland, and both natural and fire-regulated grassland.

15. The Cardamom Mountains (*sensu stricto*) cover only about 6% of Cambodia's land area, but support almost all of the nation's known species of mammals and amphibians, and well over half of the known resident birds and reptiles. The Cardamoms host over half of Cambodia's known 2,300 species of plants. About 230 of these species are endemic to Cambodia. More than 100 are from the Cardamom forests. The Cardamom Mountains and adjoining corridors contain significant populations of at least 59 globally threatened species (Table 2), and are crucial to the conservation of these species at an international level. The elephant population appears to remain highest in the regions and is thought to be one of the largest in Indochina, and the forests have been recognized as a Level I tiger conservation unit. Other important species in the region include the Asiatic wild dog, gaur, pileated gibbon, Eld's deer, Siamese crocodile, elongated tortoise, spiny mountain frog, chestnut-headed partridge, Cambodian laughing thrush, silver oriole, great hornbill, lesser adjutant stork, Asian arowana, green peafowl, eaglewood and Siamese cycad.

Table 2. Globally threatened species of the Cardamom Mountains Complex

	# total species known in Greater Cardamoms	# species evaluated by IUCN						Total	% of total species	% of evaluated species
			CR	EN	VU	LR/nt	DD			
Mammals	97	90	0	4	14	5	3	26	26.80	28.89
Birds	322	322	0	2	5	11	0	18	5.59	5.59
Reptiles	88	13	2	3	6	1	0	12	13.64	92.31
Amphibians	44	41	0	0	1	2	2	5	11.36	12.20
Angiosperms	?	?	8	12	2	1	1	24	-	-
Gymnosperms	?	?	0	0	2	0	0	2	-	-
Total			10	21	28	20	6	85	-	-

Note: Does not include marine species, fish, or lower taxonomic groups.

16. The Cardamom Mountains with its 1,870,300 hectares of dense forest cover, intricate network of rivers, coastal wetlands, and mangrove forests is also the key watershed for the western section of Cambodia, providing water supply, climate regulation, and abundant fisheries for hundreds of thousands of people. The Coastal Cardamoms are the only source of water to the Bay of Koh Kong (inside the Gulf of Thailand) and Bay of Dong Peng (outside the Gulf).

1. Protected areas and protected forests

17. Koh Kong Province includes 10 protected areas in whole or in part.

18. **Phnom Samkos and Phnom Aural Wildlife Sanctuaries.** The Phnom Samkos Wildlife Sanctuary (333,800 hectares) and Phnom Aural Wildlife Sanctuary (PAWS; 253,800 hectares) have similar ecosystem profiles, consisting of lowland dry dipterocarp forest, lowland dry evergreen forest, gallery forest (along rivers), bamboo forest, lower and upper hill evergreen forest, extensive pine forest, and some marshes and grassland. They contain the highest forests in Cambodia and support many unique plant and animal communities. The hot springs of PAWS are very rare, perhaps unique in Cambodia.

19. **Botum-Sakor National Park.** The Botum-Sakor National Park (176,900 hectares) was established in 1993, but little is known about its fauna or flora, apart from general information gleaned from satellite images. Images in 1988/89 indicated that 87% of the area was in a natural or semi-natural state, with a large expanse of dense evergreen forest and significant areas of mangroves, dunes, and aquatic plant formations.

20. **Kirirom National Park.** Kirirom National Park (282,000 hectares) was established in 1993. The park is largely covered by semi-evergreen forest, with drier deciduous forest at lower elevations and an extensive area of pine forest on a central plateau at 700 m. The park now contains many old logging tracks and a paved road leading to the park headquarters. It contains the reservoir for the Kirirom First Hydropower Rehabilitation Project completed in 2002.

