GREATER MEKONG SUBREGION
ENVIRONMENT
OPERATIONS CENTER

# CORE ENVIRONMENT PROGRAM AND BIODIVERSITY CONSERVATION CORRIDORS INITIATIVE 2006–2012

# PHASE I COMPLETION REPORT

**Vision**
A poverty-free and ecologically rich
Greater Mekong Subregion (GMS)

The Core Environment Program and
Biodiversity Conservation Corridors
Initiative (CEP-BCI)
CEP-BCI Phase I Completion Report
2006–2012



RETA 6289

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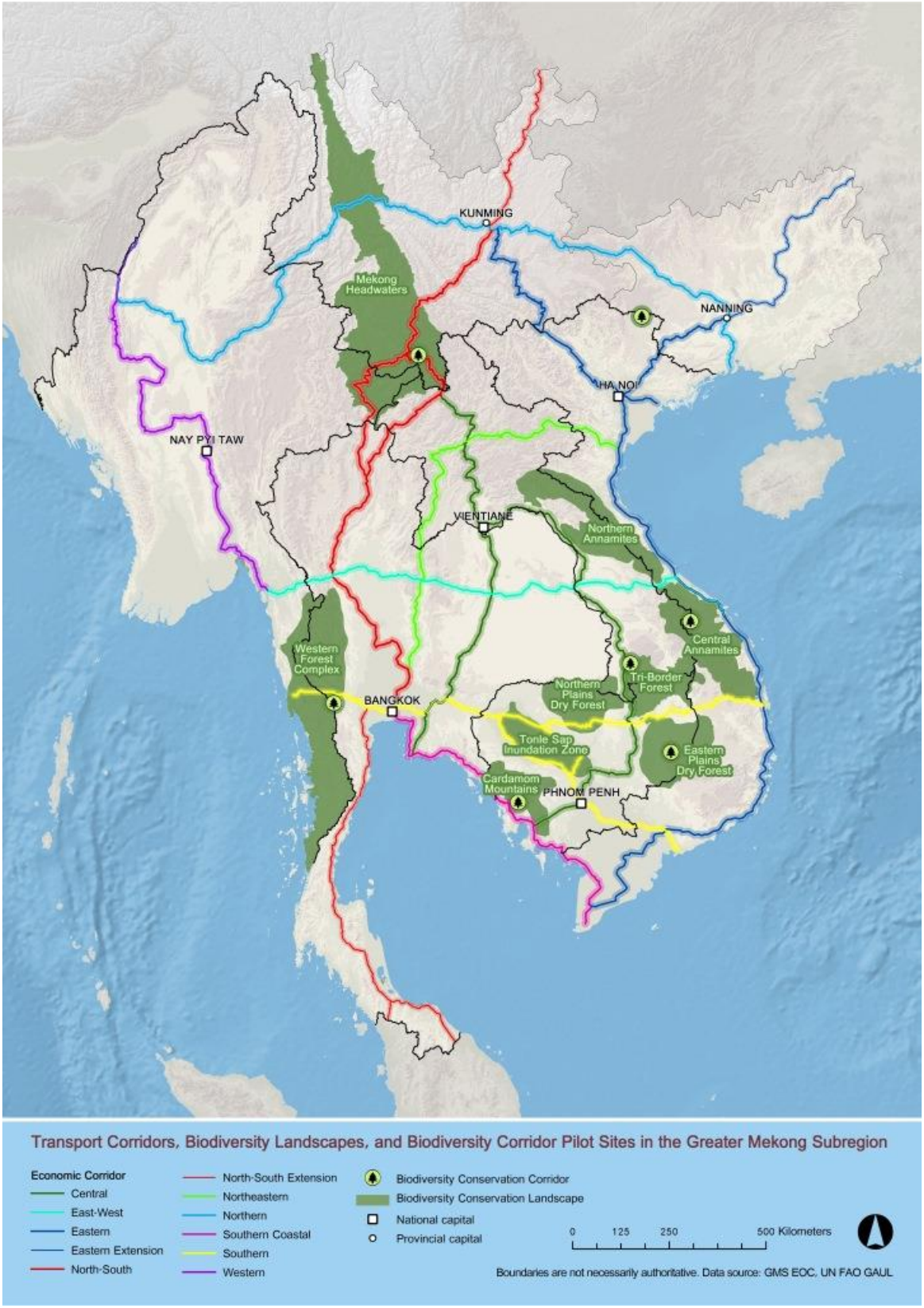


## ABBREVIATIONS

| | | |
|---|---|---|
| ADB | – | Asian Development Bank |
| BCC | – | Biodiversity Conservation Corridors Investment Program |
| BCI | – | Biodiversity Conservation Corridors Initiative |
| CEP | – | Core Environment Program |
| CEP-BCI | – | Core Environment Program and Biodiversity Conservation Corridors Initiative |
| CMS | – | Consultant Management System |
| CNTC | – | Carbon Neutral Transport Corridors |
| $CO_2$ | – | carbon dioxide |
| CSR | – | corporate social responsibility |
| DMF | – | design and monitoring framework |
| DPSIR | – | Development Pressure-State-Impact-Response |
| EMM | – | Environment Ministers Meeting |
| EMSP | – | Environmental Management Support Project |
| EOC | – | Environment Operations Center |
| EPA | – | environmental performance assessment |
| EPI | – | Environmental Performance Index |
| EWEC | – | east-west economic corridor |
| FAO | – | Food and Agriculture Organization of the United Nations |
| GDP | – | gross domestic product |
| GEF | – | Global Environment Facility |
| GIS | – | geographic information system |
| GHG | – | greenhouse gas |
| GMS | – | Greater Mekong Subregion |
| ha | – | hectare |
| INGO | – | international nongovernment organization |
| IUCN | – | International Union for Conservation of Nature |
| km | – | kilometer |
| Lao PDR | – | Lao People's Democratic Republic |
| LOA | – | Letter of Agreement |
| M&E | – | monitoring and evaluation |
| MDG | – | Millennium Development Goal |
| NGO | – | nongovernment organization |
| NSEC | – | north-south economic corridor |
| NSU | – | National Support Unit |
| NTFP | – | non-timber forest product |
| OED | – | ADB Operations Evaluation Division |
| PDP VII | – | 7th Power Development Plan of Viet Nam |
| PES | – | payment for ecosystem services |
| PFD | – | Program Framework Document |
| PPP | – | Phnom Penh Plan (for capacity development) |
| PRC | – | People's Republic of China |
| REDD+ | – | reducing emissions from deforestation and forest degradation |
| RETA | – | regional technical assistance |
| RPTCC | – | Regional Power Trade Coordination Committee |
| SEA | – | strategic environment assessment |
| SEC | – | southern economic corridor |
| Sida | – | Swedish International Development Cooperation Agency |
| SMCA | – | spatial multi-criteria analysis |
| TA | – | technical assistance |
| UNEP | – | United Nations Environment Program |
| USAID | – | United States Agency for International Development |
| VDF | – | Village Development Fund |
| WGE | – | GMS Working Group on Environment |
| WWF | – | World Wide Fund for Nature |

In this report, '$' refers to US dollars.

# EXECUTIVE SUMMARY

Over the past two decades, the Asian Development Bank (ADB) has boosted subregional economic cooperation in the Greater Mekong Subregion (GMS) through its GMS Program. During this period, the GMS has become one of the world's fastest-growing regions. Unfortunately, this impressive economic growth has resulted in a growing number of environmental problems that threaten the sustainable development of the region. In response, ADB initiated technical and financial support to address these environmental issues on a case-by-case basis. In 2006, ADB consolidated these activities under the Core Environment Program and Biodiversity Conservation Corridors Initiative (CEP-BCI).

The CEP-BCI is led by the GMS Working Group on Environment (WGE), comprising the environment ministries of the six GMS countries, with support from the ADB-administered Environment Operations Centre (EOC), acting as the WGE's Secretariat. The program envisions a poverty-free and ecologically rich GMS, achieved by sound environmental management across all GMS development sectors. With total funding of just under $30 million, CEP-BCI consisted of five components: (i) environmental assessment of economic sector strategies and corridors; (ii) biodiversity conservation and BCI implementation; (iii) environmental performance assessments (EPA) and sustainable development planning; (iv) development and institutionalization of GMS capacity for environmental management; and (v) program development, delivery, and sustainable financing. In response to demand from GMS countries, the program added 'Climate Change' as a cross-cutting issue in 2008.

CEP-BCI Phase I (2006–2012) was the pilot phase of an intended 15-year program to be followed by a scaling-up phase and a consolidation phase. As a pilot, it was not only successful in establishing a firm foundation for the scaling-up, but also achieved a number of significant outcomes under each of its five components.

**Strategic Environmental Assessment (SEA)** has become a valuable planning tool in GMS countries. The program has enabled SEA in a number of key sectors, and requests for further assistance under CEP-BCI Phase II (which began June 2012) demonstrate its increasing acceptance across the subregion. However, national and sector policy frameworks still lack mandatory and voluntary provisions to apply SEA and enforce its findings in strategic planning processes. In support of institutionalizing SEA in national and regional planning processes, the EOC is increasingly recognized as a SEA knowledge hub.

**The Biodiversity Conservation Corridors Initiative (BCI)** had three major achievements in Phase I. First, the integrated conservation and development approach that BCI promoted proved a sound instrument for linking development to conservation in a manner that benefits both the environment and the poorest families in conservation corridor areas. Second, the multi-agency landscape approach proved an effective alternative to traditional sector-management approaches. Third, BCI increased acceptance of the corridor approach as an instrument for environmental management and sustainable development, evidenced by major investment in the scheme. ADB invested $69 million in loan and grant agreements for the Biodiversity Conservation Corridors (BCC) project in Viet Nam, Lao PDR, and Cambodia; and other major donors, including the World Bank and KfW, have also signalled their support of the corridor approach.

Important achievements of the **Environmental Performance Assessment (EPA)** component include the establishment and acceptance of EPA methods in GMS countries, enhanced EPA technical capacity, improved data management systems, and the increasing institutionalization of EPA systems. GMS governments increasingly recognize the importance of improving their capacity to benchmark environmental performance and monitor ecological conditions in order to achieve national environmental targets. However, the utility of traditional EPA static report-based

systems is limited, and CEP-BCI moved toward a more dynamic environmental reporting system at the end of Phase I and will continue its development under Phase II (2012–2016).

In addition to being a component in its own right, **Capacity Development** is also the core of the entire program, with the majority of activities across all components of the CEP-BCI having strong capacity building objectives. Over 7,000 people received some form of benefit from the program, showing demonstrable capacity development across all economic development sectors, and developing more uniform capacity across GMS countries. However, organizational and institutional capacity development made less progress than technical capacity advancements did, and the program will devote further efforts to this under Phase II. Also in the next phase, the program will emphasize opportunities for country-to-country capacity development, in order to enhance and harmonize subregional capacity.

From 2009 to 2011, the EOC, in consultation with GMS countries, donors, and other stakeholders, led the Phase II design process, culminating in the endorsement of the CEP-BCI *Program Framework Document 2012–2016* (PFD) by the Environment Ministers Meeting (EMM) in July 2011 and the subsequent approval of the regional technical assistance (RETA) paper by the ADB Board.

As well as overall program development, the fifth component focused on strategies for **Sustainable Financing** to conserve biodiversity, maintain ecosystem services, and improve environmental quality in the GMS. The program explored a range of financing options, including reducing emissions from deforestation and forest degradation (REDD+), related measures for sustainable forest management, payment for ecosystem services (PES), community-based ecotourism, and public-private-partnerships. Financing successes included securing $69 million in ADB loans and grants for the BCC project and $23.1 million from the governments of Finland and Sweden for CEP-BCI Phase II (2012–2016).

Significant achievements in **Climate Change** mitigation under CEP-BCI included: (i) increased awareness of the impacts of climate change at regional, national and local levels, (ii) the development of strategic partnerships for regional climate change cooperation, and (iii) strengthened risk and vulnerability assessment capacity at provincial and district levels in BCI sites.

Most importantly, climate change considerations are now mainstreamed across all CEP-BCI components.

From its origins in a few ad hoc regional environmental projects, CEP-BCI is now an integral part of the GMS Program's Strategic Framework for economic cooperation. The region has embraced it as a platform for multi-country and multi-sector engagement on key environmental issues facing the region. GMS governments strongly supported the program, recognizing that it is helping them move towards a poverty-free and ecologically rich Greater Mekong Subregion.

CEP-BCI evolved and matured during its six-year implementation period. Various GMS economic development sectors grew to recognize and respect the WGE as a key partner in sustainable development. Over time, the program aligned better with the GMS Program's Strategic Framework, and the new framework drafted in 2011 placed a high priority on the environment. CEP-BCI improved its integration with ADB country programs, and toward the end of Phase I was influencing a number of those programs' decisions. The EOC took on a true secretariat role, providing knowledge and technical expertise. At the country level, program management responsibility changed from the hands of non-government development partners to those of national and provincial government agencies. Finally, the program developed links with numerous

development partners and established cooperation networks across the GMS and the global environmental community.

The **Environment Operations Center (EOC)** became an effective institution for CEP-BCI management over the life of the program. Its overall management support costs were 8.57% of total program expenditure, which compares favorably with fees charged by project management consultants or overheads set by international nongovernment organizations (NGOs). As an independent non-profit institution affiliated directly with CEP-BCI, the EOC acted in the best interests of the program and established strong institutional relationships with the WGE, GMS countries, implementing partners and other stakeholders. It provided the continuity necessary for long-term sustainability, and is now a valuable source of institutional memory as the program moves into Phase II. The EOC is now well-established as a knowledge hub for the transfer of environmental data, knowledge and expertise across the region.

ADB, Sida and the Government of Finland each conducted an independent evaluation of the program during Phase I. Results of the evaluations were mostly positive and consistent. CEP-BCI used the results to guide mid-course corrections during the program and to design Phase II. The evaluations concluded that the goals, scope and approach of CEP-BCI were relevant, technically-sound and well-aligned with regional needs, and that the program's focus on the GMS economic corridors enabled the assessment of actual impacts on landscapes and livelihoods and provided a platform for addressing cross-sector challenges. However, the evaluations also identified a number of weaknesses to address.

Keeping environmental issues at the forefront of economic development sectors remained a challenge, and there was a clear need to strengthen links between the WGE, other GMS sectors, and ADB country programs. There was agreement across all evaluations that the design and monitoring framework (DMF) was inadequate for tracking progress in a quantifiable manner. Although climate change was dealt with well, the other cross-cutting issues of poverty, gender and ethnicity were not adequately addressed. In addition, the evaluations suggested that the program had not responded effectively to certain emerging development pressures, particularly mining and land concessions.

The evaluations emphasized the importance of **Capacity Development** across all components and sectors, but concluded that CEP-BCI had focused on technical capacity at the expense of institutional and organizational capacity building. In particular, the program had missed key opportunities to influence policy, promote institutional development, and strengthen inter-country exchange. The evaluations identified the need to improve communication and knowledge flow between EOC and GMS countries to support capacity development.

Despite the achievements of CEP-BCI Phase I, significant challenges remain. Although GMS governments are increasingly aware and concerned about the role of the environment in sustainable economic development, many weaknesses need to be addressed in Phase II. CEP-BCI has incorporated lessons learned from Phase I (2006–2012) in the design of Phase II, with particular focus on:

(i) strengthening environmental mainstreaming,
(ii) emphasizing development of policy and legal frameworks,
(iii) building institutional and organizational capacity for environmental planning and management,
(iv) strengthening monitoring and evaluation (M&E) and reporting systems,
(v) addressing newly-emerging development pressures, and
(vi) strengthening the regionalization of the program through knowledge and information exchange.

# 1 BACKGROUND

Since 1992, with support from the Asian Development Bank (ADB), the Greater Mekong Subregion (GMS) has pursued a program of regional cooperation to promote economic and social development through enhanced infrastructure connectivity and cross-border collaboration on trade and investment. In 2002, the ADB consolidated the GMS Program under a comprehensive Strategic Framework, contributing to the emergence of the GMS as one of the world's fastest-growing regions during the past two decades.

The six GMS countries (Cambodia, the People's Republic of China (PRC),[1] Lao People's Democratic Republic (Lao PDR), Myanmar, Thailand, and Viet Nam) boast a culturally, ethnically, and linguistically rich and diverse heritage. They have a total population of about 332 million (2010) spread over 2.6 million square kilometers, comparable to the population of the United States but with only one quarter of the area and a small fraction of the wealth. The GMS is also one of the world's richest biodiversity hotspots, comprising several Global 200 ecoregions.[2] It contains many globally important species that are threatened with extinction.

Unfortunately, rapid economic growth has caused significant negative impacts on both natural and social systems, including environmental degradation, loss of environmental services and reduced ecosystem connectivity. Furthermore, the benefits from economic development have not 'trickled down' as anticipated. The rural poor, particularly ethnic and upland communities whose livelihoods are highly dependent on the local environment, have faced declining natural stocks and ongoing insecurity over land tenure and resource access rights. The rapid, unchecked growth and inadequate governance systems have threatened ecosystem productivity, return on economic investments in key sectors, and the long-term sustainable development of the subregion.

Major development pressures have emerged in the GMS over the past two decades. Large increases in Foreign Direct Investment, mainly supporting hydropower development, plantation agriculture, and mining, have prompted governments to issue extensive land concessions that have had grave environmental impacts. Development of infrastructure such as roads, urban settlements, large-scale tourism centers, hydropower facilities and transmission networks have significantly changed the patterns of land use in rural landscapes. Rapid economic growth has increased demand for commodities, food, timber, forest products and water. These pressures are intensified by natural and economic shocks: climate change has impacted agriculture and the environment, global economic events have destabilized markets, and energy and commodity price fluctuations have threatened food security. These pressures have created major challenges for forest protection, biodiversity conservation and rural livelihoods in the GMS.

In response, between 1995 and 2005, ADB provided support to address emerging environmental concerns in the GMS through 15 Regional Technical Assistance Projects (RETAs).[3] These initial RETAs were largely in response to specific problems as they arose, and were not part of a coherent subregional strategy. During this period, GMS governments began to recognize the importance of the environment in sustainable development, and environmental support grew from 17% to 32% of total GMS technical assistance (TA) project funding.[4] In 2005, the GMS Summit of Leaders endorsed the Core Environment Program and Biodiversity Conservation Corridors

[1] Specifically, Yunnan Province and Guangxi Zhuang Autonomous Region.
[2] Natural ecological communities with shared species, dynamics and environmental conditions.
[3] ADB. 2008. Greater Mekong Subregion Environment Program Evaluation Study., Manila.
[4] Master list provided by the GMS Secretariat (June 2008) .

Initiative (CEP-BCI) to consolidate environmental management activities within a single integrated program under the direction of the GMS Working Group on the Environment (WGE).

# 2 CEP-BCI PROGRAM DESCRIPTION

The vision of CEP-BCI is a poverty-free and ecologically rich GMS. To contribute to this vision, CEP-BCI aims to mainstream sound environmental management across the GMS Program sectors of energy, transport, agriculture, and tourism in an effort to enhance their development impact and sustainability. CEP-BCI is geographically anchored in the GMS 'Economic Corridors' (see Figure 1). These corridors, based on major roads between the countries, are the focus of GMS Program plans and investments, particularly for infrastructure development relating to trade, tourism, transport and other areas of economic potential.[5]

CEP-BCI is a unique initiative. It supports the environment ministries of the six GMS countries to collaborate with each other and engage other sectors to improve the GMS environment. CEP-BCI brings a holistic approach to mainstreaming environmental management in the GMS by engaging in planning support at both strategic and project levels, environmental monitoring, and the testing of innovative environmental initiatives.

