Regional Consultation On Transboundary Biodiversity Landscapes: Summary of Proceedings and Future Outlook

6 – 7 May 2014, Bangkok

PROGRAM OVERVIEW

1. A Regional Consultation on Transboundary Biodiversity Landscapes (TBLs) was held in Bangkok from 6 to 7 May 2014. The event was attended by over 28 participants, including GMS Working Group on Environment (WGE) representatives from Cambodia, PR China, Lao PDR, Thailand and Viet Nam, as well as from international development partners (**Annex 1**).

2. The overall aim of the consultation was: *to explore the potential for collaboration among relevant parties working on improving management of biodiversity and/or livelihoods in TBLs (and similar landscapes in the GMS)*. Objectives focused on: sharing information about who is working where in relation to biodiversity landscapes; sharing knowledge about TBLs and methods/tools for their study; identifying a potential suite of indicators for monitoring the status of biodiversity and livelihoods; and exploring an informal mechanism to collaborate in TBL management. Outputs are identified for each session in the program (**Annex 2**) and further details, including planned outcomes, can be found in the background concept paper (**Annex 3**).

3. The program was divided into four sessions of presentations followed by panel discussions. Sessions focused on: landscape planning and management initiatives; mainstreaming landscape management strategies into regional, national and provincial planning process; monitoring of landscapes; and regional coordinating and collaboration mechanisms. Panel discussions focused on: potential synergies and collaboration between initiatives; mainstreaming TBL management strategies; monitoring framework; and knowledge exchange mechanisms and investment needs. Presentations delivered by the 14 speakers can be found on the Core Environment Program (CEP) website at: http://www.gms-eoc.org/events/regional-consultation-on-transboundary-biodiversity-landscapes-.

4. Evaluation forms (**Annex 4**) were distributed at the end of the consultation and returned by 17 participants, of whom 93% were male and 76% were GMS nationals.

SUMMARY FINDINGS

5. **TBL activities:** This was the first regional meeting on TBLs in Phase II of the CEP. It provided an opportunity to collate information on who is working where and on what in the GMS. Some of this information is summarized in the table below and also a map showing the location of where many development partners are working is included in the background document (**Annex 1**).

Organization	GMS landscapes	Activities	Methodologies
IUCN/CEPF	Sino-Viet Nam Karst TBL Tonle Sap Lake	Engage civil society in conservation	Empower communities in conservation and mainstream conservation
WWF	6 CEP TBLs (all except Sino-Viet Nam Karst)	All conservation activities: assessment, spatial planning, monitoring etc	Integrated spatial planning Marxn: identify land use inVest: ecosystem services valuation
Birdlife International	9 global programs	Bird conservation, biodiversity monitoring	Monitoring methods: Important Bird Area guidelines; Integrated Biodiversity Assessment Tool (IBAT); Toolkit for Ecosystem Services Site-based Assessment (TESSA)
WCS	10 WCS landscapes, some overlap with CEP TBLs	Conservation, monitoring	Spatial Monitoring Reporting Tool (SMART)
FFI	Sino-Viet Nam Karst TBL and other countries	Transboundary collaboration, other activities	Establish collaboration mechanism and activities via MOU: regular meeting, joint PA, joint surveys/patrols, capacity building
WGE Thailand	TBLs	Corridor conservation	Survey, GIS, etc.
Viet Nam	TBLs	Transboundary collaboration, other activities	Survey, corridor design, etc.
MEP of China	China	Biodiversity assessment and national biodiversity monitoring system	County-based species richness, GIS, modeling, complementary analysis and expert knowledge
Yunnan	Mekong headwaters	Biodiversity monitoring and assessment	GIS, indices, modeling

5. **Session 1 - landscape initiatives -** discussion points included:
   - 90% activities in biodiversity landscapes are just as relevant to TBLs.
   - GEF initiative to explore management of protected area (PA) complexes may have potential relevance (lessons) for TBL management.
   - Terai Arc TBL (India/Nepal) – management overseen by a steering committee led by government.
   - Common protocol needed for co-management of TBLs in GMS countries.
   - Building trust and facilitating cross-border cooperation mechanisms is key role of development partners.
   - Need to engage with (i) civil society and (ii) private sector.
   - Reconciling supply with demand at community levels is a key challenge in TBLs.
   - TBL strategic planning/management needs:
     - ✓ engagement of communities and private sector,
     - ✓ land use baseline information, and
     - ✓ scenarios (with government input) to inform decision makers.
6. **Session 2 - mainstreaming TBL management strategies -** discussion points included:
   - Sustainable mechanisms needed for sharing information, including regional hotspots, at regional, national and local levels.

- China's monitoring methodology may inform M&E approach for GMS landscapes.
- Viet Nam has a comprehensive policy framework in place – how can this be achieved in other GMS countries in a timely manner?
- Need to identify social, economic and environmental investments having long-term benefits.
- Need to identify policy entry points, especially for land use planning.
- China biodiversity assessment case study has transparent governance and implementation mechanism in place.
- TBLs need to be clearly defined.
- Methodologies required for developing TBL management strategies.

There was some discussion about the term "biodiversity landscape" and a need to define such landscapes in terms of their size, scale in relation to ecosystems and ecological functioning. Participants suggested that a platform is needed (steering committee) to guide the TBL planning and management, and communities/civil society/private sector should be engaged in the process.

7. Session 3 - TBL monitoring - discussion points included:

- At regional level – EOC could/should facilitate collection of data and monitor forest quality.
- At national level – methodologies not in place and need coordinating mechanism.
- Indicators should be simple and clearly defined.
- Indicators should not be influenced by many factors.
- Framework (as proposed) is generally okay at landscape level.
- Clear objectives are needed.
- Water quality should be included as an indicator.
- Human-wildlife conflict indicator should be added.
- Need a 'bin' to capture any trend data.

There was little discussion about the TBL Monitoring Framework (**Annex 5**) introduced by EOC as the focus switched to the objectives of TBL Forum. Birdlife International, FFI, WWF, Yunnan and other partners introduced indicators they used in their work and other specific feedback on indicators is listed above. Participants also suggested that EOC should take responsibility to facilitate data collection, sharing information, and indictor development etc.

CI and Birdlife International shared their work on biodiversity monitoring and mentioned that there are much data available for supporting a regional monitoring system. PR China's national biodiversity monitoring system and its extensive data sets raised interest among WGE representatives and others. The challenge is accessing such data to support a regional monitoring platform.

8. Session 4 - regional collaboration - points arising from WGE and other panelists included:

- Cambodia is keen to collaborate with Lao PDR, Thailand and Viet Nam but capacity in government is limited and more cooperation from other government agencies is necessary.
- Thailand will collaborate with Cambodia, Lao and Myanmar. Ecosystem valuation is considered to be very important.