21. **Bokor National Park.** Bokor National Park (140,000 hectares) is dominated by evergreen forests in the south and southwest and semi-evergreen green forests in the northeast. The forests are relatively intact apart from northern areas of the park, which were heavily logged. The Kamchay hydropower scheme located in the southeast of the park is planned to meet the energy demands for Kampot, Sihanoukville, and the Phnom Penh economic corridor, and is expected to be operational in 2008.

22. **Peam Krasop Wildlife Sanctuary.** Peam Krasop Wildlife Sanctuary is 26,000 hectares of coastal wetland, including mangrove and melaleuca forests.

23. **Central Cardamoms Protected Forest.** The Central Cardamom Protected Forests connects the Phnom Samkos and Phnom Aural wildlife sanctuaries, forming one of Southeast Asia's largest protected area complexes. This landscape contains large areas of three of the most threatened ecosystems in the region: lowland evergreen forest, riparian forests, and wetlands. Despite extensive logging, most of the forest still retains complete canopy closure, reducing fire risk and promoting natural regeneration.

24. **Southern Cardamoms Protected Forest.** The Southern Cardamoms Protected Forest covers 144,275 hectares. Vegetation types are a combination of dry evergreen forest, melaleuca woodland, and grassland. It connects the Botum-Sakor National Park to the Talam village community and Dong Peng Multiple Use Area. This area was delineated as a protected forest by MAFF in August 2004.

25. In addition, there are the Dong Peng Multiple Use Area managed by MOE, and Kiri Sakor District Marine Protected Area managed by the Department of Fisheries.

E. Threats

26. Forest clearing and subsequent land encroachment is likely to increase with the improvement of National Road 48 linking Thailand to Phnom Penh and Viet Nam. Land along the road will have better access and greater real estate value.

27. Illegal logging remains a serious problem in some areas involving increasing settlement and land speculation, despite the cancellation of all commercial logging concessions. The moratorium, coupled with road construction within the protected area, has led to an intensification of illegal logging in Phnom Aural Wildlife Sanctuary. Fragmentation of the connecting corridor between Bokor and Kirirom National Parks was due to illegal logging outside and inside the parks during the late 1990s, and has been further exacerbated by road construction.

28. Burning of dry dipterocarp forest is often associated with bush meat hunting and cattle grazing and to give access to resin trees. Repeated burning is a widespread problem leading to permanent ecosystem degradation.

29. Tiger and elephant killings are conducted by armed groups of organized hunters that sell their wildlife products through cross border trade. Other species targeted for trade include pangolins, bears, crocodiles, tortoises, and turtles. Villagers practicing subsistence poaching on an unsustainable level is also a concern.

30. The southern slopes of the Cardamoms are vulnerable to commercial hunting. There are numerous points of entry from the coastal areas and the forest is more accessible to hunters than in the Central Cardamoms, where steep slopes discourage intensive hunting.

31. The proper planning, zoning, and environmental assessment of transport and energy infrastructure development pose the greatest challenges to the national and provincial government in the southwest region.

F. Demographic Profile

32. Cambodia has a population of some 13 million people of predominantly Mon-Khmer ethnolinguistic origin. Koh Kong province, which encompasses the Southern Cardamoms area and part of the Central Cardamoms, consists of 8 districts divided into 31 communes and 131 villages. The provincial population is 126,595 with a population density of 10.5 persons per square kilometer (km²).

33. The population is not distributed evenly due to varying accessibility, historical settlement patterns, and resource availability. Thmar Bang District of Koh Kong has the lowest population density at 1.35 persons/km² (in contrast, Kampong Bay District of Kampong Province has a population density of 637 persons/km²). The population in some areas, such as the Phnom Aural Wildlife Sanctuary, has more than doubled in the past few years as a result of immigration from lowland areas in eastern Cambodia and the creation of a military base inside the sanctuary. However, some settlements in this region have been abandoned since the Pol Pot period.