The pilot phase of CEP-BCI was intended to run from 2006 to 2009, but in response to the priorities of the GMS Program, in early 2008 CEP-BCI increased its emphasis on climate change and capacity building for environmentally-sound development. This amendment provided additional funding to extend the pilot phase until 2011. In response to GMS country needs, the program added climate change as a cross-cutting issue to all its components. Following a no-cost extension granted in 2011, CEP-BCI Phase I implementation ended in May 2012. The longer-term intention for the program was that the initial pilot phase would be followed by a second five-year 'scaling-up' phase (2012–2016), which is now operational, and then by a final 'consolidation' phase (2017–2022).

ADB administered Phase I of CEP-BCI under a Regional Technical Assistance project (RETA 6289). The RETA was co-financed by ADB; the Governments of Finland, Sweden, and the Netherlands; and the PRC Poverty Reduction Fund. The WGE directed the program and oversaw the Environment Operations Center (EOC) in Bangkok, which ADB established in 2006 to provide secretariat and implementation support for the program.

## 2.1 Objectives, Impact and Outcome

CEP-BCI had three strategic objectives:

(i) to improve GMS environmental management, governance and institutional development,

(ii) to establish, sustainably manage, and finance priority biodiversity conservation corridors and associated high-value landscapes, and

(iii) to institutionalize decision support systems for environmental management and sustainable development planning, including Environmental Performance Assessment (EPA).

[5] The three major economic corridors are the North-South, East-West, and Southern economic corridors. For more on the corridors and the overall GMS Program, visit http://www.gms-eoc.org/resources/greater-mekong-subregion-economic-cooperation-program-overview

The intended impact and outcome of CEP-BCI were as follows:

- **Impact:** Prosperity in the GMS, based on equity and sustainable development.
- **Outcome:** Sound environmental management systems and capacity for enhancing the development potential, performance, and impact of the GMS Program.

## 2.2 Program Components and Key Activities

CEP-BCI was structured around five components and one cross-cutting theme, each with a specific output, as follows:

1. Strategic Environmental Assessment (SEA) of sector strategies and corridors.
   Output: Development strategies and investment plans for GMS economic corridors and sectors are environmentally sound, economically efficient, and socially equitable.

2. Biodiversity Conservation Corridors Initiative (BCI).
   Output: Sustainable management regimes for restoring ecological connectivity and integrity established in important transboundary landscapes.

3. Environmental Performance Assessment (EPA) and sustainable development planning.
   Output: EPA systems be established in all GMS countries as monitoring and information tools to mobilize environmental protection and policy interventions.

4. Development of GMS capacity for environmental management.
   Output: Strengthen capacity to mainstream environmental considerations into economic development planning and decision making across the GMS Program.

5. Program development, delivery, and sustainable financing.
   Output: Initiate actions for' scaling- up' and identifying strategies and mechanisms for CEP-BCI financial sustainability.

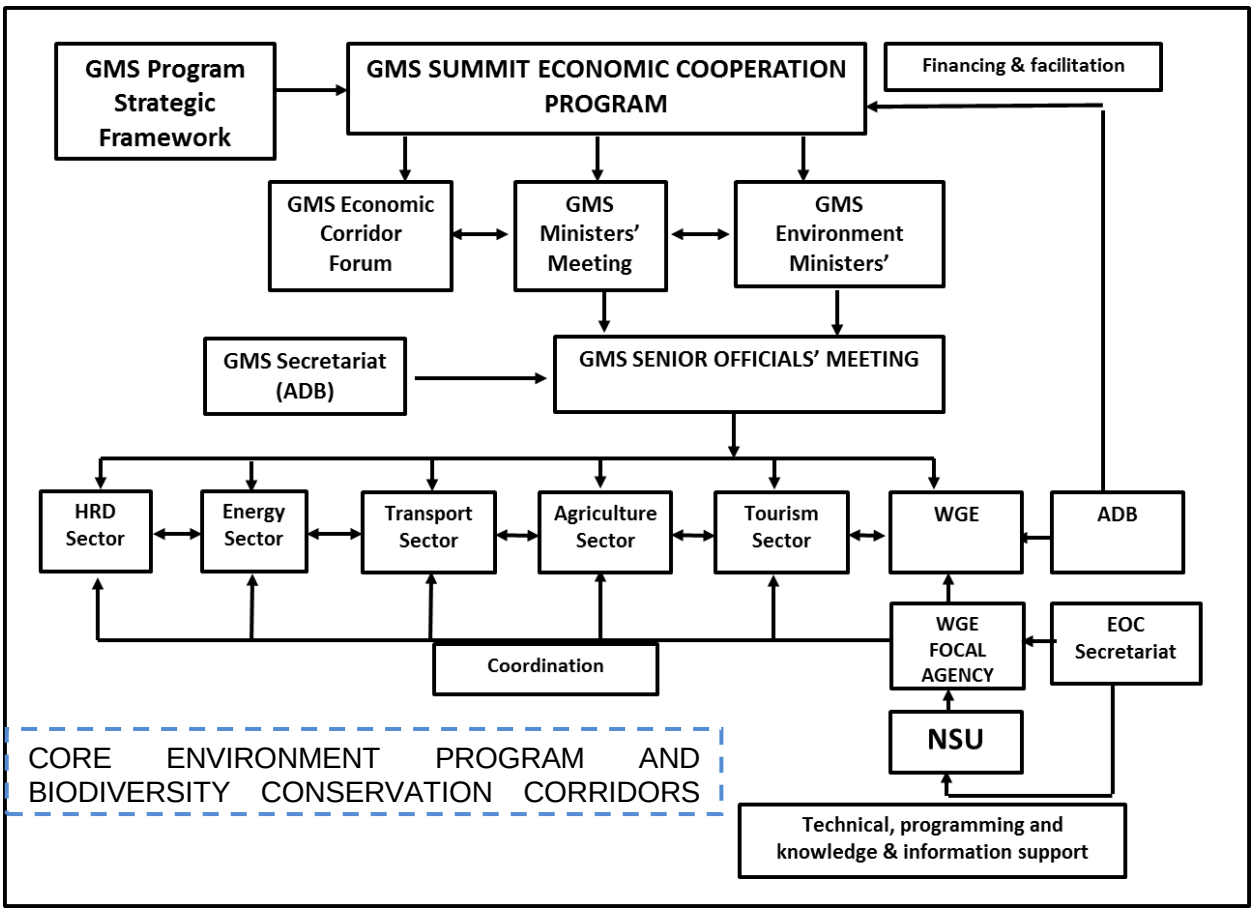
6. Climate change mitigation and adaptation (cross-cutting over all components)
   Output: Climate change considerations are integrated into development processes across the GMS program.

Appendix 1 presents the program's overall design and monitoring framework (DMF).

## 2.3 Organization and Administration

As shown in Figure 2, the WGE directed and coordinated CEP-BCI with support from EOC, and government agencies and partners implemented many aspects of the initiative. CEP-BCI aligned with the GMS Program's Strategic Framework and supported national GMS Secretariats Focal Points to foster multi-sector coordination. National WGE Focal Agencies (under the Environment Ministries) were the points of contact in GMS countries, and toward the end of Phase I, National Support Units (NSUs) assisted the agencies in this role by implementing some national activities and acting as network nodes between the EOC and GMS country focal points. ADB provided technical, financial and administrative support to the program.

**Figure 2: Organizational Structure of the GMS Program and CEP-BCI**




The EOC acts as secretariat to the WGE, assisting with facilitation, coordination and securing financing for CEP-BCI. The EOC provides a knowledge platform and repository for subregional environmental information, and offers technical expertise in environmental planning, monitoring, mapping and skills transfer related to the program.

Letters of Agreement (LOAs) with a range of development partners (see Appendix 2) secured implementation support for many of the program's activities. Under this arrangement, development partners worked to build capacity in national government agencies, civil society and local communities in support of program implementation. As capacity grew, those partners progressively handed over implementation responsibility to national and local institutions.

# 3 RESULTS ACHIEVED

## 3.1 Environmental Assessments of Economic Corridors and Sectors

The component's intended outcome was "development strategies and investment plans for GMS economic corridors and sectors are environmentally sound, economically efficient, and socially equitable." It supported planning methods, in particular SEA and spatial analysis tools, to incorporate environmental and biodiversity considerations into sector strategies and economic corridor plans. The component also supported the development of regional SEA capacity to undertake strategy-level assessments to ensure sustainable development by considering environmental and social aspects early in planning cycles.

SEA is a structured, evidence-based approach that integrates environmental and social considerations into strategic decision making and policy formulation. It provides a framework for setting objectives, generating scenarios, analyzing impacts, and weighing alternatives in a scientifically rigorous and transparent manner, thereby promoting effective decision making and good governance. SEA capacity in the GMS varies from country to country, and even countries with more advanced SEA legislation in place, such as PRC and Viet Nam, face considerable capacity constraints in ensuring legislation is followed.[6]

## Key Achievements

As a result of CEP-BCI, GMS countries are beginning to recognize SEA as a valuable planning tool. The initiative has established SEA capacity at national levels in a number of key sectors, and requests for further assistance under Phase II demonstrate the acceptance of SEA across the subregion. SEA is increasingly regarded as a strategic decision making support tool rather than an environmental safeguard process. However, national and sector policy frameworks still lack mandatory and voluntary provisions to apply SEA and enforce its findings in strategic planning processes. The EOC knowledge hub supports future SEA institutionalization in national and regional planning processes.

As shown in Table 1, CEP-BCI Phase I only partially achieved the original output targets set for the SEA component, largely due to limited capacity for SEA in GMS countries. This meant that the program had to seize opportunities for sector and national engagement as they came, and modify its plans and targets accordingly. Although Phase I did not realize some of the original targets, achievements in alternative SEA-related initiatives more than compensated for this.

**Table 1: Achievement of SEA Component Output Targets**

| Output Targets (TA paper) | Outputs Delivered | Status |
|---|---|---|
| Valuation of natural resource assets in two GMS economic corridors. | Conducted two studies that valued the ecosystem services along GMS corridors and BCI sites, including the Xishuangbanna BCI site (Yunnan, PRC) and Champassak province (Lao PDR). Valuation of natural assets was built in the methodology for most of SEAs conducted under the program. | Achieved |
| Environmental assessment of energy, road, and tourism development strategies. | Completed assessment reports for six strategies/plans including cross-border roads (North-South Economic Corridor), hydropower (Viet Nam), tourism (Cambodia), power development (Viet Nam), cross-border tourism (Golden Quadrangle) and land-use planning (Quang Nam province, Viet Nam). | Achieved |
| Cumulative impact assessments of two sections of GMS economic corridors. | Cumulative Impact Assessments not yet conducted. | Not achieved |

CEP-BCI support for SEA has been instrumental in developing recognition in the region for a more demand-driven approach to environmental assessment, in which the prediction of impacts has a role but is not the sole purpose. Where SEA is still seen as a regulatory and control tool by the national environmental agency, uptake will be difficult in the other development sectors. There

[6] ADB. 2008. Strategic Environmental Assessment in the Greater Mekong Subregion – Status Report. Bangkok.

will also be resistance to its use where it is perceived as an advocacy tool, and this was one of the major reasons for its slow uptake in the energy sector in Lao PDR. The gradually increasing number of requests from GMS countries to undertake SEA in support of energy, tourism, and land use planning processes over the life of the program shows the need to establish national SEA frameworks to guide sustainable development.

SEAs have helped the WGE engage with other development sectors, particularly energy and tourism. However, to be successful, SEA needs an entry point anchored in a well-developed sector development strategy and appropriate legal framework.

The SEA experience has also added value to other components of CEP-BCI. For example, provincial SEAs in Viet Nam and Cambodia provided important baseline information for BCC project investments, helped identify investment opportunities in the conservation corridors, and supported the identification of payment for ecosystem services (PES) opportunities for the sustainable financing component. A regional tourism SEA identified a number of key issues important for the BCI component, including the need for bilateral cooperation on enforcement, capacity building in protected area management, and support for sustainable non-timber forest products (NTFPs) value chain development.

Most of the early SEA work occurred at the national level, where the positive experience promoted acceptance for a number of regional SEAs that followed later in the program, including a regional power trade SEA and the Golden Quadrangle tourism SEA.[7] These regional SEAs generated a number of lessons learned. First, it is extremely challenging to achieve consensus on priority issues when undertaking an SEA involving countries at different levels of development, with differing sector goals and policy priorities. Second, capacity in the GMS countries varies, and implementation of SEA recommendations requires a focus on 'software' development to ensure that sector and environmental agencies have the necessary human resource capacity to implement recommendations. This is extremely important at higher policy levels, and future regional capacity building initiatives should focus on awareness-raising with high-level decision makers. Finally, as legal frameworks vary, further support is needed to ensure country specific policies and planning processes promote quality SEA practice.

SEA-related activities generated valuable information for strategic planning across the region. Sharing the lessons learned from SEAs in Yunnan, PRC and Viet Nam assisted Lao PDR to outline steps for broader SEA application in energy sector planning, and to draft a national SEA decree supported by Finland's Environmental Management Support Project (EMSP). The SEA knowledge hub at the EOC, comprising SEA methods, mapping tools, a database of experts, case studies and so forth is another important outcome of the SEA experience.

## Implementation of SEA Activities

SEA activities under national, subnational and regional levels of CEP-BCI addressed four main themes: (i) SEA capacity and implementation support to the energy sector, (ii) tourism sector SEAs, (iii) support for multi-sector area-based SEAs, and (iv) GMS program level assessments. Table 2 contains a summary of the major activities implemented and their end-of-project status.

[7] The Golden Quadrangle is the region around the Mekong river where the four countries of Lao PDR, Myanmar, PRC and Thailand all meet.

**Table 2: SEA Component Activities**

| Activity | Implementation Sites | Status |
|---|---|---|
| **Energy Sector SEAs** | | |
| SEA capacity development in the energy sector | Viet Nam | Completed |
| SEA support for National Power Development Plan VII | Viet Nam | Completed |
| Capacity Support for an Energy Sector SEA | Lao PDR | Ongoing |
| **Tourism Sector SEAs** | | |
| National Tourism Sector SEA | Cambodia | Completed |
| Regional Tourism SEA for the Golden Quadrangle | Lao PDR, PRC, Thailand | Report in progress |
| **Multi-sector Area-based SEAs** | | |
| Quang Nam Provincial Land Use Planning SEA | Viet Nam | Completed |
| Five provincial macroeconomic assessments | Cambodia, Viet Nam | Completed |
| River Basin SEA on water resource planning | Viet Nam | Ongoing |
| SEA of the North-South Economic Corridor (NSEC) | PRC , Viet Nam, Myanmar, Lao PDR, Thailand | Completed |
| **GMS Program Assessments** | | |
| Environmental assessment of the GMS Program's Strategic Framework | GMS subregion | Completed |

**Energy Sector SEAs**

CEP-BCI supported two SEAs on power development planning in Viet Nam, with the rationale that energy, particularly hydropower, is a major development pressure in the conservation landscapes. Viet Nam's Ministry of Industry and Trade undertook the first SEA with support from the Stockholm Environment Institute, aiming at methodology development and capacity building. The second came from a government request for an SEA to support the development of Viet Nam's national power development plan for 2011–2020 (Master Plan VII). The goal of this SEA was to identify the most effective strategy for Viet Nam to meet future energy demand through economic development, social progress, and sustainable protection of the environment. Findings from the SEA showed that meeting this goal would require a balance between the power generation and transmission system and the consideration of key environmental issues and resulted in re-prioritization of power supply options based on social and environmental considerations.

The experiences of this early SEA work in Viet Nam had a number of positive outcomes in other countries and regionally. Lao PDR's energy sector took notice and requested support for SEA capacity development and assistance to chart out a national SEA decree. Also, the hydropower SEAs in Viet Nam led to CEP-BCI support for the GMS Regional Power Trade Coordination Committee (RPTCC) to apply SEA in power trade planning at the regional level.

**Tourism Sector SEAs**

CEP-BCI worked with Cambodia's Ministry of Tourism and other stakeholder agencies to conduct a national SEA of the tourism sector. The rationale for this activity was that tourism development is an important government priority that could be bolstered by the identification of tourism assets in BCI landscapes. The SEA produced a range of recommendations on how to mitigate the negative environmental impacts of tourism, a number of which the government used in finalizing the Tourism Law of 2008. However, due to the lack of well-established planning processes in the sector, the proposals fell victim to poor follow-up and were not implemented despite the law.

An important outcome of the tourism SEA in Cambodia was a proposal for a regional tourism SEA in the Golden Quadrangle linking Thailand, Lao PDR, and PRC, completed in late 2012. The SEA

identified the key environmental risks posed by tourism in the region, including increased illegal wildlife trade, unsustainable extraction of NTFPs, increased human trafficking, and the spread of communicable and sexually transmitted diseases. The SEA also provided insights into how development pressures impact the natural and cultural resources that form the main tourism assets in the region, and demonstrated the consequences of poorly planned tourism development. The SEA included a regional dissemination workshop identifying 11 projects specifically designed to support implementation of the recommendations of the SEA. These projects include developing of agro-tourism market chains for local livelihoods, strengthening protected area management in Lao PDR, and investigating tourism related PES models. ADB is currently considering feasibility studies for implementation of these projects.

**Multi-Sector, Area-Based SEAs**

The NSEC Strategic Action Plan was the first subject for a subregional, transboundary SEA in the GMS, and the first to influence strategic planning at the corridor level. The SEA engaged stakeholders from key development sectors in PRC's Yunnan Province, Lao PDR and Thailand. The SEA piloted scenario and criteria-based spatial decision support tools to substantiate its recommendations. It identified several environmental and social impacts associated with corridor development. In particular, it forecasted that the construction of roads would significantly contribute to the fragmentation of ecosystems and exacerbate trends of land conversion to plantations of rubber and other commercial crops. The GMS Program used outputs from this SEA in the development of the action plan. Although the assessment generated a final report, it was never published, meaning that the region missed out on an important opportunity to create critical awareness of the achievements and lessons learned.

The Government of Viet Nam engaged a provincial land use planning study, the first application of SEA at the subnational level in the GMS, in Quang Nam Province. The SEA attempted to integrate environmental issues into land use plans, identify weaknesses in the plans, and recommend improvements. Due to time constraints, the SEA methodology was not fully replicated in other BCI provinces, and instead, CEP-BCI conducted macroeconomic assessments using some of the SEA tools in five provinces in its biodiversity conservation landscapes in Viet Nam and Cambodia. These SEAs made extensive use of spatial analysis and modeling tools, which have become an important trademark of the CEP-BCI approach, and which have gained international recognition in a number of peer-reviewed research papers.

Another subnational, area-based application of SEA involved CEP-BCI support to Viet Nam's Ministry of Natural Resources and Environment to apply the SEA framework to Red River Basin planning. This provided a baseline analysis of water resource status and trends in the Red River Basin and identified important lessons for national planning. This work was initiated late in CEP-BCI Phase I and is continuing under Phase II.

Valuation of natural resources were integrated in the methodologies of SEAs, and complemented by additional studies on the valuation of ecosystem studies for BCI sites in Yunnan and Lao PDR. These had strong positive outcomes at the local level and demonstrated the importance of environmental protection to local communities. They also provided additional justification for leveraging ADB investments to scale up biodiversity conservation corridors in Cambodia, Lao PDR and Viet Nam.

**GMS Program Assessments**

The GMS Secretariat commissioned a study of the combined results of the SEAs on the energy, tourism and transport sectors, in order to develop an environmental perspective for the GMS Program's Strategic Framework for 2012–2022. The study identified recommendations to integrate environmental considerations into the energy, tourism and agriculture sectors and the economic corridors. As a result, the overall GMS regional level impact in the new Strategic

Framework included, for the first time, lower greenhouse gas (GHG) emissions and improved biodiversity, in addition to increased growth and reduced poverty. The framework also emphasized the need to balance development and the environment across all sectors.