- China and Viet Nam expressed the need for collaboration on transboundary conservation to start from assessment methodology training.
- CEP is most important platform for sharing information and knowledge; universities and other agencies also benefitted. PR China not involved sufficiently in climate change component of CEP. TBL cooperation with Lao is limited by lack of funds – not yet cooperating at provincial level.
- All WGE representatives highlighted the importance of capacity building, including biodiversity assessment, monitoring, corridors and landscape management, transboundary cooperation, livelihood improvement etc. Improved communication and knowledge sharing, training, workshops, study tours would be very useful in this respect. Decision support tools and on-the-job training (learning-by-doing) were highlighted.
- CUT (Communication, Understanding and Trust) is vital for transboundary work. Information Technology is very important in this context (Lao PDR).
- May be necessary to have TBL fora at national levels that feed into a regional forum.
- CBD and Aichai Targets should be embedded into transboundary cooperation mechanisms.
- Separate monitoring of transboundary interventions from ecological integrity and status of landscapes is necessary.
- Policy entry points should be identified in order to determine mechanisms for translating ideas in action. Land use policy and zonation is an important area of policy and planning for addressing and defining entry points.
- Regional mechanism needed for technical coordination.

9. Next steps: Participants worked in small groups to identify next steps, which they then shared in a short plenary session. The following priorities were identified and additional comments made:

- Influence GMS Economic Cooperation Program (ECP) investments for positive biodiversity outcomes with respect to landscapes.
- TBL Monitoring Framework should have extra focus on ecosystem service functions, especially trade-offs (i.e. develop clear rationale for trade-offs to inform decision makers).
- Biodiversity assessment of corridors should be a pre-requisite (baseline) to their monitoring.
- Country management/coordination teams (country focal points/platform)
- Should not focus specifically on TBLs but
  - ✓ work with existing networks (not new landscapes),
  - ✓ financial commitment (ADB+), and
  - ✓ vertical collaboration(local -> national -> regional -> global).
- Information sharing mechanisms, both national and regional.
- Clarification needed on underlying structure of this meeting:
  - ✓ technical discussion on monitoring,
  - ✓ management of landscapes,
  - ✓ partnership development; and

  on objectives of EOC in this initiative and expectations about partnerships.
- Is ADB/EOC looking to fund NGOs to do monitoring work in landscapes?

OUTCOMES

10. **The objectives of TBL Forum** were met with respect to sharing information on who is working where in relation to biodiversity landscapes and sharing knowledge about TBLs and methods/tools for their study. Feedback from the evaluation forms shows consistently high scores achieved for the 14 presentations, between 78% and 88% of the total maximum score. The 4 panel discussions were scored at between 72% and 77% of the total. Quantitative evaluation results are summarized in the table below.

SCORE CRITERIA SCORES	Very satisfactory / excellent 4	Satisfactory 3	Less than satisfactory 2	Unsatifactory / poor use of time 1	No. responses	Sum of scores	% of total score	
PROFILE OF PARTICIPANT								
(a) GMS National = 1; Non-GMS National = 0					**17**	13	**76%**	**GMS nationals**
(b) Gender: Male = 1; Female = 0					**15**	14	**93%**	**males**
(c) Experience includes survey and monitoring = 1					**12**	12		
(c) Experience includes landscape management = 1					**10**	10		
(c) Experience includes transboundary cooperation = 1					**10**	10		
(c) Experience does not include any of the above = 1					**1**	1		
EVALUATION OF SESSIONS								
Opening session								
Introduction to workshop objectives	7	4	2	0	13	44	**85%**	
Session 1								
Introduction to landscape management initiatives in GMS	18	28	3	0	49	162	**83%**	
Panel discussion	5	8	1	2	16	48	**75%**	
Session 2								
TBL landscape management strategy & spatial master plan	28	33	4	0	65	219	**84%**	
Panel discussion	4	8	2	1	15	45	**75%**	
Session 3								
TBL monitoring	20	41	4	0	65	211	**81%**	
Panel discussion	4	7	1	1	13	40	**77%**	
Session 4								
Regional cooperation mechanism	16	27	4	1	48	154	**80%**	
Panel discussion	4	8	2	2	16	46	**72%**	
EVALUATION OF EVENT ORGANIZATION								
- Hospitality and organization	12	5	0	0	**17**	63	**93%**	
- Workshop structure	7	8	1	1	**17**	55	**81%**	
- Workshop materials	6	6	5	0	**17**	52	**76%**	

11. **The third objective** concerning the identification of a potential suite of indicators for monitoring the status of biodiversity and livelihoods in TBLs was not achieved. This was due to the discussion time being taken up by concerns of some participants about the structure of the meeting and a more general acknowledgement that this would require a much longer technical discussion than time permitted. Some participants implied that if EOC wanted partners to

monitor landscapes, then it should resource such activity. EOC's position is about generating synergy from existing monitoring by all partners, though development and application of a common monitoring platform using a suite of indicators that are commonly used or might be welcomed and used by partners.

12. **The fourth objective**, to explore an informal mechanism to collaborate in TBL management, was not explored due to insufficient time. Also, some partners perceived that partners were being asked to buy into a predetermined agenda rather than to help shape it. Importantly, partners indicated that any forum should not be limited to transboundary landscapes, rather it should be inclusive of any landscape. This intervention was welcomed and has informed EOC's further deliberations.

13. **Capacity building:** All WGE representatives mentioned the importance of capacity building for them, including biodiversity assessment, monitoring, corridors and landscape management, transboundary cooperation, livelihood improvement etc. They would also benefit from more communication and knowledge sharing, e.g. training, study tours, and workshops.

FUTURE OUTLOOK

14. Follow up: EOC has discussed the outcomes from consultation internally and briefed its WGE colleagues. At the same time, it has been planning for the 4th Environment Ministers' Meeting (EMM4). Two, related initiatives emerged over the months following the TBL Forum consultation: the first being to use the Environment Minister's Joint Statement as an opportunity to promote the mainstreaming of natural capital across all GMS sectors and respective government agencies; and the second being to establish a GMS Natural Capital Partnership as a tangible output from EMM4. These initiatives are now in motion. They will be supported by two days of events preceding EMM4, the first day (27 January) comprising fora or meetings for business, biodiversity landscape stakeholders and youth. These three events will lead into a Natural Capital Dialogue on the second day (28 January) that, in turn will feed into EMM4 on 29 January.

15. The proposed GMS Natural Capital Partnership will bring together government agencies, businesses, development partners and civil society (including academia, youth etc) to focus on promoting and contributing though partnership working to increased investments in natural capital.

16. The Biodiversity Landscapes Forum (27 January 2015) will focus on the strategic planning and management of biodiversity landscapes, with a particular focus on transboundary cooperation in line with CEP's regional interests.

17. The future beyond EMM4 remains to be determined by EOC and its partners. If there is collective interest and support for establishing a GMS Natural Capital Partnership, then those partners with a special interest in biodiversity landscapes will need to consider how best, in terms of coordinating mechanisms, to reflect this interest within a wider GMS Natural Capital Partnership.