34. Relative to the national average, Koh Kong Province has medium poverty incidence with pockets of high poverty, including communities living within protected areas and protected forests. Thmar Bang District, which falls within the Route 48 corridor, has the highest levels of

poverty in the province. The Cardamom Mountains is home to about 5,000 culturally diverse indigenous people, many of whom have forest-based livelihoods. The *Khmer Daeum* (original Khmer) are physically distinct and some of the older people speak different languages and dialects. These groups are called the *Sa'och*, *Samre*, or *Por*. Their cultural identity is fading rapidly, as many indigenous communities have become displaced or diluted by lowland Khmer migrations.

35. Agriculture is the mainstay of the Koh Kong economy with the vast majority of families relying on subsistence, rainfed rice cultivation. Fisheries, logging, and hunting are the other main sources of livelihood. Many communities in the region are heavily dependent on nontimber forest products for their subsistence throughout the year. Fishing communities are located in the mangrove forests at the southeast tip of Botum-Sakor and along the western coast of the Peam Krasop Wildlife Sanctuary. Livelihood assessments have highlighted the prevailing food insecurity in the region, which is only mitigated by the extensive availability of forest products.

G. Ongoing Projects

36. There are several important project activities underway in the Cardamom Mountains, initiated by the Government of Cambodia with support of donors and nongovernment organizations (NGOs). MOE; MAFF; Ministry of Land Management, Urban Planning and Construction; and Seila are the national agencies involved in conservation and development activities throughout the Cardamoms. CI, FFI, WildAid, and Cat Action Treasury are the main international conservation NGOs in this region. In much of the region, approaches adopted by the NGOs include consultations and cooperation with the relevant provincial governments. Project activities are listed below.

1. National and regional projects

37. **ADB Project R1: Bangkok-Phnom Penh-Ho Chi Minh City-Vung Tau Road Project.** The project will improve the international road connection linking Bangkok, Phnom Penh, Ho Chi Minh City, and Vung Tau. Proposed improvement options range from a simple overlay, to widening and reconstruction, to the construction of new road segments. Inevitably, this will lead to increased development and pressure on the region's forests.

38. **National Protected Area Review.** Part of the Biodiversity and Protected Area Management Project funded by World Bank and the Government of Cambodia since 2000, the national protected area review component is being implemented through 2005.

39. **NREM Mainstreaming Strategy.** In 2002, the Seila Task Force completed the formulation of a natural resource and environmental management (NREM) mainstreaming strategy in collaboration with nine concerned ministries, with technical support financed by the Danish International Development Assistance (DANIDA). The strategy is focused on promoting and developing NREM and the sustainable use of natural resources to improve rural livelihoods at the subnational level through the structures, systems, and principles associated with the deconcentration and decentralization reforms. In 2004, commune-based NREM and land management were established in three new provinces—Koh Kong, Sihanoukville, and Kep—and coverage was expanded in the three pilot provinces of Kratie, Pursat, and Siem Reap.

40. **CITES MIKE Programme.** In 2004, the Forest Administration's Wildlife Protection Office was identified as the lead Cambodian Government agency for implementing the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) monitoring of

illegal killing of elephants (MIKE) program in Cambodia. One of the two national MIKE sites covers the Cardamom Mountains complex, with the main emphasis on the Southern Cardamoms Protected Forest and the proposed Areng Catchment Corridor.

41. **Cambodian Crocodile Conservation Programme.** Implemented by FFI and the Forestry Administration, this national project has a special emphasis on the Central and Southern Cardamom Mountains, where most of the world's critically endangered Siamese crocodiles remain. Within this area, the project includes community-based initiatives that link livelihood assistance with crocodile protection and habitat preservation.

2. Coastal and Southern Cardamoms

42. **South West Elephant Corridor (SWEC) Program.** Since April 2002, WildAid and the Forestry Administration have implemented the SWEC program for the protection of the Southern Cardamoms. In October 2003, WildAid launched the first pilot site of the Community Agriculture Development Project, supported by grants from the United States Agency for International Development (USAID) and DANIDA. In the first year, the pilot project provided agricultural assistance for 120 families and aims to include 400 families by 2007. The project provides agriculture inputs, training, and microcredit in addition to facilitating the delivery of social services.