### Lessons Learned

Despite the progress that SEA has achieved, several challenges remain: (i) SEA is still not widely used to help formulate development policies, plans and programs; (ii) relevant authorities often do not adequately act upon SEA findings and recommendations; (iii) legal frameworks, organizational arrangements, and institutional capacities vary in the GMS and remain inadequate in all countries; (iii) countries such as Cambodia and Lao PDR need additional piloting of SEA to demonstrate its benefits to decision makers; and (iv) experience to date has shown that application of SEA is easier at the national and sub-national levels than at regional levels. In summary, the essential pre-requisites for the successful implementation of SEA are:

(i) Adequate SEA capacity and awareness at all levels.

(ii) Well-developed planning and legal frameworks.

(iii) Good cross-sector participation and dialogue.

(iv) Empirical economic evidence to demonstrate cost-effective alternatives.

(v) An anchor in appropriate government-owned planning processes.

(vi) Appropriate methods and resources to promote the uptake of SEA recommendations.

Based on the above lessons, SEA priorities under Phase II include the following:

(i) Further bolstering of the capacity of GMS sectors and economic corridors to incorporate environmental concerns early in planning processes.

(ii) Strengthening follow-up activities to promote the use of SEA outputs in strategic development planning.

(iii) Building on the Phase I experience to expand the use of SEA and spatial, analytical and other decision support tools at regional, national and subnational levels.

(iv) Improving the environmental performance of sectors and economic corridors by streamlining country safeguard systems.

(v) Providing support to strengthen monitoring and reporting systems.

## 3.2 Biodiversity Conservation Corridors Initiative

The BCI component's intended outcome was that "Sustainable management regimes for restoring ecological connectivity and integrity established in important transboundary landscapes." The GMS is one of the world's richest biodiversity hotspots, containing several unique and globally important habitats, home to many important species threatened with extinction. Nine important landscapes with particularly high biodiversity values were identified (Table 3) and as shown in Figure 1 (Preface), these landscapes cross international boundaries and intersect with the three GMS economic corridors. Rapid development along these economic corridors, including energy, transport and industrial projects, has placed a strain on the environment, resulting in ecosystem fragmentation and biodiversity loss. These areas must be protected as the reservoir of natural capital necessary to maintain biodiversity and ecosystem services vital to local livelihoods and the

economic development of the GMS region as a whole. This is the underlying rationale for the BCI component, which was the flagship component of CEP-BCI, accounting for 47% of total funding.[8]

BCI has addressed environmental degradation in critical biodiversity areas by combining forest protection and rehabilitation measures with alternative livelihood development. This integrated conservation and development approach seeks to improve habitat connectivity and ecosystem functionality while reducing rural poverty. The component identified seven BCI 'corridors' for conservation and livelihood interventions.[9] At BCI sites, these corridors are important biodiversity areas linking already protected areas, and improved protection is essential to the conservation of the broader ecosystem.

**Table 3: Critically Important GMS Conservation Landscapes and BCI Pilot Sites**

| Biodiversity Conservation Landscapes | Countries | BCI Sites |
|---|---|---|
| Cardamom and Elephant Mountains | Cambodia and Thailand | Cardamom Mountains |
| Northern Plains Dry Forest | Cambodia | – |
| Eastern Plains Dry Forest | Cambodia | Eastern Plains, Mondulkiri |
| Tonle Sap inundation zone | Cambodia | – |
| Mekong Headwaters | PRC and Lao PDR | Xishuangbanna, Yunnan |
| Sino-Viet Nam Karst Landscape, Cao Vit Gibbon habitat | PRC and Viet Nam | Guangxi and Cao Bang |
| Triborder Forest (Emerald Triangle) | Lao PDR, Cambodia, Thailand | Xe Pian - Dong Hua Sao |
| Western Forest Complex | Thailand and Myanmar | Tenasserim |
| Central Annamites | Viet Nam and Lao PDR | Ngo Linh - Xe Sap |

## Key Achievements

The BCI component has resulted in a number of important achievements. At the local level, it has enhanced natural, social, physical, human and financial assets of participating communities. Villagers now have a better understanding of the impact of environmental degradation and climate change on their livelihoods, and are equipped with ways to deal with these issues. BCI has developed an integrated conservation and development methodology, participatory tools for climate vulnerability assessment and adaptation planning, and a valuation methodology for ecosystem services. The GMS region has begun to recognize BCI successes, and other development partners in the region are increasingly implementing its methodologies. Another key achievement of BCI was ADB approval in 2010 for $69 million of loans and grants for scaling up the initiative across broader transboundary landscapes in Cambodia, Lao PDR, and Viet Nam. As shown in Table 4, BCI achieved most of its original output targets.

[8] See Appendix 5: Table A5.5, Financial disbursements by component.
[9] For more detail on the BCI sites and corridors, see the Biodiversity Conservation Corridors Initiative Report 2006-2011: http://www.gms-eoc.org/resources/biodiversity-and-conservation-corridors-initiative-2006-2011-report

**Table 4: Achievement of BCI Output Targets**

| Output Target | Output Delivered | Status |
|---|---|---|
| At least five biodiversity corridor sites established | The program identified seven pilot sites in the GMS for biodiversity conservation corridors.<br><br>2010 saw the scaling-up of BCI activities in Cambodia, Lao PDR and Viet Nam into the Biodiversity Conservation Corridors (BCC) project, with the three countries receiving $69 million in loans or grants from ADB. | Achieved |
| Poverty reduction measures undertaken | By 2011: BCI sites undertook poverty reduction measures, and 181 committee /development funds disbursed just over $337,000 to local communities.<br><br>The project included 57 investments for small-scale infrastructure including schools, health clinics and other government services. | Achieved |
| Ecosystem restoration undertaken | 1.3 million hectares (ha) of habitat protected or sustainably managed.<br><br>The project restored 3,700 ha of forest ecosystem. | Achieved |
| Ecosystem service payment (PES) mechanisms developed | The program partnered with the United States Agency for International Development (USAID) on the Asia Regional Biodiversity Conservation Program to raise awareness about PES in the GMS, though it has not yet instated PES mechanisms at BCI pilot sites. | Partly achieved |

BCI has led to the improved management and conservation of over 1.3 million ha of critical landscapes and better livelihoods and living conditions for project beneficiaries from 28,367 households in 164 rural communities. These communities now have improved tenure and access rights to natural resources in over 30,000 ha. Village Development Funds (VDFs) provide micro-loans to community members to strengthen sustainable farming and other livelihood activities. They have proven effective in promoting alternative livelihood activities during program implementation, and three years after BCI implementation ended, the majority of VDFs are still in place, and slowly growing their capital base.

Over 7,000 individuals from government, civil society and local communities received training under the BCI component. Villagers now have a better understanding of the impact of environmental degradation, including climate change, on their livelihoods, and are more equipped to deal with these issues. Government support services and capacity have been improved in BCI corridors, along with institutional response capacity at the local level. Government capacity developed sufficiently to take over BCI management and implementation from international NGOs. By 2009, central and provincial institutions had achieved a similar handover of management and implementation functions to local authorities. Regionally, capacity improvements have led to enhanced transboundary cooperation, as evidenced by PRC, Lao PDR and Viet Nam signing bilateral conservation agreements.

BCI has developed a number of valuable planning tools and methods. First, the integrated conservation and development approach links livelihood development to biodiversity conservation in a practical manner, and has emerged as a well-proven tool. Second, the participatory framework for climate vulnerability assessment and adaptation planning allows local authorities to help rural communities adapt to climate change. Finally, BCI developed a valuation methodology for ecosystem services, which has provided valuable information on the economic value of

ecosystem goods such as NTFPs, carbon sequestration, watershed protection, water quality regulation and soil erosion control.[10]

Other development partners in the region are recognizing BCI successes and adopting its approaches. For example, the new $20 million KfW-funded biodiversity conservation corridors program in Lao PDR will cooperate with the BCI site in Yunnan through establishing a transboundary corridor with the Nam Ha National Protected Area, and will also use of a number of the initiative's tools and methods.[11] Similarly, the World Bank's Forest Investment Program, currently being designed in Lao PDR, will use the BCI landscape approach.[12]

GMS governments are increasingly recognizing biodiversity conservation corridors, and policy outcomes are beginning to emerge. The BCI framework is now enshrined in the Biodiversity Law in Viet Nam and represents a viable option for investments that integrate biodiversity conservation, poverty reduction and sustainable economic development. In PRC, the Prefectural government of Xishuangbanna has approved the recognition of biodiversity corridors. In Thailand the cabinet endorsed the Tenasserim corridor as an initiative that should be pursued nationally, and the country has completed, through its own funding, a feasibility study towards this. Thailand and PRC have mobilized their own budgets to finance BCI activities, which is further evidence of GMS countries' commitment to the BCI approach. Thailand allocated $500,000 to support implementation of BCI activities in Tenasserim, and the Xishuangbanna prefecture approved $158,000 for BCI activities in the Bulong Nature Reserve.

## BCI Activities Implemented

Initially, BCI established five sites in five GMS countries, and added two more in 2009. The countries selected the sites based on biodiversity values, ecosystem fragmentation, poverty incidence, local government capacity, and transboundary location. Site activities addressed the major development pressures threatening ecosystem integrity in the subregion (Table 5).

**Table 5: BCI Outputs and Activities**

| Outputs | Strategy | Example Activities |
|---|---|---|
| 1. Poverty reduction | Sustainable use of natural resources<br>Livelihood development & diversification<br>Climate resilience<br>Pro-poor growth | Village development funds<br>Climate change adaptation<br>NTFP marketing and value adding<br>Community-based ecotourism |
| 2. Harmonized land management | Participatory planning<br>Community co-management<br>Landscape level approaches | Participatory land-use planning<br>Land use zoning<br>Spatial multi criteria analysis<br>Community protected areas |
| 3. Ecosystem connectivity | Participatory management<br>Integrated watershed management<br>Landscape approaches | Ecosystem services valuation<br>Reforestation and enrichment planting<br>Check dams<br>Community patrolling |

[10] Footnote 10, pp 66-67.

[11] KfW Sustainable Natural Resources Management Program (Protected Areas and Corridors) Program. Draft Feasibility Study Report, MONRE, Lao PDR. Year??

[12] The World Bank's $15 million Scaling-up Participatory Sustainable Forest Management Project and KfW's $20 million Sustainable Natural Resources Management (Protected Areas and Corridors) Program both follow a conservation landscape approach to forest management in Lao PDR.

| Outputs | Strategy | Example Activities |
|---|---|---|
| 4. Capacity building | Enabling policy environment<br>Institutional/technical capacity building<br>Knowledge sharing/networking<br>Local empowerment | School-based programs<br>Local community & government staff training<br>Improved access to information<br>Awareness raising |
| 5. Sustainable financing | Development partner networking Integrated with government systems | Ecosystem services valuation and PES<br>Carbon financing and REDD+ support<br>Private sector engagement and corporate social responsibility |

By 2011, BCI covered over 1 million ha and involved 164 communities and nearly 30,000 families (Table 6).

**Table 6: BCI Target Beneficiaries in GMS Countries**

| | Cambodia | PRC | Lao PDR | Thailand | Vietnam | Total |
|---|---|---|---|---|---|---|
| Location | Cardamoms, Eastern Plains | Yunnan & Guangxi | Champasak & Attapeu | Western forest complex | Central Annamites, Cao Bang | |
| Number of sites | 2 | 2 | 1 | 1 | 2 | 7 sites[13] |
| Funding ($ million) | 2.6 | 1.7 | 1.2 | 1.0 | 3.1 | 9.6 million USD |
| Govt. contribution | 8.6 % | 30.1 % | 7.3 % | 27.4 % | 26.6 % | 20 % (average) |
| Villages/communes | | | | | | 164 communities |
| Households | 12,981 | 3,986 | 743 | 9,640 | 1,017 | 28,367households |
| Corridor area (ha) | 1,045,121 | 17,918 ha (+51,000 ha nature reserve) | 51,370 | 66,700 | 130,827 | 1,311,936 ha (+51,000 ha nature reserve) |
| Reforested area (ha) | 1,320 ha | 896 ha | 31 ha | 280 ha | 847 ha | 3,374 ha |
| Community development funds | 123 | 19 | 11 | 20 | 21 | 194 funds |
| Funds disbursed ($) | $104,999 | $25,000 | $83,000 | $112,108 | $72,000 | $397,107 |
| Improved land rights | 31,009 ha | – | – | – | 501 ha | 31,510 ha |
| People trained | 2,552 | 2,000+ | 778 | 958 | 1,165 | 7,453 people |

BCI's emphasis on transboundary management gradually developed during Phase I. Transboundary activities included: (i) support for a new transboundary biodiversity corridor between Cao Bang, Viet Nam and Jingxi, Guangxi Province, PRC; (ii) a BCI workshop in Yunnan to promote regional exchange and sharing of technical knowledge and experiences; (iii) support for a Memorandum of Understanding between Cao Bang and Guangxi provinces for the protection of gibbon habitats; (iv) development of bilateral agreements between transboundary nature reserves in PRC, Lao PDR and Viet Nam, and (v) support for the new Bulong nature reserve in Yunnan along its border with Myanmar.

[13] Guangxi-Cao Bang BCI site (PRC and Viet Nam) count as one BCI site, meaning the total site number is seven.

## Lessons Learned

BCI has shown that traditional sector approaches, which pay little attention integrating development with conservation, are inadequate to support sustainable land management decisions, and that new methods are required to incorporate environmental considerations into economic development planning. The integrated conservation and development approach adopted by BCI has proven to be a sound instrument for linking development to conservation in a manner that ensures benefits to the poorest families. However, development activities must be selected to directly target key conservation issues; not all livelihood development will have positive outcomes on conservation. Although VDFs are a useful way of supporting livelihood development and conservation, policy makers must consider a number of key factors to ensure sustainability over the longer term. These are: (i) a strong VDF committee and dedicated bookkeepers, (ii) an adequate capital endowment, (iii) a reasonable period of project-based support (4 years), and (iv) technical support to build the capacity of the committee.

BCI generated a number of useful management lessons:

(i) There was a tendency to dilute effort across the extensive conservation landscapes. During the pilot stage, it proved important to concentrate activities in communities with high value biodiversity assets in order to capitalize on the synergies amongst activities.

(ii) Decentralized decision making and local empowerment is crucial, and the early 'top-down' approach followed by some partners initially hampered BCI progress.

(iii) Effective technical assistance is essential until local partners develop their own capacity; this was particularly true for the VDFs and the planning of livelihood activities.

(iv) Timely fund disbursement to the local level is critical to the implementation of conservation and livelihood activities, which are seasonal and therefore time-bound.

(v) There is a need for adequate funding and technical support for all forms of protected areas in the corridors[14]. BCI sites are interrelated ecosystem complexes rather than simplistic corridors and require a holistic strategy addressing the needs of the entire system of protected areas, buffer zones, corridors and village forest areas. CEP-BCI Phase II (2012–2016) will address this through Global Environment Facility (GEF) planning and management support.[15]

Although BCI has shown that conservation corridors are a practical way to support biodiversity conservation, and has increased their recognition as a valuable land use category, no legal framework yet exists to support this in any GMS country. There is a critical need for policy and legislative support to promote biodiversity conservation corridors as recognized legal instruments for effective environmental management in the future.

[14] ADB. 2009. GMS Environment Program Evaluation Report, Manila,
[15] GEF Greater Mekong Subregion Conservation Landscape Support Program (GMS CLaSP).

## 3.3 Environmental Performance Assessments

The intended outcome of this component was that "EPA systems be established in all GMS countries as monitoring and information tools to mobilize environmental protection and policy interventions." National EPAs help governments take challenges into account in national environmental management and policy formulation. The EPA mechanism helps integrate environmental concerns into sector policies. EPA data enabled countries to assess trends and chart their progress toward targets such as Millennium Development Goals (MDGs) and five-year national socio-economic development plans.

### Key Achievements

Important achievements of the EPA component include the establishment and acceptance of EPA methods in GMS countries, enhanced EPA technical capacity, improved data management systems, and GMS countries' increasing institutionalization of EPA systems. Improved national capacity to benchmark environmental performance and monitor ecological conditions helps GMS governments to self-assess their achievement of national environmental targets. As shown in Table 7, EPA met its original output targets.

**Table 7: Achievement of EPA Output Targets**

| Output Targets | Outputs Achieved | Status |
|---|---|---|
| All GMS countries produce EPAs to set environmental standards, and at least two countries start using integrated sustainable development planning tools and EPA results | By 2008: Initial round of GMS national EPA reports (2003–2007) were finalized and disseminated.<br><br>By 2012: A second round of EPA reports (2007–2010) had been prepared for GMS countries. The EPA analytical framework has gained broad acceptance in GMS countries, and there is demonstrated improvement in national capacity to benchmark environmental performance and monitor socio-economic conditions.<br><br>By the end of 2012, the program had launched an interactive statistics portal and digital atlas based on EPA and related data. | Achieved |

Translating the second round of EPA reports into national languages strengthened the institutionalization of EPA into national planning processes. To varying degrees, GMS countries have integrated the EPA framework into existing performance assessment systems. For example, Lao PDR, Thailand, and Viet Nam now use national EPA reports in their State of the Environment reporting. PRC's Yunnan Province has adapted EPAs for use in prefecture environmental performance reporting.

In addition, CEP-BCI Phase I produced the *GMS Atlas on the Environment, 2nd Edition,* an update to the first version published in 2004. Launched in late 2012, the *Atlas* added value to EPA reporting by presenting a wider range of data, information, and analysis centered on thematic topics as well as on each GMS country. With hundreds of stunning photographs, maps, and graphs to complement its less technical focus, the *Atlas* has broad appeal among environment stakeholders, including country leaders such as Thailand's Prime Minister, Yingluck Shinawatra, and Myanmar's President, Thein Sein.

## Activities implemented

EPA has been a collaborative effort between GMS governments, EOC, and regional institutions such as the United Nations Environment Program (UNEP) and the Institute for Global Environmental Strategies. GMS countries have strengthened their institutional and technical capacities to collect, compile, analyze, and disseminate environmental data. As shown in Table 8, the EPA component resulted in the implementation of a wide range of monitoring and information activities at national, subnational and regional levels.

**Table 8: EPA Component Activities**

| Activity | Implementation Sites | Status |
|---|---|---|
| **National Environmental Performance Assessments** | | |
| Publication of national EPAs round 1 reports | All GMS countries plus Yunnan/Guangxi | Completed |
| National EPAs Round 2 | All GMS countries plus Yunnan/Guangxi | Reports in progress |
| Establish National EPA Implementing Nodes | All GMS countries | Established |
| EPA Case Studies | All GMS countries | Completed |
| National Forest Outlook Assessments | All GMS countries | Completed |
| National Reduce, Reuse, Recycle Strategy Development | Viet Nam | Completed |
| **Regional Environmental Performance Assessments** | | |
| Subregional EPA | GMS subregion | Completed |
| Subregional Environmental Performance Index | GMS subregion | Scoped |
| Scoping of Corridor Level EPA | GMS subregion | Completed |
| GMS Atlas on the Environment Second Edition | GMS subregion | Completed |
| **Subnational Environmental Performance Assessments** | | |
| Prefecture-Level EPA | Yunnan, PR China | Scoped |
| Sub-national EPA mainstreaming/awareness-raising | All GMS countries | Conducted |

### National Environmental Performance Assessments

GMS countries carried out two rounds of national EPAs (PRC conducted provincial reports in Guangxi and Yunnan provinces), which established a robust analytical framework and common environmental indicators.[16] In the first round, conducted prior to CEP-BCI, each of the GMS countries identified priority environmental issues for analysis under the pressure-state-response framework. Consultants drove the first round of EPAs, detracting somewhat from country ownership.

The second round of EPA reports (2007–2011) used an enhanced analytical framework to ensure that the assessments more effectively complemented existing country performance monitoring systems and reporting needs. A notable difference in approach was the use of the Development Pressure-State-Impact-Response (DPSIR) framework, an extension of the pressure-state-response framework used for the first round. This enabled deeper insights into environmental pressures and the social and biophysical impacts associated with environmental change. The

[16] The first round was actually conducted under a previous RETA, but the reports were published by CEP-BCI.

reports gave increased emphasis to building national capacity, producing better quality information, and ensuring that analytical results fed into national planning processes. With EOC support, national consultants and focal government agencies led the second round of EPAs, thereby promoting stronger country ownership.