18. EOC remains committed to coordinate its work on TBLs with other partners working on biodiversity landscapes. Monitoring is but one example for potential synergies, particularly if it is feasible to identify a core set of indicators common to many partners' interests. Strategic planning and management of biodiversity at landscape scale, the subject of the Biodiversity

Landscapes Forum, is another example of potential synergies arising from sharing knowledge and experience.

19. A Biodiversity Landscape Forum is one approach, another might be a round table discussion approach as exists for climate in the GMS (Roundtable Discussion on Climate Change Adaptation in the Greater Mekong Subregion).

20. EOC looks forward to exploring with partners an optimal way of coordinating work on biodiversity landscapes in the GMS and developing synergies.

ANNEX 1

Regional Consultation Meeting on Transboundary Biodiversity Landscapes
6-7 May 2014, Bangkok, Thailand

No.	Names	Designation/Organization/Contact Details
WGE COUNTRY DELEGATES		
CAMBODIA		
1	Mr. Sophal Meas	Deputy Director General General Directorate of Administration of Nature Conservation and Protection Phnom Penh, Cambodia
2	Mr. Monyrak Meng	National Project Coordinator of BCCP Deputy Director Department of International Conventions and Biodiversity GDANCP/MoE, Cambodia
PR CHINA		
3	Mr. Jun Wu	Nanjing Institute of Environmental Sciences (NIES) Ministry of Environmental Protection 8 Jiang Wang Miao Street, Nanjing 210042 PR China
4	Ms. Shanshan Dong	Nanjing Institute of Environmental Sciences (NIES) Ministry of Environmental Protection 8 Jiang Wang Miao Street, Nanjing 210042 PR China
5	Ms. Yang Liqiong	Project Officer Yunnan Institute of Environmental Science 27 Xi Yuan Nan Road, 650032 Kunming Yunnan, PR Chia
6	Mr. Weidong Lin	Director, Senior Engineer Guangxi Environmental Protection International Cooperation and Exchange Center Environmental Protection Research Academy of Guangxi 5 Jiaoyu Road, Qingxue District, Nanning Guangxi, PR China
LAO PDR		
7	Mr. Ekvinay Sayaraj	Head of Natural Resources and Environment Research, Information and Statistics Natural Resources and Environment Information Center Ministry of Natural Resources and Environment (MONRE) Vientiane, Lao PDR
8	Mr. Outhai Vongsa	Deputy Director of Wildlife & Aquatic Management Division Lao-GMS Biodiversity Conservation Corridor Project Department of Forest Resource Management Ministry of Natural Resources and Environment (MONRE) Vientiane, Lao PDR
THAILAND		
9	Mrs. Sunee Sakseau	Forestry Technical Officer, Professional Level Chief of International Conventions Coordination Section National Parks and Protected Area Innovation Institute National Park Office

10	Mr. Thammanoon Temchai	Forestry Technical Officer, Professional Level Chief of National Park Wildlife and Protected Area Innovation Center Pechchaburi Province
VIET NAM		
11	Dr. Nguyen The Chinh	Deputy Director General Institute of Strategy and Policy on Natural Resources and Environment (ISPONRE) Ministry of Natural Resources and Environment 479 Hoang Quoc Viet Hanoi, Viet Nam
12	Ms. Huynh Thi Mai	Deputy Director Biodiversity Conservation Agency Viet Nam Environmental Administration Ministry of Natural Resources and Environment Hanoi, Viet Nam
13	Mr. Ngo Tien Dung	Deputy Director General Department of Nature Conservation Viet Nam Administration of Forestry Ministry of Agriculture and Rural Development Hanoi, Viet Nam
DEVELOPMENT PARTNERS / OBSERVERS		
14	Ms. Tracy Farrell	Conservation International Cambodia Program Phnom Penh Center, building C, Sotheros and Sihanouk Blvd Phnom Penh Cambodia
15	Mr. James Tallant	IUCN Regional Office Natural Resources Group 63 Sukhumvit 39, Soi Prompong, Wattana Bangkok 10110, Thailand
16	Mr. Petch Manopawitr	Deputy, Southeast Asia Group IUCN Asia Regional Office 63 Sukhumvit 39, Soi Prompong Wattana, Bangkok 10110 Thailand
17	Mr. Gordon Johnson	UNDP Asia-Pacific Regional Centre 3rd Floor United Nations Service Building Rajdamnern Nok Avenue, Phranakorn Bangkok 10200, Thailand
18	Mr. Joseph D'Cruz	UNDP Asia-Pacific Regional Centre 3rd Floor United Nations Service Building Rajdamnern Nok Avenue, Phranakorn Bangkok 10200, Thailand
19	Dr. Cao Ming	Xishuanbanna Tropical Botanic Gardens (XTBG) Chinese Academy of Sciences Kunming Section, 88 Xuefu Road Kunming 650223, P.R. China
20	Dr. Zhuoqing Li	Yunnan Institute of Environmental Sciences (YIES) Ecological Environment Protection Research Centre P.R. China
21	Dr. Ben Rawson	Manager Indo-Burma Primate Conservation Programme Fauna & Flora International
22	Mr. Colin Poole	Director Wildlife Conservation Society Regional Conservation Hub 352 Tanglin Road, Strathmore Block #01-08 Tanglin International Centre, Singapore 247671

23	Dr Ross Sinclair	Director of the WCS Cambodia Program Wildlife Conservation Society Phnom Penh, Cambodia
24	Dr Peter Cutter	Manager, Landscape Conservation Programme, WWF-Greater Mekong No. 87 Soi Paholyothin 5, Paholyothin Road, Samsen Nai, Phyathai, Bangkok 10400
25	Mr. Rattaporn Pitakthepsombat	Conservation Program Manager WWF-Thailand 87 Soi Paholyothin 5 , Samsen Nai, Phayathai Bangkok 10400, Thailand
26	Mr. Vorsak Bou	Birdlife International #9 Street 29, Tonle Basac, Chamkarmon Phnom Penh, Cambodia
27	Mr. Peter Stephen	Forest Management and Climate Change Adviser Liberty Square, Suite 2002, 287 Silom Road, Bang Rak Bangkok 10500, Thailand
ASIAN DEVELOPMENT BANK		
28	Mr. Sanath Ranawana	Senior Natural Resources Management Specialist Asian Development Bank Thailand Resident Mission 23/F, The Offices at Central World 999/9 Rama 1 Road, Pathumwan, Bangkok 10330, Thailand
ENVIRONMENT OPERATIONS CENTER		
29	Mr. Duncan McLeod	Outreach Specialist
30	Mr. Jerry Chen	Biodiversity and Landscapes Conservation Specialist
31	Dr. Michael J.B. Green	Technical Program Head
32	Ms. Ornsaran Manuamorn	Climate Change Coordinator
33	Ms. Quyen Hanh Nguyen	GIS Associate
34	Ms. Somphavanh Nakhavong	Statistics and Indicators Associate
35	Mr. Sumit Pokhrel	Senior Climate Change Specialist
36	Mr. Teo Dang Do	Biodiversity Landscapes & Livelihoods Coordinator
37	Ms. Tin Win Win Ei	Environmental Safeguards and Data Associate
38	Mr. Vong Sok	Environmental Planning Coordinator