43. **Batagur Project.** Implemented by the Wildlife Conservation Society and Department of Fisheries, this project aims to conserve the critically endangered royal turtles upstream from Sre Ambel.

3. Central Cardamoms

44. **Cardamom Mountains Wildlife Sanctuaries Project (CMWSP).** This is a four-year project (2003–2006) aimed at ensuring long-term conservation of some of mainland Southeast Asia's most important forests and their biodiversity. The project is focused on two protected areas in the Cardamom Mountains Range in southwestern Cambodia: Phnom Samkos Wildlife Sanctuary and Phnom Aural Wildlife Sanctuary. CMWSP is a collaboration between MOE and FFI with involvement of a wide range of governmental and nongovernment agencies from the environment, land-use, and development sectors. Shared responsibility and enhanced national ownership are seen as essential components of capacity development within the project. The project is funded by the Global Environment Facility (GEF), United Nations Development Programme, European Union, and others.

45. **Cardamom Conservation Program.** Implemented by CI Cambodia in partnership with the Forestry Administration, this project was initiated with GEF funding. Project activities are ongoing and focus on the conservation of biodiversity and forests in the Central Cardamoms Protected Forest, as well as buffer zones, such as Thma Bang and Areng Valley. The CI project now has three components: (i) law enforcement; (ii) community engagement, and (iii) biological research and monitoring. Donors include GEF (completed), the United Nations Foundation, USAID, United States Fish and Wildlife Service (USFWS), Save the Tiger Fund, DANIDA, and Disney Foundation, among others. CI is committed to continuing its support to this program.

46. **Cambodia Tiger Conservation Project: Community Wildlife Ranger Program.** Donors include the USFWS, Save the Tiger Fund, and the Taiwan Council of Agriculture. Implementer is the Forestry Administration in collaboration with Cat Action Treasury.

H. Policy and Legal Framework

47. The overarching policy framework that shape the forestry and biodiversity sectors includes (i) the Royal Decree on Protected Areas (1993); (ii) the Law on Environmental Protection and Natural Resource Management (1996), which sets up the basic provision for environmental protection and preservation of natural resources, including important provisions on the requirement for environment impact assessments; (iii) the Land Law (2001) that sets out a comprehensive system of land classification and land ownership rights; (iv) the Forestry Law (2002), which outlines the general rules and regulations related to administration and management of the Permanent Forest Estate; (v) the sub-decree on the establishment and management of Protection Forests (2002); (vi) the Community Forestry Sub-decree (2004); (vii) Community Fisheries Sub-decree (in preparation); (viii) the forthcoming Protected Areas Law (approval stage); and (ix) the Sub-decree on Indigenous Land Titling (in preparation).

48. In addition there are cross-cutting, macro-level national strategies and frameworks including the National Poverty Reduction Strategy (NPRS) 2003–2005 and the Rectangular Strategy for National Development (2004).

49. Several plans have been formulated in the biodiversity and forestry sectors that have specific implications for the proposed conservation corridors including

- National Environmental Action Plan (1998–2002)
- National Biodiversity Strategy and Action Plan (2002)
- National Wetlands Action Plan (under review)

I. Proposal

1. Goal of project

50. The goal of the pilot project is to restore and maintain the ecological integrity of the Cardamom and Elephant Range landscape through improved management of core areas for biodiversity conservation and watershed protection and development of sustainable-use corridors that connect existing protected areas.