Under the EPA component, CEP-BCI supported the Food and Agriculture Organization of the United Nations (FAO) to complete national forestry outlook studies in all six GMS countries. These reviewed the state of forestry in the countries and identified emerging socio-economic changes impacting the sector. The assessments described government efforts to better manage forestry resources and identified strategies to support sustainable forest management. Outputs also included scenario analyses and recommendations on policy options at the national and subregional levels to improve the long-term flow of benefits from the sector.

**Regional Environmental Performance Assessments**

ADB and UNEP collaborated on a subregional EPA identifying key transboundary environmental issues common to all GMS countries, and evaluating how the GMS had performed in addressing these shared environmental concerns. The EPA identified the concerns of greatest common interest to all GMS countries. These were: (i) threats to the Mekong River's vital functions, (ii) illegal wildlife trade, and (iii) poor harmonization of environmental policies and standards across the subregion.

In addition, FAO conducted a GMS forestry outlook study, including a publication and related policy briefs, with CEP-BCI financial support.

**Subnational Environmental Performance Assessments**

Drawing on lessons from the Provincial EPA in Yunnan, a prefecture-level EPA exercise in Xishuangbanna scoped out a model for applying the EPA approach in other prefectures and municipalities. The activity will commence early in Phase II and will involve a comprehensive assessment of the effectiveness of the five-year prefecture environmental plan and the cost-effectiveness of actions to address environmental targets. Expected outputs will include policy recommendations and options for institutionalizing EPA at the prefecture and municipality level.

## Lessons Learned

The major challenges facing regional EPA are differing country priorities, incompatible indicators, and variable data quality. The region needs an index that calculates a single performance rating for each country by integrating a large number of variable data sets into a smaller set of aggregated indicators. During Phase II, an Environmental Performance Index (EPI) will provide a baseline for cross-sector performance comparisons and help evaluate individual country performance against regionally agreed-upon targets. One challenge to such a performance monitoring system is the lack of a legal mandate. GMS countries do not have clear legislation for the use of EPA in sector reporting systems. Further efforts need to consider how the approach can build on rather than compete with existing environmental assessments.

To address these issues, CEP-BCI initiated a significant shift in its approach to environmental monitoring near the end of Phase I, which will continue under Phase II. Reliable, timely, and consolidated baseline and trend information will become the backbone of performance monitoring to strengthen environmentally-sound decision making. CEP-BCI is moving away from the process-intensive production of static EPA reports and investing more resources in collecting a wider range of comparable environmental data. The 'GMS Statistics' portal on the CEP-BCI website will improve accessibility of such environmental data, complemented by two other new online tools to support monitoring: the GMS Interactive Atlas and GMS Development Maptool. All three tools were launched in late 2012.

## 3.4 GMS Capacity for Sustainable Environmental Management

The intended outcome of this CEP-BCI component was that "strengthened capacity to mainstream environmental considerations into economic development planning and decision making across the GMS program." The program's capacity development strategy comprised four major elements: (i) the introduction and application of environmental planning and management tools; (ii) institutional strengthening to facilitate cross sector coordination and engagement; (iii) policy interventions, and iv) developing a regional university network to strengthen science-policy linkages. Capacity development is central to the CEP-BCI program, and as such is both a component in its own right and a cross-cutting theme across all components.

### Key Achievements

This component has strengthened environmental mainstreaming capacity in all GMS countries, at all levels and across all sectors, and narrowed capacity differentials across the region. The majority of program activities in all components have had strong capacity building elements. The EOC has played a key role in capacity development by providing technical assistance and training to GMS countries and being an environmental knowledge and information hub. CEP-BCI produced a range of environmental management and reference tools on SEA and the use of spatial tools for environmental analyses. The program established national, subregional and global capacity development networks, including a coalition of development partners and a regional university network with global links to other educational institutions. As shown in Table 9, the component achieved all its original output targets.

**Table 9: Achievement of Capacity Development Output Targets**

| Output Targets | Outputs Delivered | Status |
|---|---|---|
| Environment Operations Center operational | The program established the EOC in April 2006, and it was instrumental to Phase I operations and will continue its pivotal role in Phase II. By 2012, the EOC was a fully functional secretariat to the WGE and was developing as a knowledge hub for GMS countries. | Achieved |
| Report on options for anchoring EOC over medium to long term submitted to GMS countries | The program drafted a discussion paper on the institutional future of the EOC in 2008–2009 based on consultations with GMS countries, program partners and donors, and other regional stakeholders. The CEP Phase II strategy reflects the interim recommendations to gradually hand over program implementation to GMS NSUs while positioning the EOC as an environmental information and knowledge management center for the GMS. | Achieved |

Over a period of six years, CEP-BCI undertook a wide range of formal learning activities, including training programs, workshops, consultations, and study visits. Capacity development activities benefited around 7,000 participants through some 250 learning events. These activities do not include WGE meetings, Environment Ministers' Meetings (EMM) or individual country programming missions. The majority of learning events were conducted under the BCI component. Cambodia accounted for over half of the total number of learning events, due to its focus on BCI and the strong training and capacity building aspect of this component. CEP-BCI learning events covered a wide range of topics, although most reflected a technical-scientific orientation rather than a process-based one. This was consistent with stakeholders' perceived capacity needs. Appendix 3 shows a full listing of the training and other capacity development events administered under this component.

In addition, the existence of the program itself provided the opportunity for GMS nationals to contribute and build their expertise during Phase I implementation. CEP-BCI engaged a total of

166 consultants from 26 countries on both short and long-term assignments from 2006 to 2012. Of these, 105 (66%) were GMS nationals and 68 (40%) were women. Most nationals came from Thailand (34), Viet Nam (29) and PRC (20), but Lao PDR (15) and Cambodia (15) were also well represented. Only two consultants were hired from Myanmar. Twenty-seven young professionals from the GMS received internship opportunities at the EOC during Phase I, and many went on to professional assignments under CEP-BCI.

## Activities Implemented

Activities under this component targeted human resource capacity development across the full range of technical areas required for program implementation, with some organizational and institutional capacity building. Table 10 lists the key activities under the component, which included support to the WGE, knowledge exchange and training, and networking activities.

**Table 10: Capacity Development Component Activities**

| Activity | Implementation Sites | Status |
|---|---|---|
| **EOC Secretariat Support to the GMS Working Group on Environment** | | |
| WGE strengthening by EOC secretariat and capacity support | GMS subregion | Conducted and ongoing |
| Establishment and operationalization of the EOC | GMS subregion | Completed |
| Institutional options study | GMS subregion | Completed |
| Establishment of NSUs | All GMS countries | Ongoing |
| **Knowledge Exchange and Training** | | |
| EOC knowledge hub and website development | GMS subregion | Completed |
| Online environmental management tools | GMS subregion | Completed |
| Collaborative activities under the Phnom Penh Plan | All GMS countries | Conducted and ongoing |
| EOC internships | GMS subregion | Conducted and ongoing |
| Training and learning events | All GMS countries | Conducted |
| GMS 2020 International Conference | GMS subregion | Conducted |
| **Networking Support** | | |
| Support for subregional environmental networks | All GMS countries | Conducted and ongoing |

### EOC Secretariat Support to the GMS Working Group on Environment

The EOC was established in 2006, and the establishment of NSUs in several countries from 2010 onwards strengthened its operations. EOC played a central role in capacity development under CEP-BCI Phase I through a range of activities:

(i) Providing secretariat and capacity support to WGE.

(ii) Acting as a knowledge hub/referral center for environmental management in the GMS.

(iii) Establishing, strengthening and building capacity in the NSUs.

(iv) Broadening the role of NSUs to integrate expertise from government agencies outside the environmental ministries and to non-government partners, including the private sector, NGOs and civil society.

(v) Providing opportunities for professional development for GMS nationals through internships and deputation programs at the EOC.

(vi) Evolving the role of EOC from one of implementation to acting as a source of technical support for environmental management in the GMS.

(vii) Supporting capacity building through phased 'GMS-ization,' by increasing the proportion of GMS nationals working at the EOC.

As secretariat to the WGE, the EOC proved itself to be an operationally effective capacity development support entity. Bolstered by the coordination role of NSUs with other national sector line agencies, the EOC provided capacity support to the WGE across all program components. This led to a strengthened WGE, better able to direct and oversee CEP-BCI activities and mainstream environmental management concerns into the GMS Program.

An institutional options study completed in 2009 proposed a vision for the EOC as "an effective and efficient regional center promoting socio-environmentally sustainable economic development in the GMS within the context of Economic Cooperation Program." The study laid out EOC objectives and terms of reference and described the legal and governance structure under which it should operate. It proposed that the EOC evolve into a subregional 'Environment Operations Network' with nodes in each of the GMS countries. Phase II will investigate pathways to achieve this.

**Knowledge Exchange and Training**

CEP-BCI has conducted a wide range of learning events that have strengthened environmental management capacity in the Subregion (Appendix 3). These events culminated in a major international conference in February 2012, with the theme 'GMS 2020: Balancing Economic Growth and Environmental Sustainability.' The conference was attended by more than 230 delegates, including senior GMS government officials, private sector representatives and development partners. The conference benchmarked GMS economic growth between 2001 and 2010, investigated its impact on environmental and social development, and provided an outlook for the following decade. The outcomes provided important inputs to the GMS Program in general, and to CEP-BCI Phase II in particular.

To contribute to capacity building, CEP-BCI produced a range of environmental management and reference tools for interactive online use through the EOC website. The GMS Development Maptool is an interactive platform with an intuitive map interface for adding, browsing and reviewing past, ongoing, and planned development projects in the subregion. This spatial database now has more 2,800 projects plotted, allowing users across the subregion to identify which environment-related projects are being implemented in any locality. The GMS Interactive Atlas provides a regularly updated, online 'living' atlas with the latest information on specific geographic features, infrastructure, development projects and socio-economic profiles. The Atlas places key base layers directly in the hands of non-technical users and decision makers, enabling them to customize and produce maps to meet their needs. The GMS Statistics Portal displays environmental, social, and economic state and trend data sets for the six GMS countries. This interactive database allows users to create graphs and charts to visualize data, make comparisons across the region, and plot trends over time.

In addition, between 2005 and 2012, CEP-BCI published 40 knowledge products and distributed them throughout the subregion. These covered the full range of the program's thematic areas, including policy briefs, SEA and EPA synthesis reports, conference proceedings, two editions of the *GMS Atlas of the Environment*, and publications explaining the CEP-BCI program. Appendix 4 lists all knowledge products CEP-BCI produced during Phase I.

**Networking Support**
CEP-BCI provided formal and informal support for subregional networking activities. The program established an informal coalition of development partners who attended conferences, thematic events, and WGE meetings, and provided technical, training and funding support to the program. CEP-BCI engaged with and supported graduate student research at a network of regional universities (UniNet), providing a diverse range of research and technical support to CEP-BCI activities, particularly BCI pilot site monitoring. The network also provided a platform for academic exchanges between UniNet members and regional/international institutions, with shared capacity and development visions for natural resources management in the GMS.

In response to the ADB mid-term evaluation, the EOC planned an institutional capacity needs assessment late in Phase I. The assessment has commenced as a CEP-BCI Phase II kick-off exercise. An important aim of the assessment will be to document relevant university networks and learning programs in the GMS and identify suitable partnership modalities to support CEP-BCI Phase II implementation. In support of capacity development in GMS countries, the EOC collaborated with the Phnom Penh Plan (PPP) initiative to mentor future environmental policy and management professionals on environment-related issues. The PPP is a key initiative of the Human Resource Development Strategy of the GMS Program designed to develop a core group of GMS development leaders and managers to manage the complex and challenging GMS development agenda. Following a number of well-received PPP environmental trainings during CEP-BCI Phase I, Phase II will incorporate further collaboration with PPP.

## Lessons Learned

The majority of the training and learning events supported by CEP-BCI involved more than one GMS country. As such, they played an important role in regionalizing CEP-BCI by promoting the sharing and exchange of skills and experience among GMS countries. Over the course of Phase I, GMS nationals increasingly acted as trainers and resource persons in these events compared to the early years when international trainers dominated. Similarly, by the end of Phase I, CEP-BCI was able to use national consultants more frequently for program implementation. For example, a total of 15 experts from GMS countries supported the SEAs on Golden Quadrangle Tourism and Quang Nam land use, alongside only three international consultants. Mobilization of national experts aligns with the “GMS-ization” plan of the program, and helps to facilitate smoother collaboration with the government agencies involved.

A recognized shortcoming of Phase I capacity development was its focus on building technical capacity rather than institutional and organizational capacity. In response to this, CEP-BCI initiated an institutional mapping study, which will continue in Phase II to identify the roles of different stakeholders in sustainable development planning and form the basis for an institutional capacity development needs assessment. Strengthening strategic and operational capacity of the WGE and embedding the EOC as a GMS institution for technical support and knowledge capitalization and exchange will require further effort. Phase II will promote this by improving integration among the WGE, NSUs, and the EOC, and through further capacity building in collaboration with the PPP.

The program will use lessons from the institutional capacity needs assessment to develop a longer-term capacity building strategy across all sectors for implementation under Phase II. This will address organizational and institutional capacities and involve relevant university networks and learning programs in the GMS. CEP-BCI has developed different skills in different GMS countries, and will continue to seek opportunities for country-to-country capacity development to enhance and harmonize subregional capacity. Phase I experience shows that supporting the organic evolution of regional capacity building networks, rather than trying to impose them programmatically, is a more effective strategy. The informal but highly effective Climate Change

network built around CEP-BCI, the World Bank's Lowering Emissions in Asia's Forests program, and the ADB Forest Investment Program, are clear evidence of this.

## 3.5 Program Development, Delivery and Sustainable Financing

The intended outcome of this component was *"initiate actions for scaling-up, and identifying strategies and mechanisms for CEP-BCI financial sustainability*" and to support program development, including preparations for Phase II. This component also focused on strategies to establish sustainable funding for environmental management.

### Key Achievements

CEP-BCI used the recommendations from three evaluations for adaptive management during Phase I, while addressing longer-term issues in the design of Phase II. Over a two-year period, the program worked in close cooperation with all stakeholders on the design of Phase II, and the EMM approved the resulting *Program Framework Document 2012–2016* in 2011.

In addition to program development, work under this component explored a range of financing options, including reducing emissions from deforestation and forest degradation (REDD+), payment for ecosystem services (PES), community-based ecotourism, and public-private-partnerships. The valuation of ecosystem services significantly increased awareness of PES and its potential applications among governmental officials, particularly at district and provincial levels. The program successfully secured longer-term financing, including $69 million in ADB loans and grants, for scaling up the BCI pilots under the BCC project, and $23.1 million from the governments of Finland and Sweden for CEP-BCI Phase II. However, as shown in Table 11, this component achieved mixed levels of attainment of its original output targets.

**Table 11: Program Development, Delivery and Sustainable Financing**

| Output targets | Outputs delivered | Status |
|---|---|---|
| Report on sustainable financing prepared. | Sustainable financing activities have been scoped out in the Phase II program framework, and while the program did not conduct a systematic review of options, it explored a range of solutions in five countries (Table 13). | Not achieved |
| At least two sustainable financing mechanisms proposed. | By the end of Phase I, the program had not prepared specific recommendations for sustainable financing. | Not achieved |
| Program impact monitoring system operational. | The program developed a monitoring framework for BCI sites in 2006 and completed baseline studies in 2009. By 2012, the framework remained only semi-operational. | Partly achieved |
| Investment plan for 2009–2015 developed. | By 2009, the program received supplementary financing and was extended to 2012. In 2011, the initiative prepared a program framework document with a budget of $26.5 million for the 2012–2016 period, which the 3rd GMS EMM endorsed. By the end of 2012, CEP-BCI had secured financing of $23.1 million and an ADB RETA for Phase II. | Achieved |

CEP-BCI made progress toward sustainable financing by developing relationships with funding partners and increasingly connected with ADB's GMS and country lending and non-lending portfolios, such as for the BCC project. Key stakeholder support for CEP-BCI continues, with

plans for Phase II endorsed by the GMS Summit, and funding for Phase II secured through agreements with the Governments of Finland and Sweden and ADB.

The region is increasingly integrating PES with other GMS economic development activities through its systematic institutionalization in sector planning. The SEA of the 7th Power Development Plan (PDP VII) in Viet Nam strengthened the basis for substantial investments in forest conservation expected to reduce plant and operating costs of hydropower facilities and increase incomes for poor, rural households involved in forest protection activities. The potential revenues that forest protection could generate are projected at $41 million annually.

## Activities Implemented

As shown in Table 12, activities under this component addressed: (i) program development, (ii) sustainable financing, and (iii) program monitoring and evaluation.

**Table 12: Program Development, Delivery and Sustainable Financing Activities**

| Activity | Implementation Sites | Status |
|---|---|---|
| **CEP-BCI Program Development** | | |
| Design of CEP-BCI (2012–2016) | All GMS countries | Completed |
| Partner networking activities | GMS subregion | Continuing |
| **Sustainable Financing for Environmental Management** | | |
| PES support | All GMS countries | Conducted |
| Valuation of ecosystem services | Lao PDR and Yunnan | Continuing |
| **Program Monitoring and Evaluation and Reporting** | | |
| Program impact monitoring system operational | GMS subregion | Ongoing |
| Program progress reporting | GMS subregion | Continuing |
| Program evaluations | GMS subregion | Completed |

### CEP-BCI Program Development

ADB, Sida and the Government of Finland conducted three evaluations during CEP-BCI Phase I. Overall, the findings were positive, and CEP-BCI used the shortcomings identified for course corrections during Phase I and the design of Phase II. Section 5.2 describes the findings of these evaluations in more detail.

In their joint statement of the 4th Semi-Annual Meeting held in Bangkok in November 2009, the WGE requested that ADB initiate design of the second phase of CEP-BCI. Over the next two years the EOC, in close consultation with GMS countries, donors and other stakeholders, led a fully-inclusive design process, culminating in the endorsement of the Program Framework Document by the 3rd GMS EMM held in Phnom Penh in July 2011. The ADB Board subsequently approved the Phase II RETA paper, and during the final months of Phase I, staff went to great effort to detail activities for the 2012–2013 annual work plan.

### Sustainable Financing for Environmental Management

The BCI component developed a methodology for the valuation of ecosystem services and provided valuable information on the economic value of ecosystem goods and services (carbon sequestration, watershed protection, water quality regulation and soil erosion control). BCI sites explored a number of sustainable financing opportunities in all GMS countries as possible candidates for pilot implementation (Table 13).

**Table 13: Sustainable Financing Opportunities Explored Under CEP-BCI**

| Site | Activity studied |
|---|---|
| Cardamom Mountains, Cambodia | (i) Community Based Ecotourism project in Chi Phat.<br>(ii) Carbon trading zones in the Cardamom Mountains.<br>(iii) Potential REDD+ projects in Phnom Samkos Wildlife Sanctuary.<br>(iv) Regional Project Preparation Technical Assistance to assess feasibility to upscale BCI beyond the pilot sites. |
| Xishuangbanna, Yunnan, PRC | (v) Investments in Sustainable Forest Management (SFM) for biodiversity conservation in south and northwest Yunnan.<br>(vi) Agro-forestry mixed-farming model based on 'jungle rubber'. |
| Xepian-Don Hua Sao, Lao PDR | (vii) Visitor entry fees in Xe Pian National Protected Area.<br>(viii) RPPTA to assess feasibility to upscale BCI beyond the pilot sites. |
| Tenasserim, Thailand | (ix) Forest Carbon Partnership Facility funding for deforestation avoidance and national REDD+ readiness planning.<br>(x) Public-private-partnership opportunities for forest restoration for watershed management, poverty alleviation and carbon sequestration. |
| Central Annamites, Viet Nam | (xi) RPPTA to assess feasibility to upscale BCI beyond the pilot sites. |

This component conducted PES awareness-raising activities, including two study visits to the United States for high-level decision makers from land use planning agencies in Cambodia, Lao PDR, PRC, Thailand and Viet Nam. The study visits will help establish long-term support mechanisms among GMS countries, the US Forest Service, and PES implementers to share experiences on an ongoing basis. The component also supported the development of PES-enabling conditions in Lao PDR, Thailand, and Viet Nam and facilitated the GMS countries' exchange of experience and knowledge with the global community.