ANNEX 2

PROGRAM: Regional Consultation on Transboundary Biodiversity Landscapes

DAY 1	TUESDAY, 6 MAY 2014
0830 − 0900	**REGISTRATION**
0900 − 0915	**OPENING SESSION**
	Welcome and introduction to objectives Dr. Michael Green, Technical Program Head, EOC/ADB
	SESSION 1. Introduction to landscape management initiatives in GMS ***Outputs*** *1. Shared understanding of current and planned landscape management initiatives in GMS.* *2. Potential synergies and collaboration between different initiatives identified.*
0915 – 1010	**1. Introduction to CEP's Transboundary Biodiversity Landscapes initiatives** Dr. Michael Green, Technical Program Head, EOC/ADB **2. Introduction to the Critical Ecosystem Partnership Fund: Indo-Burma** James Tallant, Senior Programme Officer, IUCN **3. Biodiversity Conservation Corridor Master Plan, Thailand** Thammanoon Temchai, Forestry Technical Officer, Chief of National Park Wildlife and Protected Area Innovation Center Pechchaburi Province, Thailand
1010 – 1030	**Coffee Break**
1030 – 1200	**Panel discussion:** facilitated by Michael Green, EOC/ADB **Topic:** Potential synergies and collaboration between different initiatives **Panelists:** IUCN, SNV, UNDP-GEF, WWF, China (GEPD), Viet Nam (ISPONRE)
1200 – 1330	**Lunch**
	SESSION 2: TBL management strategies and their mainstreaming into regional, national and provincial planning processes and development plans ***Outputs*** *1. Shared understanding of science, processes and tools needed to develop TBL management strategies.* *2. Entry points identified to mainstream TBL strategies in regional, national, provincial planning processes.*
1330 – 1440	**1. Introduction to CEP's Transboundary Biodiversity Landscapes assessment** Jerry Chen, Biodiversity & Landscape Conservation Specialist, EOC/ADB **2. GMS Forests and Biodiversity Program: Regional Support Project** Ornsaran Manuamorn, Climate Change Coordinator, EOC/ADB **3. Biodiversity assessment and monitoring framework in China** Dr. Jun Wu, Nanjing Institute of Environmental Science, MEP-PRC **4. Application of spatial planning tools and methods** Dr. Peter Cutter, Manager, WWF-Greater Mekong Landscape Conservation Programme
1440 – 1500	**Coffee Break**
1500 − 1700	**Panel discussion:** facilitated by Eric Wikramanayake, EOC/ADB **Topic:** TBL management strategies and their mainstreaming: science, scenarios, consensus-building processes and entry points for mainstreaming **Panelists:** Representatives of line agencies responsible for NBSAP/ PBSAP (WGE member countries - Cambodia, China, Lao PDR, Thailand, Viet Nam).
1700 - 1715	**Summary of Day 1:** Michael Green, EOC/ADB

DAY 2	WEDNESDAY, 7 MAY 2014
	SESSION 3. TBL monitoring ***Outputs*** *1. Monitoring framework reviewed and agreement on suite of indicators to track biodiversity and livelihoods.* *2. Monitoring approaches reviewed and consensus on most relevant (cost effective – time/resources).*
0900 – 1010	**1. Transboundary Biodiversity Landscapes Monitoring Framework** Dr. Eric Wikramanayake, EOC/ADB **2. Monitoring the Critically Endangered White-shouldered Ibis in Western Siem Pang Important Bird Area (IBA)** Vorsak Bou, Birdlife International **3. Ecosystem Monitoring and Assessment Indices in Lancang Basin** Li Zhuoqing, Director, Division of Ecology, Yunnan Institute of Environmental Science **4. Application of monitoring tools in TBL management: SMART case study** Dr. Ross Sinclair, Director, WCS Cambodia Program, WCS
1010 – 1030	**Coffee Break**
1020 – 1200	**Panel discussion**: facilitated by Michael Green, EOC/ADB **Topic:** TBL monitoring framework, survey methods and data sharing **Panelists:** BirdLife, FFI, Freeland, SNV, WCS, Viet Nam (MARD), China (Jun Wu)
1200 – 1330	**Lunch**
	SESSION 4: Regional collaboration mechanism ***Outputs*** *1. Consensus on need and mechanism, such as a forum, for regional collaboration on TBLs; key partners identified; scope of collaboration defined; resourcing and information sharing protocols considered.* *2. Existing and potential opportunities for investing in TBLs identified.*
1330 – 1430	**1. Introduction to GMS TBL Forum** Sumit Pokhrel, Deputy Technical Program Head, EOC/ADB **2. Joint transboundary protected areas management: FFI's experience** Benjamin Rawson, Manager, Indo-Burma Primate Conservation Programme, FFI **3. Cooperation between China and Viet Nam in managing TBLs** Lin Weidong, Director of International Environmental Cooperation Center, Guangxi Environmental Protection Department, PRC
1430 – 1450	**Coffee Break**
1450 − 1600	**Panel discussion:** facilitated by Michael Green, EOC/ADB **Topic:** TBL knowledge exchange mechanisms and investment needs **Panelists:** Line agencies (Cambodia, China, Lao PDR, Thailand, Viet Nam) Development Partners (CBD Secretariat, UNDP-GEF, IUCN)
1600 - 1615	**Summary of Day 2 and next steps:** Michael Green, EOC/ADB
1615 - 1630	**Closing remarks:** Participants

NOTE: Participants are requested to kindly complete and hand in their evaluation form before their departure.

GREATER MEKONG SUBREGION CORE ENVIRONMENT PROGRAM

Regional Consultation on Transboundary Biodiversity Landscapes
6-7 May 2014, Bangkok, Thailand

CONTEXT

GMS Economic Cooperation Program

In 1992, the six countries of the Greater Mekong Subregion (Cambodia, People's Republic of China, Lao People's Democratic Republic, Myanmar, Thailand and Viet Nam) launched the GMS Economic Cooperation Program (ECP) with assistance from the Asian Development Bank (ADB). The GMS Program aims to strengthen economic growth by focusing on 3 Cs – 'connectivity', 'competitiveness' and 'community' – as building blocks for subregional cooperation. Over the past two decades, the GMS Program has helped increase prosperity in the Subregion through investments exceeding US$15 billion for roads, airports, railways, hydropower, tourism infrastructure and urban development. The GMS is among the consistently fastest growing economies in the world.