2. Objectives

51. The project has five objectives:

- (i) Poverty reduction 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 government staff and local communities
- (v) Sustainable financing mechanism and structures integrated with government planning and budgeting procedures

3. Indicative pilot project activities

a. Poverty Reduction

High-priority activities

- (i) Improve sustainable livelihood development through intensive agricultural inputs and appropriate technology support and demonstration
- (ii) Community-based natural resource management and protected area comanagement

Supplementary activities

- (iii) Community-based forest enrichment with high-value natural resources
- (iv) Establishment of market links
- (v) Support for the establishment of forestry communities, protected area communities, and fisheries communities
- (vi) Provide community support for small-scale infrastructure (e.g., water wells, school improvement, ceremonial houses)
- (vii) Establish village development and poverty reduction funds
- (viii) Promote exchange and learning between community development activities in the southwestern region
- (ix) Establish village/commune advocacy groups to support villagers or local communities regarding their stewardship and rights over resources

b. Land-use Planning and Management

High-priority activities

- (i) Support provincial authorities in preparing a detailed land-use and zoning plan for Koh Kong Province including socioeconomic studies, future development options, and strategic environmental assessments
- (ii) Support the process of village-level planning, participatory demarcation, the issue of land titles, and delineation of forest/conservation corridor areas from village areas

Supplementary activities

- (iii) Review land-use planning and land allocation already undertaken
- (iv) Conduct landscape-level analysis of existing and proposed developments (in particular industry, roads, dams, and other infrastructure projects), trade patterns, and production and investment
- (v) As part of the land-use planning process, conduct a feasibility study into tourism development and design pilot activities for the next phase of the project
- (vi) Continue with participatory land-use planning and land allocation exercise
- (vii) Formulate and secure approval for policy and legal regulatory framework for corridors
- (viii) Update land cover data and classification

c. Restoring Ecosystem Connectivity

High-priority activities

- (i) Promote landscape connectivity in key fragmentation points through targeted afforestation/enrichment planting or natural regeneration
- (ii) Reduce impacts at key landscape fragmentation points through strengthened enforcement
- (iii) Undertake a study of forest trees and plants of economic value that have potential to contribute to local livelihoods
- (iv) Monitor impact of interventions and evaluate corridor establishment

Supplementary activities

- (v) Carry out or update surveys with regard to maintaining viable populations of globally threatened plant and animal species, especially large mammals
- (vi) Limit the impact of large infrastructure developments in strategically identified ecologically important locations (e.g., realignment of roads to avoid protected areas)
- (vii) Based on the results of monitoring and evaluation, prepare an action plan to upscale corridor implementation as appropriate

d. Capacity Building**High-priority activities**

- (i) Strengthen the capacity of district officials and key provincial and national-level staff involved in corridor and protected areas management and raise public awareness
- (ii) Support efforts to strengthen the capacity of villagers to manage and protect forest and natural resources in the corridors and move toward effective community-based natural resource management (with comanagement of some parts of protected areas and protected forests)
- (iii) Strengthen institutional capacity for corridor conservation

e. Sustainable Financing**High-priority activity**

- (i) Design the establishment of a Cardamom fund and funds for specific protected areas (principally through NGO contributions with proposed BCI regional contribution)