**Program Monitoring and Evaluation**

The program developed a monitoring framework for selected BCI sites in 2006, and completed baseline studies in 2009. However, the framework remained only semi-operational throughout Phase I, and was established in only some sites. CEP-BCI has recognized monitoring and evaluation (M&E) as a weakness of program as a whole after all three program evaluations identified it as a key issue. The major problem was that the design and monitoring framework (DMF) had few indicators for tracking outcomes and results. Indicators that could be used to evaluate the uptake of BCI countries, the impact of SEAs, and program responsiveness would have made the DMF much more useful.

CEP-BCI incorporated lessons learned regarding weaknesses in M&E and reporting systems in the design of Phase II, significantly strengthening systems and implementing more specific, measurable outcome indicators across all components. An increased emphasis on national implementation reporting will support these changes in Phase II.

## 3.6 Climate Change

As a crucial cross-cutting issue, the intended outcome was that "*climate change considerations are integrated into development processes across the GMS program*." In response to demand from GMS countries, CEP-BCI increasingly addressed climate change over the life of the program, and following the amendment in late 2007, gave it equal status with the other five program components.[17]

### Key Achievements

CEP-BCI Phase I realized significant achievements in climate change mitigation and adaptation. Major outcomes include:

(i) Increased awareness of the impacts of climate change at regional, national and local levels.

(ii) Innovative approaches to assessing and managing carbon dioxide ($CO_2$) emissions from land use changes and key development sectors (energy and transport).

(iii) Strengthened climate change risk and vulnerability assessment capacity of GMS institutions and practitioners focusing on ecosystem services, livelihoods, and productive sectors (agriculture, energy, infrastructure and tourism).

(iv) Climate change considerations mainstreamed across all CEP-BCI program components.

(v) Climate change now recognized as a component in its own right in Phase II of CEP-BCI.[18]

Through its climate change activities, CEP-BCI created strong partnerships and networks to scale up climate-related interventions piloted under Phase I. A World Bank/World Wide Fund for Nature (WWF) project has adopted the participatory climate change vulnerability and adaptation assessment methodology developed for pilot application in Lao PDR, Thailand and Viet Nam. USAID will cooperate with CEP-BCI Phase II to identify climate hotspots and implement adaptation measures within them. With CEP-BCI support, the Commonwealth Scientific and Industrial Research Organisation in Australia partnered with the Southeast Asia-START Regional Center (Thailand based), to strengthen GMS regional capacity on climate modeling and monitoring. They also fostered a valuable network linking the GMS to international expertise, especially on climate change adaptation. Other partner institutions linked through the network include the National University of Lao PDR, Kasetsart University, Chulalongkorn University, the Clean Air Initiative, the Mekong Institute, and Murdoch University.

Results of the Phase I study on climate change impacts and adaptation options in Lao PDR, Thailand and Viet Nam were presented by WGE representatives at the tenth meeting of the Conference of the Parties of the International Convention on Biological Diversity. The study identified tasks that will be necessary over the next two decades for the region to adapt to climate change and mitigate air pollution, including:

(i) raising awareness and strengthening capacity for climate impact assessments,

(ii) developing tools to build climate change adaptation into national development plans,

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[17] ADB. 2007. *RETA 6289: Core Environment Program and Biodiversity Conservation Corridors Initiative in the Greater Mekong Subregion Major Change in Scope and Amount*. Place of publication?

[18] ADB. 2011. *CEP-BCI (2012-2016) Program Framework Document.* Component 3, Climate Resilient and Low Carbon Strategies.

(iii) raising capacity of local communities to develop coping and adaptation strategies,

(iv) strengthening risk management, disaster preparedness and early warning systems,

(v) developing climate-resilient infrastructure (e.g. water storage and irrigation systems),

(vi) better integrating national policies on climate change and air pollution,

(vii) investigating opportunities for carbon financing and benefit-sharing mechanisms, and

(viii) strengthening regional cooperation, information exchange and joint infrastructure projects.

## Activities Implemented

CEP-BCI support for climate change addressed adaptation, mitigation and REDD+ readiness as cross-cutting themes. Table 14 summarizes the program's major climate change interventions.

**Table 14: Climate Change Activities**

| Activity | Implementation Sites | Status |
|---|---|---|
| **Climate change adaptation** | | |
| Climate Change Impacts, Vulnerability and Adaptation in BCI | Thailand, Lao PDR and Viet Nam | Completed |
| **Climate change mitigation** | | |
| Carbon Neutral Transport Corridors (CNTC) | East West Economic Corridor | Completed |
| EOC internships in support of CNTC | East West Economic Corridor | Completed |
| Integration of climate change parameters into PDP VII SEA | Viet Nam | Completed |
| **REDD+** | | |
| Climate Change Fund for REDD+ | Thailand, Lao PDR and Viet Nam | Completed |

### Climate Change Adaptation

In cooperation with the Southeast Asia START Regional Center, CEP-BCI embedded climate change considerations into the BCI component of the program. The work had three major objectives:

(i) Develop a participatory methodology to assess local-level climate change risks and vulnerability and to identify adaptation responses.

(ii) Identify climate change hot-spots in the BCI conservation corridors.

(iii) Inform and help to plan BCC project investments in Viet Nam and Lao PDR.

Qualitative information collected at the local level complemented climate projection data and crop modeling in order to understand the risks faced by rural, agriculture-dependent communities in the GMS, and to help them develop adaptation strategies to mainstream into local development plans. The activity was successful in developing a methodology for assessing climate change vulnerability and adaptation options at the local level. The methodology helped identify the current context of vulnerability and coping strategies of agricultural communities in BCI sites, and also helped improve the understanding of indigenous knowledge for managing climate-related risks. To promote a broader application of the approach in the GMS, CEP-BCI is producing a knowledge product summarizing the assessment methodology and results from its application in Phase I. Phase II will work with regional partners to further improve the assessment methodology and promote its application on a wider scale in the GMS.

A report on impact assessment and adaptation to climate change in PRC, Thailand, and Viet Nam was prepared for the tenth meeting of the Conference of the Parties of the Convention on Biological Diversity. This policy brief summarized the main impacts of climate change expected in the three GMS countries and made recommendations on how resilience can be built within the national context. The report also highlighted the link between air pollution and climate change, and encouraged initiatives that address both these issues.

**Climate Change Mitigation**

CEP-BCI supported the Viet Nam Institute of Energy to integrate climate change parameters into the SEA of the PDP VII. The work included integrating temperature, rainfall and sea level changes into the SEA methodology and assessed a range of possible climate change scenarios' effects on the energy sector. The activity also assessed the carbon footprint of energy development and the risks and vulnerabilities of the energy sector in a changing climate.

Through the CNTC activity, the program explored how to increase the fuel efficiency of freight operations, and country capacity to develop carbon sequestration and forestation projects. The activity grew around two concepts, one aimed at reducing carbon emissions by better transport links in the region and the other aimed at offsetting some of these emissions by the 'greening' of adjacent conservation areas. The work explored opportunities for interventions that target both climate change and air pollution. The study produced a number of specific outputs in regard to transport, including:

(i) an emissions baseline for the East-West Economic Corridor (EWEC) from transport and forestry with scenarios and projections up to 2025;

(ii) a transport policy assessment (focusing on vehicles, fuels, infrastructure, driver behavior and logistics management) for 3 countries;

(iii) a survey of freight companies along the EWEC and an accompanying workshop for freight operators to develop recommendations for pilot projects;

(iv) a carbon stock assessment for Savannakhet Province in Lao PDR, including GIS-based analysis and accompanying field work; and

(v) a suitability assessment of Savannakhet province in Lao PDR and identification of areas with high carbon sequestration potential.

The study also identified a number of challenges facing the region. Although climate change awareness is now widespread, most GMS countries have insufficient capacity to design and implement programs that address related drivers and potential opportunities. While the transport, forestry, and energy sectors have focused on reducing emissions, roles and responsibilities of different stakeholders need further definition. In particular, multi-sector approaches must be developed among the transportation, tourism, and agriculture sectors.

Two EOC study internships focused on supporting the CNTC. The first study developed a methodology for the application of remote sensing to the estimation of carbon sequestration and aboveground biomass change. The second, an analysis of the existing regulatory framework in the GMS targeting vehicle emissions, assessed the status of transport initiatives and legislation in each GMS country and identified the main gaps within freight vehicle emissions. Both studies contributed to the background development work for the CNTC activity.

**REDD+ Preparedness**

With technical support from EOC, CEP-BCI secured funding from the ADB Climate Change Fund to undertake REDD+ preparedness activities in BCI pilot sites in three countries. This funding supported BCI investment by delivering capacity building to provincial authorities on REDD+

readiness in Lao PDR, Thailand, and Viet Nam. The activity had a number of important outcomes. In Thailand, it led to the establishment of a national REDD+ focus group covering four thematic areas: (i) REDD+ policy; (ii) Reference Emissions Levels and Measurement, Reporting and Verification; (iii) benefit-sharing mechanisms; and (iv) capacity building. In Viet Nam, the funding supported a range of REDD+ readiness activities in Quang Nam, Quang Tri, and Thua Thien Hue provinces. In Lao PDR it is expected to leverage an additional $13.3 million from the Forest Investment Program for REDD+ activities in the BCC project.

Progress on REDD+ under Phase 1 was quite slow, hindered in Viet Nam by a lack of clarity on ministerial ownership, in Lao PDR by the restructure of its environment and forestry ministries, and in Thailand because it is a new concept. In Phase II, CEP-BCI will cooperate with the World Bank's REDD+ Readiness Working Group in Thailand and with the Lowering Emissions in Asia's Forests program in Lao PDR.

# 4 ANALYSIS OF RESULTS

## 4.1 Overall Program Outcomes and Impacts

While many of the program's higher-level impact and outcome targets will happen in the future, the program has assessed its progress thus far, summarized in Table 15.

**Table 15: Achievement of Impact and Outcome Targets**

| Impact and Outcome targets | Impacts and Outcomes Delivered | Status |
|---|---|---|
| **Impact:** Prosperity in the Greater Mekong Subregion, based on equity and sustainable development | | |
| **Impact Targets** | | |
| By 2014, significant reduction in the incidence of poverty among ethnic minority groups and poor households living in BCI sites and selected GMS economic corridors | By 2012, incidence of poverty was not measured in a regular way in BCI households, though the program conducted household surveys to establish a socio-economic baseline for communities and to understand the impact of BCI interventions.<br><br>Impact assessments of BCI sites in Cambodia, Lao PDR and Viet Nam conducted in 2009 showed that while BCI communities had better physical infrastructure than other communities (better access to roads, health care, markets and services), financial assets remained an area of concern with the majority of households surveyed stating they had insufficient income to meet basic needs.<br><br>In Phase II, CEP-BCI will conduct regular monitoring of socio-economic conditions in BCI and BCC communities. | Partly achieved |
| By 2014, measures for mitigating negative impact of development activities in place in GMS economic corridors | By 2012, all GMS Strategic Action Plans prepared and published over the last five years (2007–2012) include social and environmental considerations, and identify specific environmental projects. Additionally, the development of the GMS Strategic Framework (2012–2022) included a strong focus on environmental results. | Partly achieved |

| Impact and Outcome targets | Impacts and Outcomes Delivered | Status |
|---|---|---|
| **Outcomes:**<br>1. Sound environmental management systems and operation capacity for enhancing the development potential, performance, and impact of the GMS Program.<br>2. Updated and environmentally sound GMS hydropower, transport, and tourism strategies, and effective implementation of sustainable management plans in five biodiversity conservation corridors. | | |
| **Outcome Targets** | | |
| By 2014, work of WGE integrated with that of other GMS working groups | By 2012, the WGE and EOC have participated more in raising the profile of environmental issues over the last three years in GMS sector meetings such as agriculture, tourism, transport and energy.<br><br>Cross-sector projects such as the SEA of Power Development Plans in Viet Nam, tourism in Cambodia and Golden Quadrangle (under WGE), and renewable energy roadmap for the GMS (under the Regional Power Trade Coordination Committee) have been initiated. CEP-BCI has identified Phase II cross-sector priorities with the GMS Working Group on Agriculture. | Achieved |
| By 2014, cumulative environmental impact assessment models and tools integrated in GMS Program development and investment planning | By 2012, this is in process. The program conducted a rapid assessment of environmental issues for the GMS in 2011, and identified and integrated environmentally friendly measures for other sector programs into the GMS Strategic Framework (2012–2022). | Partly achieved |
| EOC institutionally anchored in GMS | By 2012, the program has developed initial NSU structures, and by the end of Phase I, NSUs were in place in Lao PDR, Cambodia and Viet Nam. | Achieved |
| By 2008, the program had undertaken SEAs of hydropower, roads, and tourism development strategies. By 2008, it had initiated sustainable development planning in at least 2 GMS countries. | By 2008, CEP-BCI had initiated three SEAs, focusing on cross-border roads (North-South Economic Corridor), hydropower (Viet Nam) and tourism (Cambodia).<br>By 2012, the program had conducted an additional four SEAs focusing on power development (Viet Nam), cross-border tourism (Golden Quadrangle), land-use planning (Quang Nam province, Viet Nam) and river basin planning (Viet Nam). | Achieved |
| By 2008, biodiversity corridors were established in at least five pilot sites in the GMS. | CEP-BCI established biodiversity conservation corridors in 7 sites and leveraged $69 million in ADB loans and grants to scale up in three countries. | Achieved |
| By 2008, pro-poor biodiversity conservation management plans in place for three protected areas. | By 2012, GMS countries had given their support for the development of management plans and strategies for three protected areas including i) the Bangliang Nature Reserve in Jinxi County, Guangxi, PRC; ii) the Meili Snow Mountain National Park, Diquing County, PRC; and iii) a new protected area, Bulong Nature Reserve bordering Meshong, Myanmar and Xishuangbanna, Yunnan, PRC. | Achieved |
| By 2008, Global Environment Facility pipeline and investment plan for 2009–2015 developed. | The concept and roadmap for GEF financing for the GMS was developed in 2011. The program will cost $20.1 million, of which $1 million will go toward regional projects and $19.1 million to country programs in Cambodia, Lao PDR, Thailand and Viet Nam. | Achieved |

## Program Ownership

From its origins in a few ad hoc regional environmental projects, CEP-BCI is now an integral part of the GMS Program's Strategic Framework for economic cooperation. The region has embraced it as a platform for multi-country and multi-sector engagement on key environmental issues facing the region. GMS governments strongly supported the program, recognizing that it is helping them move towards a poverty-free and ecologically rich Greater Mekong Subregion. The EOC is now well-established as a knowledge hub for the transfer of environmental data, knowledge and expertise across the region.

In the early years, the Technical Advisory Panel and the EOC led program implementation and development with the acquiescence of the WGE. By the end of Phase I, the WGE had taken the lead in making key decisions for program development. As WGE capacity was built, the need for the advisory panel diminished, and by the end of Phase I it was no longer in use. The WGE now directs the EOC, and is increasingly active in strengthening its linkages with other GMS development sectors, supported in this role by the NSUs toward the end of Phase I.

## Program Management and Coordination

Program management and coordination functions evolved during CEP-BCI Phase I in a number of important respects:

(i) At the country level, program management and implementation responsibility changed progressively from being largely in the hands of non-government development partners to becoming the responsibility of national government agencies and local authorities. The BCI component, which was initially managed by NGOs in most countries, clearly demonstrated this, but by 2009 the new BCC investments were fully managed by government agencies.

(ii) CEP-BCI has aligned itself with the GMS Program's Strategic Framework over time, and had a strong influence in the development of the new Strategic Framework in 2011. This framework placed a high priority on the environment and called for better balancing of development and environment across all sectors for the first time.

(iii) The function of the EOC changed from program leadership to a secretariat role under the guidance of the WGE. It has evolved into a hub for knowledge management and provision of technical expertise.

(iv) After a slow start, the program strengthened its integration with ADB country programs towards the end of Phase I, influencing a number of country programming decisions. An example of this was providing support to the ADB Thailand Resident Mission's Country Performance Assessment in 2011 with regards to environmental performance indicators and analysis on current status and trends in environmental conditions.

(v) The program has created a network of development partners involving bilateral, multilateral and international nongovernment organization projects and increasingly used it to develop frameworks for cross-sector cooperation and institutional capacity development across the GMS.

## Program Integration and Cohesiveness

Initially, CEP-BCI implemented its activities on a component-by-component basis. Over time, it identified opportunities for synergies among components, and the program as a whole became more integrated. As a cross-cutting theme, climate change played a key role in enhancing integration. Climate vulnerability assessments and ecosystem valuation activities in BCI sites helped identify REDD+ and PES opportunities for the sustainable financing of biodiversity conservation and ecosystem protection. Viet Nam successfully integrated climate change was into its energy sector and economic corridor planning through the CNTC activity.

Provincial economic assessments conducted in Viet Nam and Cambodia demonstrated how stakeholders could use spatial SEA tools for planning BCC investments by providing important baseline spatial information on development pressures and hotspots in the CEP-BCI conservation landscapes. The program used the information generated to identify opportunities for potential PES activities. In addition, EPA methods helped assess biodiversity corridor performance in Xishuangbanna Prefecture in PRC, functionally linking these two components.

From 2009 onward, the program adopted a cluster approach to promote further integration of activities across the SEA, BCI and EPA components in geographic focal areas. CEP-BCI consolidated activities within these geographic areas with the aim of capitalizing on synergies between components, identifying cross-sector and transboundary issues, and maximizing the development impacts of the activities. Major activities in the five selected clusters were:

| | | |
|---|---|---|
| North-South Economic Corridor (Golden Quadrangle) | – | Tourism, climate change, and environmental performance assessment |
| Eastern Extension of NSEC | – | BCC start up and institutional capacity strengthening |
| East-West Economic Corridor | – | Integrated spatial and strategic approach to facilitate sustainable development |
| Southern Economic Corridor | – | Integrated approach to SEA, BCI, and EPA |
| GMS Subregion as a whole | – | Institutional development and capacity building as a cross-cutting theme |

## Environmental Mainstreaming

CEP-BCI emphasized cross-sector integration, particularly with the transport, energy, tourism and agriculture sectors. Environmental mainstreaming in planning processes in these sectors improved as Phase I evolved, especially in regard to sector strategy development. Uptake of activities and partnerships with other development sectors included:

(i) Co-financing support for the ADB Alternative Energy Technical Assistance.

(ii) Technical support and capacity building for the Regional Power Trade Coordinating Committee (RPTCC).

(iii) A request for CEP-BCI to complete an environment and climate screening of the GMS Program's Strategic Framework (2012–2022).

(iv) An ADB request to support the GMS Working Group on Transport with an environmental safeguards assessment.

(v) Cooperation with the GMS Program's Core Agriculture Support Program to develop synergies between agriculture and environmental activities.

(vi) In a cooperative effort under the PPP, cross-sector capacity building enhanced environmental management skills, improved collaboration between relevant agencies, and promoted exchange and knowledge sharing.

### Risk Analysis

CEP-BCI proved resilient to external shocks and disturbances outside of the control of program management. Phase I coincided with a period of extraordinary global and regional events. These occurrences were both natural and market-driven, and included the surge in fuel, food and commodity prices; the cyclone Nargis in 2008; the global economic downturn in 2009; typhoon Ketsana in Southern Lao PDR in 2009; and the catastrophic floods in Thailand and Cambodia in 2011. Although the design and monitoring framework (DMF) explicitly recognized some economic risks, it did not foresee many of the natural climate-related risks. One risk that the DMF identified was that "*short term development and income needs, and investment priorities override long-term sustainable development goals*."[19] This did indeed occur, resulting in increased and poorly controlled land concessions that had substantial environmental and social impacts in the subregion.