GMS Core Environment Program – Phase I (2006 – 2011)

In response to growing concern about the environmental impacts of rapid economic development, the GMS countries launched the Core Environment Program (CEP) following its endorsement at the First Meeting of the GMS Environment Ministers in May 2005. Administered by ADB and overseen by the environment ministries of the six countries that form the Working Group on Environment (WGE), CEP addresses one of the five strategic thrusts of the ECP that aims to achieve "an environmentally friendly and climate resilient GMS Program." CEP is run from the Environment Operations Center (EOC), which is the secretariat to the WGE and provides coordination and technical support.

Transboundary biodiversity landscapes (TBLs) lie at the heart of the CEP because they constitute a large proportion of the natural capital remaining in GMS, including much of South East Asia's most important biodiversity in terms of endemic and threatened species[1] and ecoregions[2]. This wealth, reflected in the diversity of plants and animals within these capital stocks of forests, grasslands, wetlands, freshwater and other ecosystems, together with the services they provide to societies, underpins the Subregion's security in terms of water, food and energy – the essentials for life in the Subregion[3] and, indeed, elsewhere on Earth.

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[1] The GMS lies within the Indo-Burma global biodiversity hotspot, one of 34 defined regions where 75% of the world's most threatened mammals, birds and amphibians survive within habitat covering just 2.3% of the Earth's surface (Mittermeier *et al*., 2005). To qualify as a hotspot, a region must contain at least 1,500 species of vascular plants (> 0.5% of the world's total) as endemics; and it must have lost at least 70% of its original habitat due to the impact of human activities.

[2] Wikramanayake, E.D., E. Dinerstein, C. Loucks, D. Olson, J. Morrison, J. Lamoreux, M. McKnight and P. Hedao 2001. *Terrestrial Ecoregions of the Indo-Pacific: A conservation Assessment.* Island Press, Washington D.C.

[3] For example, the agricultural sector accounts for 40-75% of total employment within GMS countries (Selected Indicators, FAO-RAP, 2011); agriculture and forestry account for 30-36% of GDP in Cambodia, Lao and Myanmar

TBLs were identified as part of an expert consultation process that helped define Phase I of the CEP, prior to its onset in 2006. Unsurprisingly, many of these TBLs lie in the more mountainous, less accessible parts of the GMS that coincide with international borders, providing very real opportunities for transboundary cooperation between the respective countries (**Figure 1**). They also tend to lie in juxtaposition to the GMS economic corridors, providing both challenges and opportunities for their effective management, in terms of conserving the natural capital while also enabling rural communities to benefit sustainably from the services provided by the ecosystems that support this capital (**Figure 2**).

Figure 1 GMS biodiversity landscapes, many of which are transboundary, requiring bi- and tri-lateral cooperation

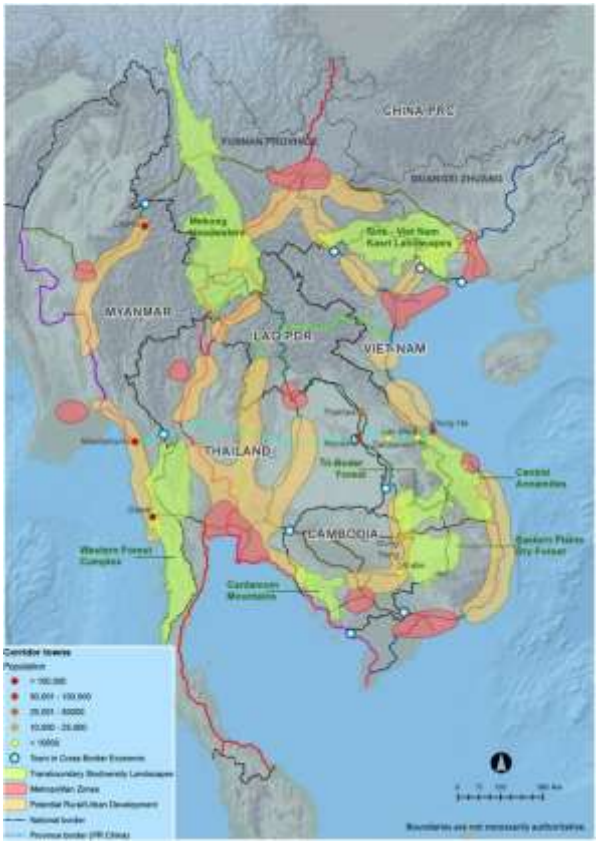


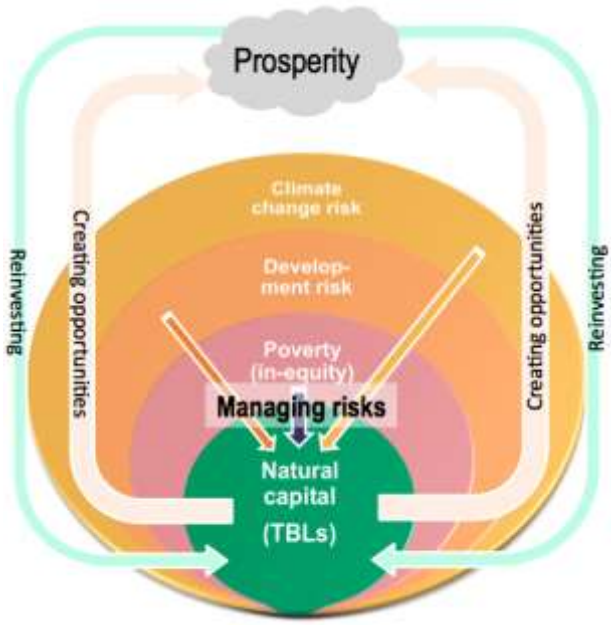
Figure 2 GMS economic corridors lie in close juxtaposition to GMS biodiversity landscapes

Phase I was complemented by the Biodiversity Conservation Corridors Initiative (BCI), which led to a major Biodiversity Conservation Corridors (BCC) investment project in Cambodia, Lao and Viet Nam to establish and maintain corridors that connect species-rich hotspots within TBLs.

GMS Core Environment Program – Phase II (2012 – 2016)

CEP Phase II comprises four components: 1- Environmental Monitoring, Planning and Safeguards, 2- Biodiversity Landscapes and Livelihoods, 3- Climate Change and 4- Institutions and Financing. The conceptual relationship between these components in relation to securing and investing in natural capital is illustrated in **Figure 3** and explained in the accompanying text**.**

(ADB Key Indicators for Asia and the Pacific, 2012); and primary commodities (raw/unprocessed materials) account for approximately 40% of exports in Viet Nam, and 75-80% of exports in Lao and Myanmar (Source: UNCTADstat).



Conceptual framework to CEP

- Future prosperity, including water, food and energy security, in the GMS is reliant on safeguarding natural capital (ecosystem assets and services) from further fragmentation and degradation, re-investing in it and creating opportunities for communities most dependent on it to improve their livelihoods through more equitable sharing of the benefits of sustainable land management.
- **Component 1** focuses on managing potential impacts from development on the natural capital by strengthening environmental planning systems and safeguard measures.
- **Component 2** focuses on demonstrating how to improve management of natural resources and local livelihoods within TBLs, strongholds of the Subregion's remaining natural capital. This also requires integrated approaches to management across international borders. Enhancing the efficiency of supply chains and ensuring that they result in equitable sharing of benefits is key to improving local livelihoods.
- **Component 3** focuses on managing the risks posed by climate change through the development of climate-resilient and low-carbon strategies.
- **Component 4**, which cuts across the other components, focuses on improving institutional capacity and financing for sustainable environmental management.