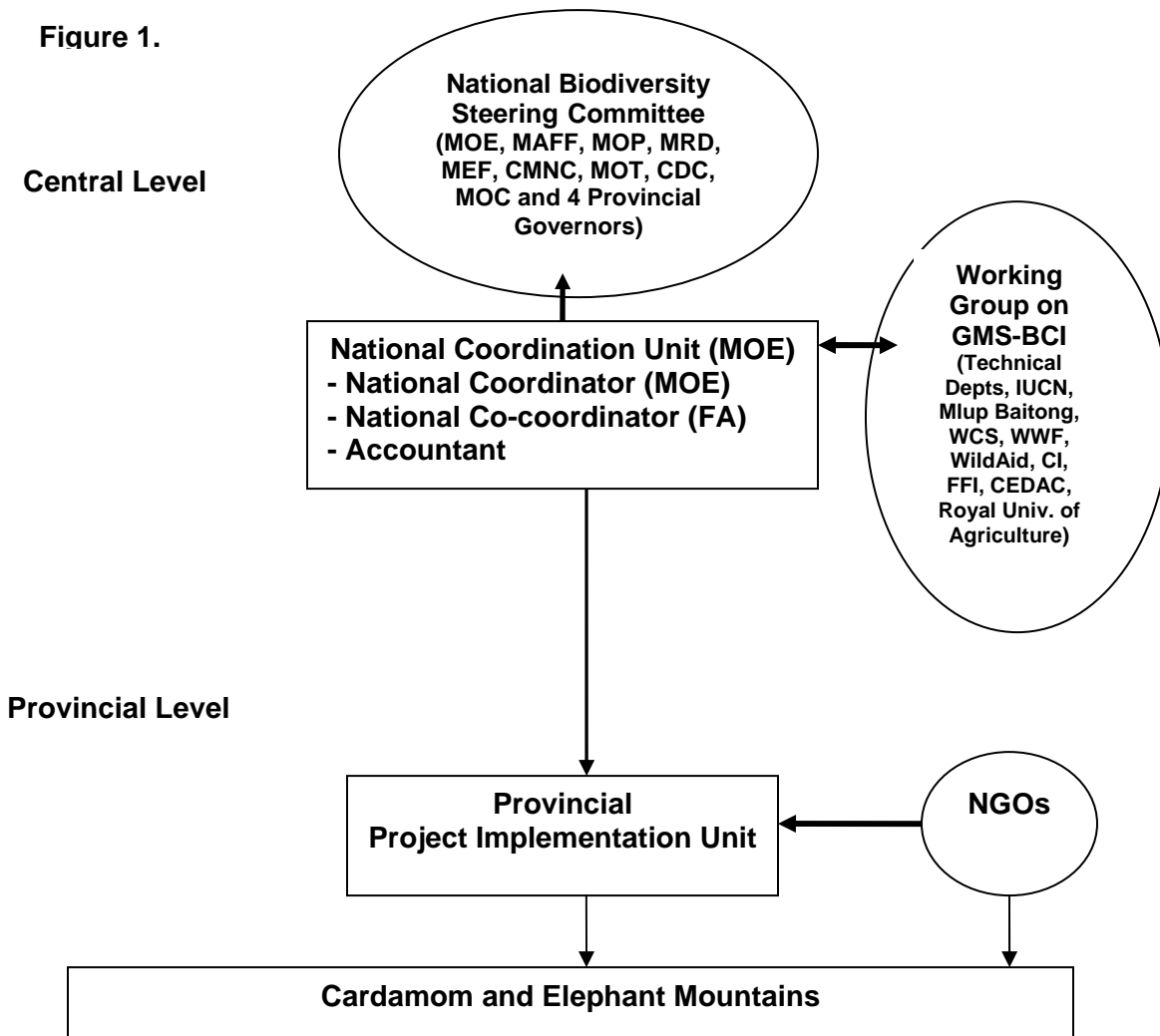
Supplementary activity

- (ii) Pilot the establishment of a regional fund and funds for specific protected areas and protected forests

J. Implementation Arrangements**1. Project management and coordination**

52. The proposed institutional setup for implementing the GMS BCI project in 2005–2008 is as follows (Figure 1):

Figure 1.



BCI = Biodiversity Conservation Corridors Initiative; CDC = Council for the Development of Cambodia; CEDAC = Centre d'Etude et de Developpement Agricole Cambodgien; CI = Conservation International; FA = Forest Administration; FFI = Fauna and Flora International; GMS = Greater Mekong Subregion; IUCN = World Conservation Union; MAFF = Ministry of Agriculture, Forestry and Fisheries; MEF = Ministry of Economy and Finance; MOC = Ministry of Commerce; MOE = Ministry of Environment; MOP = Ministry of Planning; MOT = Ministry of Tourism; MRD = Ministry of Rural Development; NGO = nongovernment organization; WCS = Wildlife Conservation Society; WWF = World Wide Fund for Nature.