Impact and outcome level assumptions in the DMF included "*stable economic conditions and favorable prices for agriculture and forest products*.[20]" A risk that the framework had not identified, but that did occur, was that agricultural product prices would soar during program implementation. This created a surge in Foreign Direct Investment focused on land concessions, putting further pressure on forest land and the environment, particularly in Lao PDR and Cambodia. Although climate change became increasingly more important, and was later addressed with considerable funding support during Phase I, the DMF did not identify climate change parameters as identified risks. In retrospect, this is an important omission. Given the margins of error in global climate modeling and the uncertainty surrounding future predictions, quantified limits need to be specified as assumptions; anything beyond these limits would then become risks to the program.

## 4.2 Major Lessons Learned

As mentioned earlier, the findings of the three major evaluations conducted during Phase I were mostly positive, and their recommendations consistent. The program managed to incorporate their results during Phase I as part of its adaptive management strategy. The design of Phase II further addresses all the issues identified as summarized in Section 5.4 of this document.

The evaluations concluded that although the goals, scope and approach of CEP-BCI were relevant, technically-sound, and well-aligned with regional needs, mainstreaming environmental issues across the economic development sectors remained weak. They identified a need to strengthen the strategic and operational capacity of the WGE and to improve communication with other GMS working groups. Improved integration of the various CEP-BCI components could enhance program integrity and capitalize on potential synergies. The evaluations recommended that CEP-BCI should be better integrated with ADB country programs to maximize the effectiveness of regional, national and sector ADB programs.

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[19] ADB, 2005, *Technical Assistance Report,* Proposed Technical Assistance Core Environment Program and Biodiversity Conservation Corridors Initiative in the Greater Mekong Subregion, Manila.

[20] Footnote 20.

The evaluations identified the main impacts of CEP-BCI as national benefits from subregional cooperation, aided in part by building on existing country initiatives. They stated that GMS countries need to make such progress before any harmonization or regionalization of environmental issues can take place, and that regional initiatives will only be possible and successful after countries have developed their national systems and institutional capacity to an adequate level. Although the subregion has improved its environmental management capacity across all sectors, it has focused on technical capacity and paid insufficient attention to institutional and organizational capacity development. In particular, the program had missed opportunities to influence policy and promote institutional development. The evaluations identified the need to improve communication and knowledge flow between EOC and GMS countries and in support of such capacity development.

The evaluations agreed that the DMF was inadequate for tracking program progress and effectiveness. The related reporting systems were unable to clearly describe progress toward intended impact and outcomes. The DMF and program interventions did not adequately address the cross-cutting issues of poverty, gender and ethnicity, and as a consequence, the program missed opportunities to capitalize on potential synergies arising from gender roles or indigenous knowledge. In addition, the evaluations concluded that the program had not responded effectively to emerging development pressures, particularly mining and land concessions.

The evaluations concurred that the geographic focus of the program on the GMS economic corridors was correct, as it had (i) enabled the assessment of actual impacts on landscapes and livelihoods, (ii) facilitated programmatic coherence at the subregional and component level, and (iii) provided a platform for addressing cross-sector challenges. They concluded that the EOC had proven effective in its role as secretariat to the WGE and in providing technical support. However, it required further development as a knowledge and information hub, and stronger linkages with NSUs, the WGE and other development sectors.

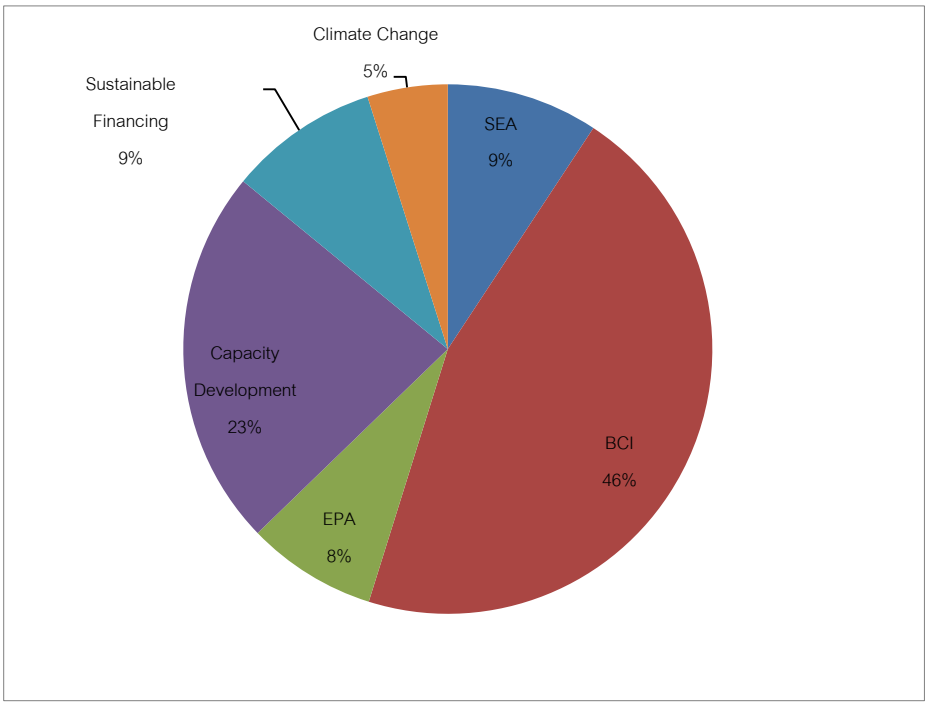
## 4.3 Financial Analysis

Appendix 5 presents financial information, including details on revenue by source; expenditure by category, component and year; and the program's financial position as of the end of 2012. While Phase I expenditure and activity implementation ended in mid-2012, final liquidation and closing of Phase I accounts has since continued.

ADB and three development partners co-financed CEP-BCI. The development partners transferred funds to ADB, which then disbursed them through Letters of Agreement (LOAs), consultancy contracts or as advances to implementing partners through the EOC. ADB used 5% of liquidated funds for its management of the program funds. Co-financing partners have delivered all expected funds, which have been committed to program utilization. As of 31 December 2012, $27,973,519.80 had been disbursed.

The main instruments for CEP-BCI program delivery were LOAs and contracts with institutions and individuals, which together accounted for over 77% of total expenditure. Training and meeting costs accounted for 9.4%, administration and support costs for 8.7%, equipment and supplies for 3.1%, and reports and publications for the remaining 1.7%.

**Figure 3: Disbursement by Component**




As shown in Figure 3, the BCI budget was the largest component, accounting for 46% of all expenditure; second was capacity development, at 24%.

There was good equity in the geographic allocation of funds. There were not great disparities in the amounts received by different countries, and budget disbursement for subregional activities was similar for each country.

## Efficiency of Program Delivery

CEP-BCI developed the EOC as an institution for financial management and program implementation support. Although the program also considered alternative institutional arrangements, such as conservation INGOs or project management consultants, the EOC has proven extremely economically efficient. Its overall administration and management support costs were 8.57% of total expenditure (Appendix 5). This compares very favorably with fees charged by project management consultants or INGOs, which often range from 15% to 25%.

Apart from financial considerations, a number of other factors make the EOC effective. Unlike profit-motivated consultants or INGOs that may be swayed by their own interests, the EOC acts solely in the interest of the CEP-BCI program. Over six years of program implementation, the EOC has established strong institutional relationships with the WGE, GMS countries, implementing partners and other stakeholders that might not have been achieved under other arrangements. Furthermore, commercial program management would not provide the continuity necessary for long-term sustainability, nor would it have allowed the development of institutional

memory that the EOC has fostered. Finally, commercial management of the program, whether through an INGO or a contracting company, would run counter to the longer-term program goal of 'GMS-ization,' taking staffing decisions out of the hands of the program itself.

### Financial Management Lessons Learned

Although all financial management and accounting procedures under CEP-BCI followed established ADB requirements, the EOC played the major day-to-day financial management role during Phase I. The program began with an accountant and one assistant and ended with the accountant being supported by four assistants, all of whom will continue into Phase II. During Phase II, the NSUs will each have one finance position to assist with national advance liquidation and financial management generally.

Despite some delays in the early years, disbursement of funds under CEP-BCI Phase I was generally efficient and timely. Contracts and LOAs were the two main instruments used. Contracting followed normal ADB procedures, which generally worked well, with occasional delays in mobilizing consultants, particularly consultancy teams. Fund disbursement through LOAs was based on advances, which required 80% liquidation before the release of the next tranche. Liquidating the advances was sometimes slow, but the EOC issued bridging funds to maintain program implementation. Different parties' clearing of advances varied, but generally improved over the life of the program.

## 4.4 Lessons from Phase I

Despite the achievements of CEP-BCI Phase I, significant challenges remain, and Phase II will incorporate the lessons learned from Phase I.

Phase II will take a number of measures to strengthen **Environmental Mainstreaming** across economic development sectors. It will continue the institutional mapping exercise to identify institutional capacity development needs and sector entry points in each GMS country. It will strengthen the WGE in this respect by improving communication with other GMS working groups; NSUs will play a key role in this through new networking arrangements with the EOC. Overall, Phase II will take a two-pronged approach to environmental mainstreaming, involving CEP-BCI at the regional level and ADB country programs nationally.

Phase II will address the opportunities for **Policy Dialogue** that Phase I missed. Support will continue for implementing the results of the sector and corridor SEAs, but will also emphasize the use of the results for policy development. Efforts to obtain legal recognition for the biodiversity corridors will build on the early successes in PRC, and the program will use the results of the institutional mapping project to identify entry points for such policy development.

CEP-BCI will emphasize improved **Component Integration** in Phase II to enhance program integrity and capitalize on potential synergies. For example, SEA and EPA have been merged under the new Strategic Planning component (with EPA becoming a broader Monitoring subcomponent). Phase II design explicitly addresses the integration of CEP-BCI with ADB country programs, emphasizing alignment with ADB Country Partnership Strategies, the overall GMS Strategic Framework, and the GMS Regional Investment Framework.

The next phase will rectify the over-emphasis on technical capacity from Phase I by placing a greater focus on **Institutional and Organizational Capacity Development**. The program will use institutional mapping to identify different stakeholders in sustainable development planning, and conduct an institutional capacity development needs assessment aligned with the PPP to harmonize with the GMS program generally. The program will continue its ongoing efforts to

embed the EOC as an institution for technical support, knowledge capitalization, and idea exchange through improved integration with the WGE, NSUs and the EOC. Finally, opportunities for cross-border exchange will enhance subregional capacity, with the EOC acting as a clearing house for subregional exchange and capacity building coordinated by the NSUs.

Based on the lessons from Phase I, the Phase II **design and monitoring framework** (DMF) will enable improved tracking and reporting of program progress, and refine internal tracking of program implementation by incorporating quantitative performance targets and strengthened indicators with baselines. Further, Phase II will address cross-cutting strategies for gender, ethnicity and poverty, and will strengthen socio-economic monitoring frameworks in line with these issues. The changed semi-annual report format will improve reporting on the progress of activities that contribute toward outputs and outcomes, and adjust the financial reporting format to be more consistent with technical progress reporting.

Some of the evaluations found that Phase I of the program had not responded adequately to **Emerging Development Pressures**, particularly mining and land concessions. Consequently, CEP-BCI is increasingly focusing on updating analyses of development pressures for integration into the design of Phase II. This is clearly emphasized in Phase II which will increase support to multi-sector area-based planning.

The EOC requires further development as a **Knowledge and Information Hub**, with strong linkages with the WGE and the other development sectors. It has already developed a new website and the aforementioned online monitoring tools to provide a central portal for stakeholder access to a greater range of environmental data and knowledge. CEP-BCI is pursuing closer collaboration with the ADB-based GMS Secretariat and WGE agencies to develop and share information and knowledge products regionally and nationally. The EOC plans an increased emphasis on demand-driven knowledge products and translating these into the GMS national languages. In addition, it will upgrade information server, hardware, software, and network systems to support a Management Information System for use by GMS countries.

## Appendix 1: Design and Monitoring Framework – Core Environment Program and Biodiversity Conservation Corridors Initiative 2006–2012

| Level | Targets and indicators | Performance of Core Environment Program and Biodiversity Conservation Corridors Initiative (CEP-BCI) Phase I |
|---|---|---|
| Impact<br>Prosperity in the Greater Mekong Subregion, based on equity and sustainable development | By 2014<br>Significant reduction in incidence of poverty among ethnic minority groups and poor households living in the BCI sites and selected Greater Mekong Subregion (GMS) economic corridors | The program did not measure incidence of poverty in BCI households in a regular way, though it did conduct household surveys to establish a socio-economic baseline for communities and to understand the impact of BCI interventions.<br><br>2009 impact assessments of BCI sites in Cambodia, Lao People's Democratic Republic (Lao PDR) and Viet Nam showed that while BCI communities had better physical infrastructure than other communities (better access to road, health care, markets and services), financial assets remained an area of concern, with the majority of households surveyed stating they had insufficient income to meet basic needs.<br><br>CEP-BCI Phase II will institute regular monitoring of socio-economic conditions in BCI and Biodiversity Conservation Corridors Investment Program (BCC) communities. |
| | Measures for mitigating negative impact of development activities in place in GMS economic corridors | 2012: All GMS Strategic Action Plans prepared and published between 2007 and 2012 include social and environmental considerations, and identify specific environmental projects. The GMS Strategic Framework (2012–2022) included a strong focus on environmental results. |
| **Outcome**<br>Sound environmental management systems and operation capacity for enhancing the development potential, performance, and impact of the GMS Program | By 2014<br>Work of the GMS Working Group on the Environment (WGE) integrated with that of other GMS working groups | 2012: In parallel to GMS strategy and planning documents including a rise in environmental trends and issues, the WGE and Environment Operations Center (EOC) have participated more in raising the profile of environmental issues over the last three years in GMS sectors such as agriculture, tourism, transport and energy. The program has initiated cross-sector projects such as strategic environment assessment (SEA) of Power Development Plans in Viet Nam and of tourism in Cambodia and Golden Quadrangle (under WGE), as well as a renewable energy roadmap for the GMS under the Regional Power Trade Coordination Committee (RPTCC). CEP-BCI has identified cross-sector priorities with the GMS Working Group on Agriculture to address during Phase II. |

| Level | Targets and indicators | Performance of Core Environment Program and Biodiversity Conservation Corridors Initiative (CEP-BCI) Phase I |
|---|---|---|
| | Cumulative environmental impact assessment models and tools integrated in GMS Economic Cooperation Program development and investment planning | 2012: This is in process. The program conducted a rapid assessment of environmental issues for the GMS in 2011, and identified environmentally friendly measures for other sector programs, which were integrated into the GMS Strategic Framework (2012–2022) |
| | EOC institutionally anchored in GMS | 2012: Initial national support unit (NSU) structure has been developed, and by the end of Phase I, NSUs were in place in Lao PDR, Cambodia and Viet Nam |
| Updated and upgraded GMS hydropower, roads, and tourism strategies that are environmentally sound and economically efficient, and effective implementation of sustainable management plans for five biodiversity conservation corridors | By 2008<br>Impact assessments of hydropower, roads, and tourism development strategies undertaken<br><br>Integrated sustainable development planning initiated in at least two GMS countries | By 2008: CEP-BCI had initiated three SEAs, focusing on cross border roads in the North-South Economic Corridor (NSEC), hydropower (Viet Nam) and tourism (Cambodia).<br>By 2012: The program had conducted an additional four SEAs focusing on power development (Viet Nam), cross-border tourism (Golden Quadrangle), land-use planning (Quang Nam province, Viet Nam) and river basin planning (Viet Nam). |
| | Establishment of biodiversity corridors initiated in at least five pilot sites in the GMS | 2008: CEP-BCI had initiated biodiversity conservation corridors in six pilot sites in the GMS including Cardamom Mountains (Cambodia), Eastern Plains (Mondulkiri, Cambodia), Xishuangbanna (Yunnan, People's Republic of China [PRC]), Xe Pian – Dong Hua Sao – Dong Ampham (Lao PDR), Tenessarim (Thailand) and Ngoc Linh – Xe Sap (Viet Nam).<br>2012: The program had initiated biodiversity conservation corridors in two additional sites including Jingxi County (Guangxi, PRC) and Cao Bang (Viet Nam). |
| | Pro-poor biodiversity conservation management plans for three protected areas | By 2012: The program had secured support for the development of management plans for three protected areas, including i) the Bangliang Nature Reserve in Jingxi County, Guangxi, PRC; ii) the Meili Snow Mountain National Park, Diquing County, PRC; and iii) a new protected area, Bulong Nature Reserve bordering Meshong, Myanmar and Xishuangbanna, Yunnan, PRC. |
| | Global Environment Facility (GEF) pipeline and investment plan for 2009–2015 developed | CEP-BCI developed the concept and roadmap for GEF financing for the GMS in 2011. The program will cost $20.1 million, of which $1 million will go to a regional project and $19.1 million to country programs in Cambodia, Lao PDR, Thailand and Viet Nam. |

| Level | Targets and indicators | Performance of Core Environment Program and Biodiversity Conservation Corridors Initiative (CEP-BCI) Phase I |
|---|---|---|
| Outputs<br><br>1. Economic corridors and sector environmental assessments | By 2008, valuation of natural resource assets in at least two GMS economic Corridor sections (north–south and east–west) completed | By 2012: The program had conducted two studies that valued the ecosystem services along GMS corridors and BCI sites, including the Xishuangbanna BCI site (Yunnan, PRC) and Champassak province (Lao PDR). Valuation of natural assets was built in the methodology for most SEAs conducted under the program. |
| | By 2007, assessment reports on hydropower, road, and tourism development strategies, and cumulative impact assessment of at least two selected sections of the GMS economic corridors, completed | By 2012: The program had completed assessment reports for six strategies/plans, including cross border roads (NSEC), hydropower (Viet Nam), tourism (Cambodia), power development (Viet Nam), cross-border tourism (Golden Quadrangle) and land-use planning (Quang Nam province, Viet Nam). The program has not yet conducted cumulative impact assessments for any economic corridors. |
| 2. Biodiversity conservation | By 2008, at least five biodiversity corridor sites established, poverty reduction measures and ecosystem restoration undertaken, and payment for ecosystem services (PES) mechanisms developed | By 2008: CEP-BCI had initiated biodiversity conservation corridors in six pilot sites in the GMS, and by 2012 had established an additional two.<br><br>By 2011: In the BCI sites, the program undertook poverty reduction measures, and established 181 committee/development funds at the community level. These disbursed just over $337,000 to local communities. The program also undertook ecosystem restoration, with approximately 3,700 ha of forest restored/enriched during the project. The project included 57 investments for small-scale infrastructure including schools, health clinics and other government services.<br>BCI scaled up its activities in Cambodia, Lao PDR and Viet Nam in 2010 into the Biodiversity Conservation Corridors (BCC) project, with the three countries receiving loans or grants from ADB worth $69 million.<br><br>The program partnered with the Asia Regional Biodiversity Conservation Program funded by the United States Agency for International Development (USAID) to raise awareness about PES in the GMS, although it did not instate any mechanisms for this at the BCI pilot sites. |

| Level | Targets and indicators | Performance of Core Environment Program and Biodiversity Conservation Corridors Initiative (CEP-BCI) Phase I |
|---|---|---|
| 3. Environmental performance assessments (EPAs) institutionalized and integrated, and sustainable development planning initiated | By 2008, all GMS countries produced EPAs to set environmental standards, and at least two countries started using integrated sustainable development planning tools and EPA results | By 2008: CEP-BCI finalized and disseminated its initial round of GMS national EPA reports (2003–2007).<br><br>By 2012: The program had prepared its second round of EPA reports (2007–2010) for GMS countries. The EPA analytical framework has gained broad acceptance in GMS countries, and there is demonstrated improvement in national capacity to benchmark environmental performance and monitor socio-economic conditions.<br><br>By the end of 2012, the program had launched an interactive statistics portal and digital atlas based partially on EPA and related data. |
| 4. Regional environmental management capacity development and institutionalization | By March 2006, EOC operational | The program established the EOC in April 2006, so it was operational throughout the course of the program, and will continue during the next phase of the CEP-BCI. By 2012, the EOC is a fully functional secretariat to the WGE and is developing as a knowledge hub for GMS countries. |
| | By 2008, report on options for anchoring EOC over medium to long term submitted to GMS countries | The program drafted a discussion paper on the institutional future of the EOC in 2008–2009 based on consultations with GMS countries, program partners and donors, and other regional stakeholders. The CEP Phase II strategy reflects those interim recommendations for gradually transferring program implementation to GMS NSUs, while positioning the EOC as an environmental information and knowledge management center for the GMS. |
| 5. Program development, delivery, and sustainable financing | By 2008, report on sustainable financing prepared and at least two sustainable financing mechanisms proposed for establishment in selected GMS countries | By the end of phase, CEP-BCU had not prepared specific recommendations for sustainable financing in the GMS. The Phase II program framework does propose sustainable financing activities for implementation from 2012 onwards. |
| | By June 2006, program impact monitoring system operational | The program developed a monitoring framework for BCI sites in 2006 in conjunction with multiple stakeholder groups, and completed baseline studies by 2009. In 2012, the framework remained semi-operational, with some in-depth monitoring occurring for select activities (i.e. BCI sites). |
| | By 2008, investment plan for 2009–2015 developed | By 2009, the program received supplementary financing to extend into 2012. Program leaders prepared a program framework document with a budget of $26.5 million in 2011 for the 2012–2016 period, which was endorsed at the 3rd GMS Environmental Ministers Meeting (EMM). By the end of 2012, the program secured financing of $23.1 million and an ADB RETA for Phase II. |