Figure 3 Conceptual diagram of the inter-dependence between natural capital and prosperity, the former requiring reinvestments from the prosperity that it generates. Managing environmental risks associated with poverty, development and climate change is critical to safeguarding natural capital and, in the case of the GMS TBLs, there is the additional requirement for cross-border cooperation.

In order to inform biodiversity landscape policy and management, including its prioritization for conservation[4], it is necessary to first value the natural capital and the services provided by the ecosystems that comprise these landscapes. Having assessed current baseline values, it is then possible to compare the present 'business as usual' scenario with other scenarios (past and future), all of which can be used to inform **national** strategic planning and policy as well as site-specific, **landscape-level** management planning, including **transboundary** management planning. This is an ambitious, challenging and demanding task, requiring a concerted effort by all interested and relevant parties.

Working in partnership

EOC is very aware that may others are investing resources and implementing programs and projects in these TBLs or, indeed, in other landscapes important for biodiversity within the GMS (**Figure 4**). There is huge potential for closer collaboration in order to generate synergy, avoid

[4] The term conservation is used in its broadest sense, which includes sustainable use. Conservation is defined in the *World Conservation Strategy* as: "the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations (IUCN-UNEP-WWF, 1980).

duplication and build consensus by establishing a mechanism that brings together the relevant players in a timely manner, for example, to:

- share knowledge
- exchange data
- develop and adopt common standards
- complement each other's activities
- lever additional resources
- share entry points for mainstreaming activities.

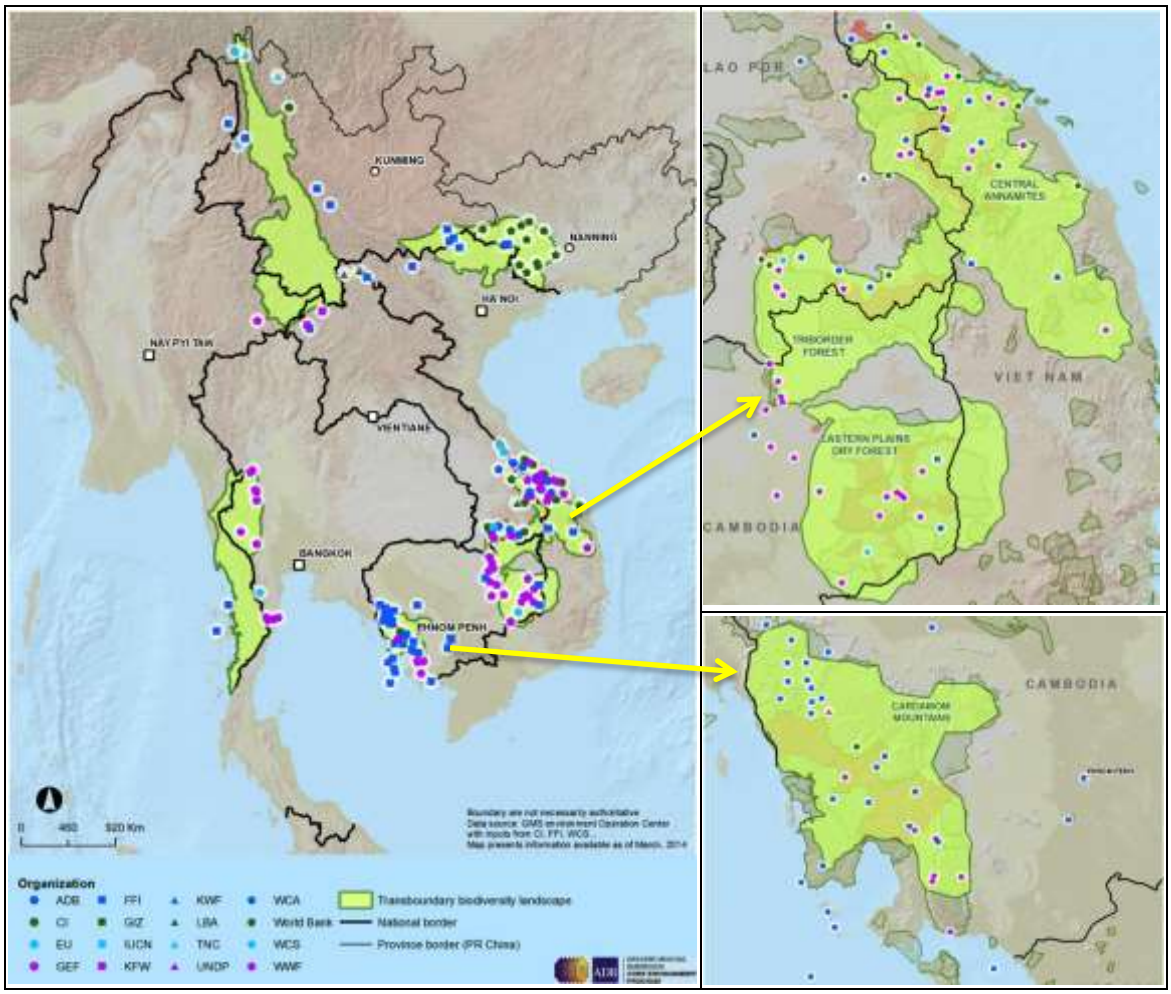


Figure 4 Preliminary map of GMS transboundary biodiversity landscapes with locations of projects implemented by partner organizations [incomplete data]

Thus, the purpose of this regional consultation on TBLs is to bring together relevant government and non-government partners to explore this potential and identify how best and by what means interested parties might work together more effectively, in a coherent and integrated manner that retains a certain informality in order to avoid bureaucratic or other constraints.

Participants may be interested to note that this initiative follows in the wake of a CEP Technical Working Session that preceded the GMS WGE 8th Semi-Annual Meeting held in Champasak, Lao PDR in October 2013. The idea of establishing a technical working group or similar

mechanism to focus on TBLs was shared with WGE members[5] and it was resolved to adopt a more open, less binding 'forum' type of approach.

Some participants will be aware of a previous initiative under the BCI component of CEP Phase I to establish a framework for monitoring and reporting on the status of biodiversity in the BCI pilot sitesand GMS Economic Corridors using a 'state, pressure, response' approach. BirdLife International was commissioned in 2006 to do this work and baseline indicator data were collated across a large number of sensitive sites in the GMS[6]. This monitoring was not continued but the initiative provides valuable experience from which lessons can be learned; and the framework will be reviewed as part of this consultation meeting.