53. The national biodiversity steering committee will also be the steering committee for the pilot project. It is chaired by the Senior Minister for Environment and Vice-Chair is the Secretary of State for Agriculture, Forestry, and Fisheries, with the following functions:

- (i) Meet at least once a year
- (ii) Approve work plans and budgets
- (iii) Review project progress and provide guidance
- (iv) Secure collaboration of relevant ministries
- (v) Review proposals for additional project sites and seek government approval

54. The national coordination unit will be headed jointly by national coordinators from MOE and FA, with the following functions:

- (i) Establish the central coordination unit in MOE
- (ii) Assist the provincial level to establish project implementation units in the pilot site
- (iii) Draw up annual work plans and budgets and seek approval from national steering committee
- (iv) Maintain project accounts (in US\$ and Riel) and produce financial reports
- (v) Provide funds according to approved budget to provincial project implementation units (PIUs)
- (vi) Recruit staff and contract national consultants and subcontract institutions for database management
- (vii) In collaboration with provincial PIUs, acquire and update the digital database of the project area
- (viii) Monitor and review progress on a half-yearly basis
- (ix) Hold annual review workshop with all stakeholders
- (x) Submit progress and financial reports to the national steering committee on a half-yearly basis
- (xi) Organize field visits as and when required
- (xii) Conduct study tours and organize training; document evaluations and lessons learned
- (xiii) Raise awareness about the project and need for conservation in institutions and among public at large
- (xiv) Review existing technical guidelines and standardize for all corridor work areas

55. The national working group on biodiversity will consist of representatives from Department of Nature Conservation and Protection, FA, DONRAEDAM, DOPLA, IUCN, Mlup Baitong, WCS, WWF, WildAid, CI, FFI, and Royal University of Agriculture. The chair will rotate between government and nongovernment agencies every six months. The working group has the following functions:

- (i) Meet half yearly or as and when required
- (ii) Review existing technical guidelines and standards and propose improvements
- (iii) Provide advisory support to the national coordination unit
- (iv) Screen or organize technical screening of project proposals
- (v) Discuss and recommend complementary activities in support of the project
- (vi) Promote biodiversity conservation activities at national level and feed experience into regional institutions
- (vii) Document lessons learned from other projects for dissemination

56. The project implementation unit (PIU) at provincial level will be headed by provincial departments of environment and forest administration. The PIU functions are as follows:

- (i) Establish the PIU, comprising a chief, project administrative assistant, and support staff
- (ii) Prepare annual work plans and budgets and submit to the national coordination unit for approval
- (iii) Maintain accounts and prepare financial statements
- (iv) Request consultant support from the national coordination unit
- (v) Liaise with other relevant departments at the provincial level
- (vi) Implement project activities in collaboration with NGOs
- (vii) Inform the governor's office about project progress

- (viii) Write progress reports and submit on a half-yearly basis to the national coordination unit

2. Project implementation partners

57. Building on existing efforts and investments on the ground, site-specific activities in the Cardamoms will be carried out by MOE, with technical support from existing nonstate partners, such as WildAid (Coastal and Southern Cardamoms), CI (Central Cardamoms), FFI (Phnom Samkos and Phnom Aural wildlife sanctuaries, crocodile, and elephants), and with collaboration from all three NGOs, in province-wide activities. In addition, local or national NGOs, such as Mlup Baitong and CEDAC, will be included in implementation as the need arises.

58. It is imperative that the government institutions (MOE and FA) at the provincial level, the governor's office in Koh Kong, and three international NGOs mentioned above, draw up a joint strategy for project implementation, stipulating clear responsibilities in the form of an integrated plan of operations (see section below).

59. As part of this collaborative arrangement, consultative mechanisms will be developed between the Cardamom Mountain's Conservation Project steering committee, the national working group for south-west elephant corridor (SWEC) projects and the BCI national coordinating unit. At the provincial level, consultative arrangements will be developed between the provincial steering committee for SWEC and the provincial PIU.