## Appendix 2: CEP-BCI Major Partners 2006–2012

| **Working Group on Environment Ministries** |
|---|
| Kingdom of Cambodia – Ministry of Environment |
| People's Republic of China – Ministry of Environmental Protection |
| Lao People's Democratic Republic (Lao PDR) – Ministry of Natural Resources and Environment |
| Union of Myanmar – Ministry of Environmental Conservation and Forestry |
| Kingdom of Thailand – Ministry of Natural Resources and Environment |
| Socialist Republic of Viet Nam – Ministry of Natural Resources and Environment |
| **Co-financers** |
| Asian Development Bank |
| Government of Finland |
| Government of the Netherlands |
| Government of Sweden |
| **Implementing Organizations (Letter of Agreement partners)** |
| National Science and Technology Development Agency, Ministry of Science and Technology, Thailand |
| Aidenvironment, Netherlands |
| Asian Institute of Technology, Thailand |
| Birdlife International, Asia Region, Japan |
| Clean Air Asia, Philippines |
| Food and Agriculture Organization of the United Nations, Regional Office Asia-Pacific, Thailand |
| Institute for Global Environmental Strategies, Japan |
| International Union for Conservation of Nature, Asia Regional Office, Thailand |
| Murdoch University, Australia |
| Mae Fah Luang University, Thailand |
| Science Technology, Lao PDR |
| Stockholm Environment Institute, Thailand |
| United Nations Environment Programme, Regional Resource Center, Thailand |
| WildAid Cambodia |
| Wildlife Conservation Society, Cambodia & Thailand |
| World Wide Fund for Nature, Cambodia, Lao PDR & Viet Nam |

# Appendix 3: Training and Learning Events Conducted April 2006 to May 2012

| Title | Event Type | Date | Location |
|---|---|---|---|
| **Component 1: Strategic Environment Assessments (SEAs)** | | | |
| Regional Planning Workshop for Component 1 | Workshop | 1 Aug 2006 | Bangkok, Thailand |
| SEA Training for Provincial and National Officials | Training | 2–3 Oct 2007 | Phnom Penh, Cambodia |
| Inception workshop of the SEA of the 4th Power Development Plan of Viet Nam (PDP IV) | Workshop | 6–7 Jun 2007 | Hanoi, Viet Nam |
| Workshop on Learning Movement on SEA: A Tool for Public Policy Development | Workshop | 24–27 Apr 2007 | Bangkok, Thailand |
| SEA Training | Training | 1 Apr 2007 | Bangkok, Thailand |
| Scoping Workshop for SEA of the Tourism Sector | Workshop | 7 Jun 2007 | Sihanoukville, Cambodia |
| Hydropower SEA Scoping Workshop | Workshop | 8 Nov 2007 | Hanoi, Viet Nam |
| North-South Economic Corridor (NSEC) SEA Scoping Workshop | Workshop | 1 Apr 2008 | Kunming, People's Republic of China (PRC) |
| SEA of Hydropower – Final Workshop | Workshop | 17 Jul 2008 | Hanoi, Viet Nam |
| SEA of the Tourism Sector – Final Workshop | Workshop | 28 Aug 2008 | Phnom Penh, Cambodia |
| Experts' Workshop on SEA in East Asia and Pacific Region | Workshop | 4 Dec 2008 | Hanoi, Viet Nam |
| International Association for Impact Assessment —Session on SEA within the Greater Mekong Subregion (GMS) by the Environment Operations Center (EOC) | Workshop | 1 May 2008 | Perth, Australia |
| Valuation and Weighting Training | Training | 1 Apr 2008 | Viet Nam |
| Multi-stakeholder Training to explore alternate impact scenarios within the 6th Power Development Plan of Viet Nam (PDP VI) | Training | 1 Jan 2008 | Hanoi, Viet Nam |
| Experiences and Challenges in Biodiversity Policy Development in GMS Countries | Workshop | 19–21 Aug 2009 | Hanoi, Vietnam |
| GMS Regional Trading and Environmentally Sustainable Development of Electricity Infrastructures | Workshop | 14–18 Sep 2009 | Bangkok, Thailand |
| Spatial Modeling for SEA | Training | 30 Nov–1 Dec 2009 | Danang, Viet Nam |
| SEA and Climate Change | Training | 25–26 Nov 2009 | Hanoi, Viet Nam |
| Review and Assessment of GMS Power Systems– Part II (Module 4) | Workshop | 17–18 Sep 2009 | Bangkok, Thailand |
| Review and Assessment of GMS Power Systems– Part II (Modules 1–3) | Workshop | 20–22 Jan 2010 | Bangkok, Thailand |
| Quang Nam land use planning SEA scoping workshop | Workshop | 4–5 May 2010 | Hoi An, Viet Nam |
| Quang Nam land use planning SEA training workshop | Workshop | 5–6 Aug 2010 | Danang, Viet Nam |
| Geographic Information System (GIS) for SEA impact assessment training | Training | | |
| Basic ArcGIS Training — GIS for SEA Baseline Assessment | Training | 26–28 Jan 2010 | Cambodia or Quang Nam/Viet Nam? |

| Title | Event Type | Date | Location |
|---|---|---|---|
| Golden Quadrangle tourism SEA inception workshop | Workshop | 8–9 Feb 2010 | Bangkok, Thailand |
| GIS for SEA Baseline Assessment — developing meaningful thematic map overlays | Workshop | Jul 2010 | Tam Ky, Quang Nam, Viet Nam |
| Workshop to raise awareness on spatial multi-criteria analysis (SMCA) as a tool to support relevant planning authorities to better respond to province level development challenges | Workshop | Jun 2010 | Savannakhet, Lao People's Democratic Republic (Lao PDR) |
| Workshop to identify socioeconomic and environmental issues associated with the power development plan | Workshop | Jul 2010 | Quy Nhon, Viet Nam |
| Golden Quadrangle tourism SEA national scoping workshops | Workshop | 24–27 Aug 2010 | Chiang Rai, Thailand; Vientiane, Lao PDR; Kunming, PRC |
| GMS Regional Trading and Environmentally Sustainable Development of Electricity Infrastructures (Final Workshop) | Workshop | 29 Sep–1 Oct 2010 | Bangkok, Thailand |
| Consultation and Planning Workshop for Strategic Environmental Assessment of Tourism in the Golden Quadrangle | Workshop | 29 May – 2 Jun 2011 | Kunming, PRC |
| Lao PDR–Golden Quadrangle tourism SEA training workshop | Training | 25 Aug 2011 | Vientiane, Lao PDR |
| Golden Quadrangle tourism planning workshop | Workshop | 20–21 Sep 2011 | Chiang Rai, Lao PDR |
| Golden Quadrangle tourism SEA national consultative workshops | Workshop | 26 Oct–2 Nov 2011 | Bokeo, Lao PDR; Chiang Rai, Thailand; Jinghong, PRC |
| Golden Quadrangle Regional Workshop for Discussion and Endorsement of SEA Recommendations – Final workshop | Workshop | 7 Feb 2012 | Luang Prabang, Lao PDR |
| Final regional workshop on SEA of tourism plans in the Golden Quadrangle | Workshop | 29–30 Mar 2012 | Luang Prabang, Lao PDR |
| **Component 2: Biodiversity Conservation Corridors Initiative (BCI)** | | | |
| BCI International Symposium | Workshop | 27–28 Apr 2006 | Bangkok, Thailand |
| International Workshop: 'Biodiversity and Socioeconomic Assessment—Harmonization of Approaches in the GMS' | Workshop | 4–6 Oct 2006 | Bangkok, Thailand |
| Finance Guidelines for BCI Implementation | Workshop | 11 Oct 2006 | Vientiane, Lao PDR |
| Finance Guidelines for BCI Implementation | Workshop | 13 Oct 2006 | Phnom Penh, Cambodia |
| Finance Guidelines for BCI Implementation | Workshop | 17 Oct 2006 | Hanoi, Viet Nam |
| Training course on Regional and National Biodiversity Modeling and Analysis | Training | 6–24 Nov 2006 | Enschede, Holland |
| Training: 'Remote Sensing and GIS – A beginner's course' | Training | 13–17 Nov 2006 | Bangkok, Thailand |
| Orientation workshop for staff of BCI project | Workshop | 26–28 Mar 2007 | Kunming, PRC |
| Training: 'GIS-based Present-State Biodiversity Modeling and Analysis in the GMS' | Training | 26 Mar–6 Apr 2007 | Hanoi, Viet Nam |

| Title | Event Type | Date | Location |
|---|---|---|---|
| Workshop on Alignment of Thailand's Policies on Biotechnology and Biosafety | Workshop | 16 May 2007 | Bangkok, Thailand |
| Advanced training course on Regional and National Biodiversity Modeling and Analysis | Workshop | 11–29 Jun 07 | Enschede, Holland |
| Technical Workshop on Allocating Land Use Change with the CLUE Model | Workshop | 23–25 Jul 2007 | Hanoi, Viet Nam |
| International Forum on Biodiversity Conservation | Workshop | 17-18 Oct 2007 | Kunming, PRC |
| Training: 'GIS-based Future-State Biodiversity Modeling and Analysis in the GMS' | Training | 9–21 Nov 2007 | Hanoi, Viet Nam |
| Pre-training course on CLUE Model | Training | 10–11 Nov 2007 | Hanoi, Viet Nam |
| Training on Future Scenario BD Modeling Using CLUE and GLOBIO Models in GIS | Training | 12–23 Nov 2007 | Hanoi, Viet Nam |
| BCI Workshop | Workshop | 18–21 Mar 2008 | Chiang Rai, Thailand |
| BCI Subregional Exchange Meeting for Implementing Agencies | Workshop | 14–16 Sep 2008 | Bangkok, Thailand |
| Daily on-the-ground training | Training | 2008 *date not available | Cardamoms, Cambodia |
| Training course on Siamese Crocodiles | Training | 2008 | Cardamoms, Cambodia |
| National meeting on CPA network annual munities achievements | Workshop | 2008 | Cardamoms, Cambodia |
| Workshops on internal CPA network management | Workshop | 2008 | Cardamoms, Cambodia |
| Training on patrolling equipment use and CPA management | Training | 2008 | Cardamoms, Cambodia |
| Monthly tutoring on patrolling and dealing with illegal operation | Training | 2008 | Cardamoms, Cambodia |
| Information on integrating conservation into the education program | Workshop | 2008 | Cardamoms, Cambodia |
| Awareness training on land management issues | Training | 2008 | Eastern Plains, Cambodia |
| 1.5-day training relating to management of SBCA | Training | 2008 | Eastern Plains, Cambodia |
| Training on boundary mapping and environment education | Training | 2008 | Eastern Plains, Cambodia |
| Training on MRM regulations and consultations process | Training | 2008 | Eastern Plains, Cambodia |
| Training on PLUP, the Forestry and Land Laws and human rights to PLUP and CPA committees | Training | 2008 | Eastern Plains, Cambodia |
| Awareness on indigenous land management rights | Workshop | 2008 | Eastern Plains, Cambodia |
| Awareness-raising activities on waste management, the importance of forest, on basic and land concepts of biodiversity, and on land use planning | Workshop | 2008 | Eastern Plains, Cambodia |
| Participatory Rural Appraisal training workshop | Training | 2008 | Xishuangbanna, PRC |

| Title | Event Type | Date | Location |
|---|---|---|---|
| Consultation workshop on corridor boundaries | Workshop | 2008 | Xishuangbanna, PRC |
| Training on several topics | Training | 2008 | Xishuangbanna, PRC |
| BCI pilot site: Khao Yai-Taplan National Park and training needs assessment | Workshop | 2008 | Thailand |
| Participatory Natural Resource management and Participatory Working Process with Community in Natural Resource management and Biodiversity Conservation | Training | 2008 | Thailand |
| Participatory Planning Process for Sustainable Nature Resource management and Biodiversity Conservation | Training | 2008 | Thailand |
| Participatory Ecosystem Monitoring and Assessment | Training | 2008 | Thailand |
| Basic GIS, GPS and Mapinfo (4 courses) | Training | 2008 | Ngoc Linh-Xe Sap, Viet Nam |
| Project management | Training | 2008 | Ngoc Linh-Xe Sap, Viet Nam |
| Advanced GIS, GPS and Mapinfo | Training | 2008 | Ngoc Linh-Xe Sap, Viet Nam |
| Forestation technique—6 courses | Training | 2008 | Ngoc Linh-Xe Sap, Viet Nam |
| Inception workshop on Xishuangbanna BCI site expansion | Workshop | 2009 | Yunnan, PRC |
| Regional SEA—On-the-job Training | Training | 14–18 Sep 2009 | Bangkok, Thailand |
| Regional EMP/SDP On-the-job Training cum Study Visit | Study Visit | 5–10 Jul 2010 | Khammouane and Borikhamxay, Lao PDR |
| BCI Completion Workshop | Workshop | 18–19 Apr 2011 | PRC |
| Study Visit to BCI Pilot Sites | Study Visit | 22 Feb–7 Mar 2009 | PRC and Viet Nam |
| Study Visit to BCI Pilot Sites | Study Visit | 25–30 Mar 2009 | Lao PDR |
| BCI Study Visit to Indonesia and Australia | Study Visit | 20 Feb–4 Mar 2011 | Borneo, Indonesia and Australia |
| Study Visit to BCI Pilot Sites | Study Visit | 26 Apr – 7 May 2012, | Thailand, Vietnam and Cambodia |
| **Component 3: Environmental Performance Assessment (EPA)** | | | |
| Regional inception workshop | Workshop | 29–31 May 2007 | Chiang Mai, Thailand |
| Regional technical workshop | Workshop | 23–25 Oct 2007 | Bangkok, Thailand |
| PRC inception workshop | Workshop | 13 Dec 2007 | Beijing, PRC |
| Inception workshop on EPA | Workshop | 21 Jan 2008 | Hanoi, Viet Nam |
| Regional EPA and sustainable development planning training | Training | 26–30 May 2008 | Khon Kaen, Thailand |
| Cambodia inception workshop | Workshop | 18–19 Feb 2008 | Phnom Penh, Cambodia |
| Viet Nam inception workshop | Workshop | 21 Jan 2008 | Hanoi, Viet Nam |
| Thailand inception workshop | Workshop | 4 Feb 2008 | Bangkok, Thailand |

| Title | Event Type | Date | Location |
|---|---|---|---|
| Lao PDR inception workshop | Workshop | 6–8 Feb 2008 | Vientiane, Lao PDR |
| Yunnan inception workshop | Workshop | 9 Apr 2008 | Kunming, PRC |
| Guangxi 1st consultation workshop | Workshop | 10–11 Apr 2008 | Nanning, PRC |
| NSEC SEA – Regional Impact Assessment Workshop | Workshop | 24–26 Nov 08 | Bangkok, Thailand |
| Thailand local EPA training | Training | 26–27 Nov 2008 | Chiang Mai, Thailand |
| Thailand 1st consultation workshop | Workshop | 22–23 May 2008 | Cha-am, Thailand |
| Cambodia local EPA training | Training | 9–10 Jun 2008 | Siem Reap, Cambodia |
| Lao PDR local EPA training | Training | 26–27 Jun 2008 | Vientiane, Lao PDR |
| Thailand 2nd consultation workshop | Workshop | 20 Aug 2008 | Bangkok, Thailand |
| EPA Conference (Provincial level back-to-back with international conference) | Workshop | 28 Sep 08 | Beijing, PRC |
| Viet Nam local EPA training | Training | 23–24 Sep 2008 | Do Son, Viet Nam |
| Viet Nam local EPA training | Training | 29 Oct 2008 | Hanoi, Viet Nam |
| NSEC SEA – Regional Impact Assessment Workshop | Workshop | 24–26 Nov 08 | Bangkok, Thailand |
| Thailand local EPA training | Training | 26–27 Nov 2008 | Chiang Mai, Thailand |
| Lao PDR 1st consultation workshop | Workshop | 9 Dec 2008 | Vientiane, Lao PDR |
| Cambodia 1st consultation workshop | Workshop | 5–6 Feb 2009 | Phnom Penh, Cambodia |
| Cambodia 2nd consultation workshop | Workshop | 18–19 Feb 2010 | Sihanoukville, Cambodia |
| Myanmar inception workshop | Workshop | 1–2 Apr 2009 | Yangon, Myanmar |
| Myanmar 1st consultation workshop | Workshop | 15 May 2009 | Yangon, Myanmar |
| Myanmar local EPA training | Training | 20 May 2009 | Yangon, Myanmar |
| Guang Xi 2nd consultation workshop | Workshop | 11–12 Jun 2009 | Nanning, PRC |
| Cambodia technical training | Workshop | 30 Sep 2009 | Phnom Penh, Cambodia |
| Myanmar 2nd consultation workshop | Workshop | 2–3 Dec 2009 | Yangon, Myanmar |
| Yunnan 2nd consultation workshop | Workshop | 1 Apr 2010 | Kunming, PRC |
| Yunnan local EPA training | Training | 2 Apr 2010 | Kunming, PRC |
| Viet Nam consultation workshop | Workshop | 18–19 Apr 2010 | Do Son, Viet Nam |
| Lao PDR 2nd consultation workshop | Workshop | 27 Apr 2010 | Vientiane, Lao PDR |
| Yunnan 1st consultation workshop | Workshop | 10 Jun 2010 | Kunming, PRC |
| Guangxi completion workshop | Workshop | 17 Jun 2010 | Nanning, PRC |
| Guangxi local EPA training | Training | 18 Jun 2010 | Nanning, PRC |
| PRC completion workshop | Workshop | 10 Jul 2010 | Beijing, PRC |
| EPA lessons learned and regional environmental performance index (EPI) workshop | Workshop | 7–9 Dec 2010 | Kunming, PRC |
| **Component 4: Capacity Building** | | | |
| National Support Unit (NSU) Orientation workshop | Workshop | 10–17 Jun 2007 | Guilin, Guangxi, PRC |
| EPA Training and consultation workshop | Workshop | 20–21 May 2009 | Yangon, Myanmar |