AIM, OBJECTIVES AND OUTCOMES OF REGIONAL CONSULTATION

Aim

To explore the potential for collaboration among relevant parties working on improving management of biodiversity and/or livelihoods in TBLs (and similar landscapes in the GMS).

Objectives

1. Identify gaps in information (Figure 4) on who is working where and on what within the 7 TBLs.
2. Share and review knowledge on current, previous and planned work within TBLs, including methodologies.
3. Review the biodiversity monitoring framework developed under the BCI in Phase I and agree on key indicators for improvement or development in order share a common platform for monitoring the status of biodiversity and livelihoods in TBLs.
4. Identify a potential informal mechanism, its scope and modus operandi for collaborating on the strategic planning, management and monitoring of TBLs.

Outputs

These are identified in the Program under the respective sessions.

Outcomes

1. Consensus and a mechanism for future collaboration on TBLs, with defined scope and terms of reference to be drafted.
2. Consensus on the need for a common framework to monitor TBLs and on changes to the existing framework developed under the BCI in Phase I.
3. Next steps articulated and agreed.

[5] The original idea as expressed to WGE members can be viewed on pages 6-7 of the presentation at: http://www.gms-eoc.org/uploads/resources/281/attachment/1.%20GMS%20CEP%20Conceptual%20Framework%20and%20Institutional%20Development.pdf.
[6] The results of this monitoring are summarized in *Biodiversity Conservation Corridors Initiative (BCI) Report 2006-2011*. GMS Core Environment Program, 2011. Pp. 29-35. http://www.gms-eoc.org/resources/biodiversity-and-conservation-corridors-initiative-2006-2011-report

EVALUATION FORM

ANNEX 4

REGIONAL CONSULTATION ON TRANSBOUNDARY BIODIVERSITY LANDSCAPES

Bangkok, 6 – 7 May 2014

The purpose of this evaluation form is to receive anonymous feedback from individual participants on the usefulness of the event.

1. Please indicate (tick) whom you represent:

a. Nationality: ☐ GMS National ☐ Non-GMS National
b. Gender: ☐ Male ☐ Female
c. Expertise: (tick one or more)
☐ Includes survey and monitoring
☐ Includes landscape management
☐ Includes transboundary cooperation
☐ Not include any of the above

2. Overall evaluation:

Please score the sessions and organization according to the following criteria:

4- Very satisfactory / Excellent *2- Less than satisfactory*
3- Satisfactory *1- Unsatisfactory / Poor use of my time*

EVENT SESSIONS		4	3	2	1
Day 1	**Opening session:**				
	Introduction to workshop objectives				
	Session 1: Introduction to landscape management initiatives in GMS				
	1. Introduction to CEP's Transboundary Biodiversity Landscapes initiatives				
	2. Introduction to the Critical Ecosystem Partnership Fund: Indo-Burma				
	3. Biodiversity Conservation Corridor Master Plan, Thailand				
	Panel discussion				
	Session 2: TBL landscape management strategy & spatial master plan				
	1. Introduction to CEP's Transboundary Biodiversity Landscapes assessment				
	2. GMS Forests and Biodiversity Program: Regional Support Project				
	3. Biodiversity assessment and monitoring framework in China				
	4. Application of spatial planning tools and methods				
	Panel discussion				
	Day 1 Summary Session				
Day 2	**Session 3: TBL monitoring**				
	1. Transboundary Biodiverstity Landscapes Monitoring Framework				
	2. Monitoring the Critically Endangered Bird Species (white shouldered Ibis) …				
	3. Ecosystem Monitoring and Assessment Indices in Lancang Basin				
	4. Application of monitoring tools in TBL management: SMART case study				
	Panel discussion				
	Session 4: Regional cooperation mechanism				
	1. Introduction to GMS TBL Forum				
	2. Joint transboundary protected areas management: FFI's experience				
	3. Cooperation between China and Viet Nam in managing TBLs				
	Panel discussion				
	Day 2 Summary Session				

EVENT ORGANIZATION	4	3	2	1
- Hospitality and organization				
- Workshop structure				
- Workshop materials				

3. How the event sessions meet your expectations?

4. (a) What was particularly useful for you?

(b) How relevant is what you have learnt to your work/organisation?

5. What should have been done differently (contents, processes), why?

6. How did you find the duration of the event? (Select one):

☐ Too short ☐ Too long ☐ Just about right

7. Any Other Comments?

Thank You For Taking Time To Complete This Evaluation Form.

DRAFT Framework for Monitoring GMS Transboundary Biodiversity Conservation Landscapes: Proposed Indicators for Review

Landscape-scale Indicator	State Indicator	Pressure Indicator	Response Indicator	Data Source
Landscape-scale integrity of ecosystems and habitats	**Forest cover in landscape**: extent, distribution, and coverage of conservation units (protected areas, buffer zones, corridors, watershed areas and water sources, Key Biodiversity Areas). Will provide information on forest intactness, connectivity, and management of core areas	**Forest cover loss, degradation, and fragmentation in Landscape**: extent, distribution, and coverage of conservation units (protected areas, buffer zones, corridors, watershed areas and water sources, Key Biodiversity Areas). Will provide information on forest/habitat loss, fragmentation; loss of connectivity; lack of effective management	**Forest Cover gain due to restoration in landscape**: extent, distribution, and coverage of conservation units (protected areas, buffer zones, corridors, watershed areas and water sources, Key Biodiversity Areas). Will provide information on forest/habitat restoration, connectivity, and management of core areas	Global Forest Watch database
Biodiversity of Terrestrial Ecosystems: Birds assemblages	Birds: species compositions in protected areas, KBAs, corridors, and buffer zones. Presence of intact bird communities and assemblages and rare, endemic, and habitat specialist birds Primates: population status, species assemblages	Bird species compositions in protected areas, KBAs, corridors, and buffer zones. Loss of rare, endemic, and habitat bird species from expected bird communities and assemblages, appearance and dominance of common, commensal, and invasive bird species Loss of primates – population status, species assemblages	Bird species compositions in protected areas, KBAs, corridors, and buffer zones. Appearance of rare, endemic, and habitat bird species Primates: population status, species assemblages	