3. Operationalizing pilot site activities

60. Following adoption of the resolution on the BCI program at the GMS Summit in Kunming in July 2005, ADB will formulate a RETA, detailing the program for Phase I (2005–2008) for securing funding commitments. The RETA paper will be sent to the GMS countries for concurrence.

61. On receiving concurrence from GMS governments and securing program funding, ADB, in its capacity as the GMS secretariat, will call on the coordinators of the Working Group on the Environment to send official nominations of GMS country representatives, who will sit in the BCI regional coordination committee with the BCI national coordinators. ADB will also follow standard procedures to put in place the regional program coordination unit (PCU).

62. Once the regional PCU is in place, it will request the BCI national coordinators to call on nongovernment collaborative partners and provincial authorities to work out a draft plan of operation for the first year of implementation. At this stage, any institutions (government and nongovernment) that have regional or cross-cutting activity proposals can submit these to the regional PCU. The PCU will also activate a technical advisory panel (TAP) with terms of reference laid down in the RETA paper and work with the TAP secretariat to have the regional or cross-cutting activity proposals screened prior to the inception workshop for Phase I.

63. Each BCI national coordinator will submit to the regional PCU a draft plan of operations that must contain (i) work plan (activities with timeline, responsibility, and milestones); (ii) budget with costs related to activities; (iii) monitoring plan with indicators of expected achievements by end of year one and those by year three; and (iv) a logframe for the pilot site project. In detailing the work plan, the national coordinator and implementation team will select priority activities from the indicative list suggested in the pilot project profiles. In particular, the plan of operations should indicate under which functions the land-use and corridor configuration is being

undertaken (i) protection—where focal species are sensitive to habitat change; (ii) low-intensity land use—where focal species can withstand some disturbance; (iii) mitigation—where ecological processes should be conserved (e.g., watershed or hydrology: ensure steeper slopes, riparian zones forested); or (iv) land-use patterns and configuration for dispersal ability (continuous vs. patchy/stepping stone habitats). A provincial land-use and zoning exercise at the provincial level will be a priority activity in the work plan.

64. If necessary, the BCI national coordinators can request the regional PCU to provide technical assistance in drafting the plan of operations.

65. The plan of operations will be the main instrument of implementation and reporting project progress and any external supervision, monitoring or field visits by ADB, development partners, or government will be guided by the plan of operations.

66. The BCI national coordinator's office will also enter into a standard memorandum of understanding (MoU) with the NGO(s) for that particular project site, which can later be extended to other sites if mutually agreed. The text of the MoU will be supplied by the regional PCU and will form the basis for project site implementation responsibilities of the parties concerned.

67. The regional PCU will circulate the draft plan of operations from the BCI national coordinators to the TAP to get feedback. The TAP will scrutinize the draft plan for plausibility, realistic targets, and approaches as per details contained in the pilot site proposals. Any adjustments or modifications of the pilot site proposals suggested in the draft plan of operations will also be scrutinized.

68. Representatives from implementing (government, nongovernment, and potential national consultant) institutions in the GMS will be invited to participate in the inception workshop to finalize the work plans and budgets. Once these have been finalized, the first regional coordination committee (RCC) will be convened, which will deliberate over submissions and give its approvals and decisions. Probably, the first RCC could be held back-to-back with the inception workshop. The BCI national coordinators will attend the RCC meetings as observers. The proceeding of the RCC will be recorded by the regional PCU and distributed to all RCC participants. Once approvals are given, disbursement instructions will be issued by the regional PCU as per minutes of the RCC meeting and funds will be provided to the BCI national coordinator office and the NGOs as per approved plan of operations. For regional activities, funds will be disbursed directly by the regional PCU to the implementers (these could be international/national consultants or institutions).

69. On receiving funds from the BCI program, the national coordinators will convene a meeting of the national steering committee as well as hold a program orientation workshop to launch pilot site activities. Six-monthly progress reports will be collected and collated by the national coordinators and submitted to the regional PCU. Standard reporting formats and deadlines will be provided by the regional PCU.