| Title | Event Type | Date | Location |
|---|---|---|---|
| ASEAN Regional Workshop Series: Payment for Ecosystem Services (PES) Enabling Conditions 1 | Workshop | 19 Jun–1 Jul 2009 | Bangkok, Thailand |
| Facilitating Power Trade and Environmentally Sustainable Development of Electricity Infrastructure | Training | 29 Jun–3 Jul 2009 | Phnom Penh, Cambodia |
| Workshop on Experiences and Challenges in Biodiversity Policy Development in GMS Countries | Workshop | 19–21 Aug 2009 | Hanoi, Viet Nam |
| SEA and Climate Change | Seminar | 25–26 Oct 2009 | Hanoi, Viet Nam |
| SMCA Criterion Tree Consultation | Training | 28 Oct 2009 | Lao PDR |
| Integrated Sustainable Development Planning and Strategies—EOC–Phnom Penh Plan (PPP) | Training | 14–18 Dec 2009 | Bangkok, Thailand |
| SMCA GIS Training of Trainers | Training | 12–13 and 16–17 Feb 2010 | Vientiane, Lao PDR |
| SEA and Safeguards for Energy and Transport Planning Sectors (EOC–PPP) | Training | 13–17 Feb 2012 | Bangkok, Thailand |
| ASEAN Regional Workshop Series: PES Enabling Conditions 2 | Workshop | 21–22 Jun 2010 | Dalat, Viet Nam |
| Orientation and Training Workshop for CEP-BCI NSUs | Training | 6–7 Oct 2011 | Bangkok, Thailand |
| Integrated Sustainable Development Planning and Strategies (EOC–PPP) | Training | 13–17 Dec 2010 | Bangkok, Thailand |
| **Component 5: Program Development** | | | |
| Working Group on Environment (WGE) First Technical Meeting | Meeting | 12–13 Dec 2006 | Bangkok, Thailand |
| WGE 13th Annual Meeting | Meeting | 13–15 Jun 2007 | PRC |
| US Environmental Protection Agency visit | Study Visit | 17–25 Aug 2007 | Washington DC, USA |
| 2nd GMS Study Visit: Biofuels Development and Environmental Management | Study Visit | 23–30 Sep 2007 | Bangkok, Thailand, Yunnan, PRC |
| 2nd WGE Semi-Annual Meeting | Meeting | 28 Nov 2007 | Videoconference |
| 2nd GMS Environment Ministers' Meeting | Meeting | 28–30 Jan 2008 | Vientiane, Lao PDR |
| GMS Environment Seminar on Issues and Sustainable Options for the Mekong | Workshop | 25–27 Feb 2008 | Bangkok, Thailand |
| WGE Brainstorming Workshop | Meeting | 6–9 May 2008 | Bangkok, Thailand |
| WGE 14th Annual Meeting | Meeting | 1–2 Jul 2008 | Luang Prabang, Lao PDR |
| GMS-EOC Programming Mission (Viet Nam) | Meeting | 18–20 Aug 2008 | Hanoi, Viet Nam |
| GMS-EOC Programming Mission PRC | Meeting | 26–29 Aug 2008 | Beijing, PRC |
| GMS-EOC Programming Mission Lao PDR) | Meeting | 1–2 Sep 2008 | Vientiane, Lao PDR |
| GMS–EOC Programming Mission (Thailand) | Meeting | 8 Sep 2008 | Bangkok, Thailand |
| GMS–EOC Programming Mission (Cambodia) | Meeting | 10–12 Sep 2008 | Phnom Penh, Cambodia |
| GMS–EOC Programming Mission (Myanmar) | Meeting | 15 Sep 2008 | Bangkok, Thailand |
| Sustainable community forestry management in Siam Reap province/Community eco-tourism management in Preah Vihear province | Study visit | 2008 | Eastern Plains – Cambodia |

| Title | Event Type | Date | Location |
|---|---|---|---|
| WGE 3rd Semi-annual Meeting | Meeting | 13 Jan 2009 | Vientiane, Lao PDR |
| GMS Senior Officials Meeting and GMS Ministers Meeting | Meeting | Jun 2009 | Hua Hin, Thailand |
| WGE 15th Annual Meeting | Meeting | 2–3 Jul 2009 | Bangkok, Thailand |
| WGE 4th Semi-annual Meeting | Meeting | 25–26 Nov 2009 | Bangkok, Thailand |
| WGE 16th Annual Meeting | Meeting | 24–25 Jun 2010 | Hanoi, Viet Nam |
| Payment for Environmental Services | Study Visit | 6–17 Jul 2010 | USA |
| Economic Instruments for Environmental Protection in the GMS | Workshop | 13–15 Sep 2010 | Beijing, PRC |
| WGE 5th Semi-annual Meeting | Meeting | 29–30 Nov 2010 | Ho Chi Minh, Viet Nam |
| Working Together for Biodiversity in the GMS | meeting | 4–6 May 2011 | Hanoi, Viet Nam |
| A regional meeting to discuss the possibility of a regional global environment facility program | Meeting | 10–11 May 2011 | Bangkok, Thailand |
| WGE 17th Annual Meeting | Meeting | 24–25 May 2011 | Siem Reap, Cambodia |
| WGE 6th Semi-annual Meeting | Meeting | 14 Dec 2011 | Bangkok, Thailand |
| GMS 2020: Balancing Economic Growth and Environmental Sustainability | Meeting | 20–21 Feb 2012 | Bangkok, Thailand |
| Information Dissemination Workshop for Government of Finland's Evaluation on CEP-BCI 2005–2010 and Appraisal of CEP-BCI 2012–2016 Regional Consultation for CEP-BCI 2016 | Workshop | 24 Feb 2011 | Bangkok, Thailand |
| WGE 18th Annual Meeting | Meeting | 17-18 May 2012 | Jinghong, PRC |
| **Component 6: Climate Change** | | | |
| 2nd GMS Development Dialogue: Climate makers or Climate takers? | Meeting | 21 May 2008 | Bangkok, Thailand |
| Regional Training on Air Pollution Monitoring and Assessment | Training | 8–10 Oct 2008 | Bangkok, Thailand |
| Regional Workshop on Impacts and Adaptation to Climate Change | Workshop | 24–26 Feb 2009 | Ha Noi, Viet Nam |
| Regional meeting of technical experts on Impacts and Adaptation to Climate Change | Workshop | 8– 9 Sep 2009 | Bangkok, Thailand |
| Regional meeting of scientists and policy makers on Impacts and Adaptation to Climate Change | Workshop | 24 Nov 2009 | Bangkok, Thailand |
| Climate Change vulnerability and risk assessment for BCI sites | Workshop | 16 Nov 2010 | Bangkok, Thailand |
| Scoping workshop on Climate Change vulnerability and risk assessment for BCI sites | Workshop | 22 Nov 2010 | Vientiane, Lao PDR |
| Scoping workshop on Climate Change vulnerability and risk assessment for BCI sites | Workshop | 25 Nov 2010 | Ha Noi, Viet Nam |
| Scoping workshop on Carbon Neutral Transport Corridors— Lao PDR | Workshop | 16 Feb 2011 | Vientiane, Lao PDR |
| Scoping workshop on Carbon Neutral Transport Corridors—Thailand | Workshop | 28 Feb 2011 | Bangkok, Thailand |

| Title | Event Type | Date | Location |
|---|---|---|---|
| Scoping workshop on Carbon Neutral Transport Corridors—Viet Nam | Workshop | 2 Mar 2011 | Hanoi, Viet Nam |
| Consultation workshop on climate change vulnerability study of Xishuangbanna BCI | Workshop | 4 Jul 2011, | Jinghong, PRC |
| Workshop on East-West Economic Corridor freight and logistics energy efficiency | Workshop | 7 Oct 2011 | Khon Kaen, Bangkok |
| Climate Change Impacts, Vulnerability and Adaptation in Agriculture Areas in BCI Pilot Sites | Workshop | 21 Oct 2011 | Pakse, Lao PDR |
| Adaptation Workshop on Climate Change Impacts, Vulnerability, and Adaptation in Agriculture Area in BCI Pilot Sites Study | Workshop | 3–4 Nov 2011 | Danang, Viet Nam |
| Clean Truck Fleet Training Workshop | Training | 16–17 Jan 2012 | Khon Kaen, Bangkok |

# Appendix 4: Core Environment Program and Biodiversity Conservation Corridors Initiative Publications

| Year | Title | Partner(s) |
|---|---|---|
| **Produced by CEP-BCI** | | |
| 2005 | BCI Strategic Framework and Technical Assessment | |
| 2006 | Strategic Environmental Assessment in the Greater Mekong Subregion – Status Report | |
| 2007 | BCI International Symposium Proceedings | |
| 2008 | BCI Pilot Site Implementation Report | |
| | Environmental Assessment of Economic Corridors and Sectors – Status Report | |
| | Subregional Environmental Performance Assessment Report | |
| | Cambodia Environmental Performance Assessment Report | |
| | PRC – Yunnan Province Environmental Performance Assessment Report | |
| | Lao PDR Environmental Performance Assessment Report | |
| | Myanmar Environmental Performance Assessment Report | |
| | Thailand Environmental Performance Assessment Report | |
| | Viet Nam Environmental Performance Assessment Report | |
| | Environmental Performance Assessment Synthesis Report | |
| 2009 | Strategic Environmental Assessment for Sustainable Hydropower Development in Viet Nam – Policy Summary | |
| | Strengthening Sustainable Tourism – Strategic Environmental Assessment of the Tourism Sector in Cambodia | |
| 2011 | Applying Spatial Tools to Support Sustainable Planning in the GMS | |
| | Biodiversity and Conservation Corridors Initiative 2006–2011 Report | |
| | CEP-BCI Phase I Report | |
| | CEP-BCI Program Framework Document 2012–2016 | |
| | Climate Change Vulnerability, Adaptation and Mitigation in the GMS | |
| | Policy Brief: Strategic Environmental Assessment of Power Development Plans in Viet Nam | |
| 2012 | GMS 2020 International Conference – Proceedings | |
| | GMS Atlas of the Environment – 2nd Edition | |
| | CEP-BCI brochure | |
| | Paper: Modeling the Implications of Land Demand for Hydropower Catchments – SEA of Viet Nam's Quang Nam Province Land Use Plan 2011–2020 | |
| | Paper: Internalizing the Externalities: SEA of the Viet Nam Power Development Plan VII | |
| **Supported by CEP-BCI** | | |
| 2009 | Asia-Pacific Forestry Sector Outlook Study (APFSOS) II Country Papers – Lao PDR, Myanmar, PRC, Thailand and Viet Nam | FAO |
| 2010 | Asia-Pacific Forestry Sector Outlook Study (APFSOS) II Country Paper – Cambodia | FAO |
| | Restoring Tenasserim Corridor for Living Connectivity | WCS and Thailand's National Park, Wildlife and Plant Conservation Department. |
| 2011 | Asia-Pacific Forestry Sector Outlook Study (APFSOS) II – Greater Mekong Subregion Report | FAO |
| 2012 | Policy Brief: Forests for a Greener Future | |
| | Policy Brief: Back to Basics – Field Level Forestry | |
| | Policy Brief: The Forest Biodiversity Challenge | |
| | Policy Brief: Reinventing Forest Policies and Institutions | |

| Year | Title | Partner(s) |
|---|---|---|
| | Policy Brief: Learning for the Future – Forestry Training and Education | |
| | Policy Brief: Better Governance, Better Forestry | |
| | Policy Brief: Making Forests Work for the Poor | |
| | Policy Brief: Forests and Gender in a Changing Environment | |

# Appendix 5: Financial Mobilization for Phase I 2006-2012 (Regional Technical Assistance 6289)

## Overall fund disbursement

The program has received all co-financing commitments for Regional Technical Assistance (RETA) 6289, totalling $29.843 million. As reported by the Asian Development Bank (ADB) Controller's Department, the financing partners have fully committed the total contributions as shown in Table A5.1 for the Core Environment Program and Biodiversity Conservation Corridors Initiative (CEP-BCI) Phase I implementation.

**Table A5.1: Phase I Co-financing Contributions**

| Co-financer | Commitment |
|---|---|
| Sweden | $11,086,079.79 |
| Netherlands | $10,463,461.81 |
| Finland | $4,623,656.14 |
| ADB | $3,670,000.00 |
| Total | $29,843,197.74 |

The total disbursement of Phase I funds as of 31 December 2012 is $27.974 million. Of this, the ADB Controller's Department is reviewing $1.389 million for final liquidation. The estimated remaining balance is $654,678 as shown in Table A5.2 below. The Controller's Department will review any further claims for the allocation of these funds.

**Table A5.2: Commitment Balance for Final Liquidation**

| Contributions Received | $29,843,197.74 |
|---|---|
| Less Disbursements | |
| Liquidated Expenditures | ($26,584,350.13) |
| Advance pending liquidation by ADB | ($1,389,169.67) |
| ADB administration fee (estimated) | ($1,215,000.00) |
| Fund Balance | 654,677.94 |

## Environment Operations Center (EOC) Cost Efficiency

As shown in Table A5.3, EOC operations during Phase I accounted for 8.57% of total expenditure. If including ADB technical assistance (TA) administration costs (5% of liquidated expenditure), then total administrative costs amount to approximately 12% of total CEP-BCI Phase I funding.

**Table A5.3: EOC Administrative Costs**

| Administrative Costs | Amount |
|---|---|
| Chief Operating Officer (20% of time on admin) | $133,818.90 |
| Chief Technical Advisor (20% of time on admin) | $80,053.40 |
| Financial Accounting and Management Specialist | $408,897.64 |
| ADB Headquarters Backstop staff (x2) | $28,717.25 |
| EOC Operating Costs as reported by ADB Controllers – includes support staff, rent, etc. | $1,746,816.92 |
| **Total Administrative Costs (2006–2012)** | **$2,398,304.11** |
| | |
| Total Program Disbursement (2006–2012) | $27,973,519.80 |
| **Administrative costs as % of total disbursement** | **8.57%** |

## Liquidation of Outstanding Advances from Letters of Agreement (LOAs)

As of 31 December 2012, the ADB Controller's Department records indicate that $12.558 million has been disbursed to LOA partners, of which 92% has been liquidated. The remaining $1.006 million is pending liquidation by the department. The EOC has reviewed all relevant documents and forwarded them to ADB for final review and liquidation.

Funding partners have submitted an additional $550,000 in claims through the EOC, bringing the total value of claims under LOAs to $13.108 million. These additional claims are pending reimbursement.

All LOA activities were completed by 31 December 2012. Table A5.4 shows the status of each LOA partner's disbursed advances and liquidations.

**Table A5.4: Disbursements to LOA partners as of 31 December 2012 ($)**

| Contract No. | Implementing Agency | Contract Amount | Expenditures Liquidated | Outstanding Advance | Total Disbursement |
|---|---|---|---|---|---|
| V06223 | IUCN, Asia Regional Office | 550,000 | 548,543 | - | 548,543 |
| V06280 | IUCN, Asia Regional Office | 318,000 | 315,395 | - | 315,395 |
| V06345 | World Wildlife Fund, Cambodia | 925,964 | 923,870 | - | 923,870 |
| V06346 | World Wildlife Fund, Lao People's Democratic Republic (Lao PDR) | 968,047 | 874,276 | 93,512 | 967,789 |
| V06357 | Department of National Parks, Thailand | 936,212 | 936,211 | - | 936,211 |
| V06358 | Wildlife conservation Society, Thailand | 81,000 | 80,970 | - | 80,970 |
| V06379 | WildAid Cambodia | 1,275,196 | 1,275,196 | - | 1,275,196 |
| V06380 | Ministry of Environment, Cambodia | 295,184 | 295,013 | 171 | 295,184 |
| V06398 | Ministry of Natural Resources and Environment, Viet Nam | 914,000 | 913,582 | - | 913,582 |
| V06400 | World Wildlife Fund, Viet Nam | 2,200,000 | 2,012,942 | 163,459 | 2,176,402 |
| V06410 | Science Technology, Lao PDR | 300,000 | 283,696 | 16,303 | 300,000 |
| V06418 | State Environmental Protection Administration, People's | 687,254 | 561,995 | 88,004 | 650,000 |

| Contract No. | Implementing Agency | Contract Amount | Expenditures Liquidated | Outstanding Advance | Total Disbursement |
|---|---|---|---|---|---|
| | Republic of China (PRC) | | | | |
| V06419 | State Environmental Protection Administration, PRC (Yunnan) | 658,300 | 629,318 | 10,682 | 640,000 |
| V07047 | Birdlife International | 332,771 | 281,547 | 18,452 | 300,000 |
| V07056 | Mae Fah Luang University | 275,000 | 246,130 | 28,869 | 275,000 |
| V07059 | Institute for Global Environment Strategies | 92,449 | 70,000 | - | 70,000 |
| V07064 | AIT/UNEP Regional Resource Center | 426,515 | 109,439 | 90,560 | 200,000 |
| V07081 | Food and Agricultural Organization of the United Nations | 250,000 | 244,868 | - | 244,868 |
| V07203 | Stockholm Environment Institute | 315,000 | 315,000 | - | 315,000 |
| V07323 | Murdoch University | 150,793 | 150,793 | - | 150,793 |
| V08185 | National Science and Technology Development Agency | 40,443 | 40,443 | - | 40,443 |
| V08220 | Asian Institute of Technology | 80,000 | 69,996 | 10,003 | 80,000 |
| V10007 | Ministry of Natural Resources and Environment – Viet Nam | 295,500 | 271,097 | - | 271,097 |
| V10141 | Ministry of Environmental Protection – PRC | 389,500 | - | 380,000 | 380,000 |
| V11186 | Biodiversity Conservation Agency | 62,000 | 60,866 | - | 60,866 |
| V11305 | Rapid Environmental Assessment of Development Pressure | 62,000 | 39,881 | 6,618 | 46,500 |
| V12064 | Clean Air Initiative–ASIA | 33,000 | - | - | - |
| V12079 | AID Environment | 175,000 | - | 100,000 | 100,000 |
| | LOA Partners – Total | 13,089,132 | 11,551,080 | 1,006,637 | 12,557,717 |

## Fund disbursement by component

Table A5.5 shows detailed disbursements by component for CEP-BCI as of 31 December 2012:

**Table A5.5: Disbursements from All Sources as of 31 December 2012 ($)**

| TA Code | TA Category | All Components | Components | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | Amount | SEA | BCI | EPA | Capacity Building | Program Development | Climate Change |
| 1100 | Consultants' costs | 9,285,738 | 1,683,384 | 1,767,403 | 1,522,561 | 1,588,781 | 1,671,968 | 1,051,638 |
| 1200 | Equipment and supplies | 819,188 | 78,416 | 29,398 | 89,059 | 407,192 | 168,400 | 46,722 |
| 1300 | Training, workshops, seminars, conferences, meetings | 2,637,622 | 300,099 | 179,898 | 68,874 | 1,722,220 | 274,877 | 91,652 |
| 1400 | Reports and publications | 498,808 | 5,543 | 26,739 | 30,319 | 13,692 | 407,724 | 14,790 |
| 1600 | TA Admin & support costs | 1,791,911 | - | 68 | 18 | 1,791,765 | 59 | - |
| 1700 | Other inputs: LOAs | 11,551,080 | 415,748 | 9,958,261 | 424,307 | 601,969 | - | 150,793 |
| | Total – Liquidated Expenditures | 26,584,350 | 2,483,191 | 11,961,769 | 2,135,141 | 6,125,621 | 2,523,029 | 1,355,596 |
| | Outstanding Advances | 1,389,169 | 106,618 | 780,589 | 90,560 | 411,401 | - | - |
| | Total – ADB Disbursement | 27,973,519 | 2,589,810 | 12,742,358 | 2,225,701 | 6,537,022 | 2,523,029 | 1,355,596 |