Landscape-scale Indicator	State Indicator	Pressure Indicator	Response Indicator	Data Source
Biodiversity of Aquatic Ecosystems: Fish diversity, and species composition	Fish species compositions in key/selected rivers and streams. Presence of intact fish communities and assemblages; rare, endemic, and habitat specialist fishes	Fish species compositions in key/selected rivers and streams. Loss of rare, endemic, and habitat specialist fishes; dominance by common and habitat generalists and invasive species	Fish species compositions in key/selected rivers and streams. Appearance of rare, endemic, and habitat fish species	
Ecosystem Services: Forest Carbon stocks	Forest carbon. Baseline stocks in landscape forests.	Loss of forest Carbon	Increase in forest Carbon	Google Earth Engine/ Claslite with Lidar based baseline
Ecosystem services: Water flows in major rivers and/or fisheries	Base flows in monitoring stations in selected rivers/streams and/or fish catch in selected areas	Change in flows in monitoring stations in selected rivers/streams and/or fish catch in selected areas	Change in flows in monitoring stations in selected rivers/streams and/or fish catch in selected areas	
Livelihoods: Forest resources	Income and dependency on forest resources by selected communities in monitoring sites	Loss of income and negative change in forest resource availability for dependent communities in selected monitoring sites	Increased income and positive change in forest resource availability for dependent communities in selected monitoring sites	
Livelihoods: water for agriculture	Availability of water for irrigation and crop productivity in selected monitoring sites	Negative change in crop productivity due to lack of irrigation water in selected monitoring sites	Positive change in crop productivity due to availability of irrigation water in selected monitoring sites	
Development Pressures: infrastructure footprints	Development footprint in natural land cover and ecosystems	Ecosystem degradation, loss, and fragmentation due to development footprints at landscape scales	Mitigation measures to reduce the impacts from development footprints in natural ecosystems, land cover, and habitats	

CEP-BCI Monitoring framework (2006)

The full framework developed under the Core Environment Program and Biodiversity Corridors Initiative is presented below, with indicators to be covered by BirdLife International under this project's detailed monitoring italicised and bordered in bold, and indicators to be covered by BirdLife International under this project's basic monitoring also shaded. Further explanation and clarification has been added to these particular indicators where necessary.

1. DRIVER indicators

INDICATOR GROUPING	SITE LEVEL (Drivers of change at site level)	LANDSCAPE LEVEL[1] (Drivers of change at landscape level)	NATIONAL LEVEL (Drivers of change at national level)	REGIONAL LEVEL (Drivers of change at regional level)
Demographic change	1. Human population density within the site and surrounding area[2]	1. Human population density within the landscape	1. Human population density within the country	1. Human population density within the GMS
Economic growth and market forces	2. Average household income within the site and surrounding area	2. Average household income within the landscape	2. Production of key commodities: timber, coffee, rubber and palm oil	2. Gross annual trade in natural-resource commodities (timber, energy, etc.) among GMS member countries
Land-use and infrastructure policies, programmes and plans	***3. Road density (no. of km of road per km² of the site)***	***3. Road density (no. of km of road per km2 of the landscape)***	3. National hydro-electricity generating capacity	3. Number of international border crossings between GMS countries open to trans-boundary trade
Dependence on natural resources by communities	4. Proportion of households within the site and surrounding area for whom natural resources comprise a major proportion (>10%) of household income[3]	4. Proportion of households within the landscape for whom natural resources comprise a major proportion (>10%) of household income		
Natural resource utilization	5. Distribution percentages of forest, cropland, and fallow	5. Inter-conversion of forest to non-forest use		

[1] Where a figure for the landscape is not available, a figure for the administrative units (provinces/counties) in which the landscape is located can be used.

[2] The surrounding area of each site should be defined on a case-by-case basis. In order to facilitate analysis of data collected by local government units, the site and its surrounding area may be taken to comprise all of the administrative sub-units (e.g. communes, districts, etc.) in which the site is situated.

[3] Based on a sample survey of households, and taking into account both cash and non-cash income.

2. PRESSURE indicators

INDICATOR GROUPING	SITE LEVEL[4] (Human impacts on ecosystems at site scale)	LANDSCAPE LEVEL (Human impacts on ecosystems at landscape scale)	NATIONAL LEVEL (Human impacts on ecosystems at national scale)	REGIONAL LEVEL (Human impacts on ecosystems at regional scale)
Habitat loss and degradation	*1. Level of pressure on the habitats of key species of animal and plant from habitat loss and degradation*	1. Annual rate of natural forest cover change within the landscape	1. Annual rate of natural forest cover change[5]	1. Annual rate of natural forest cover change
Over-harvesting of key species[6] of animal and plant	*2. Level of pressure on key species of animal and plant from over-harvesting*	*2. Number of wildlife restaurants within the landscape[7]*	2. Declared volume and composition of wild animal and timber species in international trade[8]	2. Number of GMS animal and plant species listed on the CITES appendices
Invasive alien species	*3. Level of pressure on key species of animal and plant from invasive alien species*	*3. Percentage of ecologically sensitive sites in the landscape affected by invasive alien species[9]*	3. Number of invasive alien species in the country	3. Number of invasive alien species in the GMS
Pollution of water, soil and air	*4. Level of pressure on key species of animal and plant from pollution*	4. Rates of acid rain deposition (kg ha^{-1} yr^{-1})	4. Nitrogen deposition (rates of wet deposition of nitrates and ammonium)	4. Rates of acid rain deposition (kg ha^{-1} yr^{-1})

[4] For all pressure indicators at the site level, three criteria will be used to evaluate the level of the pressure: (i) timing of pressure; (ii) scope of pressure; and (iii) severity of pressure. For each indicator, a score for timing of pressure will be assigned as follows: 3 (happening now); 2 (likely in short term, within 4 years); 1 (likely in long term, beyond 4 years); or 0 (past, no longer limiting and unlikely to return). A score for scope of pressure will be assigned as follows: 3 (whole population/area, >90%); 2 (most of population/area, 50-90%); 1 (some of population/area, 10-50%); or 0 (few individuals/small area, <10%). A score for severity of pressure will be assigned as follows: 3 (rapid deterioration, >30% over 10 years of 3 generations, whichever is longer); 2 (moderate deterioration, 10-30% over 10 years or 3 generations); 1 (slow deterioration, 1-10% over 10 years or 3 generations); and 0 (no or imperceptible deterioration, <1% over 10 years). The scores for these three criteria will be summed to produce an overall evaluation of the level of the pressure: Low (0-2); Medium (3-5); High (6-7); or Very High (8-9). Note: if a pressure indicator is assigned a score of 0 for any of timing, scope or severity, an overall score of 0 is assigned (i.e. low level pressure).

[5] Through the Food and Agriculture Organisation Asia Pacific Forestry Sector Outlook Study II.

[6] Key species comprise globally threatened, restricted-range and congregatory plant and animal species of which the site regularly supports a significant population.

[7] Ability of BirdLife to monitor this will depend significantly on data available from BCI Implementing Agencies.

[8] Due to the difficulty of generating reliable data on volumes of species in illegal trade, only legally traded species, recorded by national CITES authorities, will be monitored.

[9] Sites 'affected' will be considered to be those scoring Medium or above for pressure from invasive alien species.

3a. Biodiversity and ecosystem services (STATE) indicators

INDICATOR GROUPING	SITE LEVEL[10] (State of species, habitats, ecological connectivity and ecosystem health)	LANDSCAPE LEVEL (State of species, habitats, ecological connectivity and ecosystem health)	NATIONAL LEVEL (Ecosystem health, goods and services at national level)	REGIONAL LEVEL (Ecosystem health, goods and services at regional level)
Habitat cover and condition	*1. Extent and quality of natural forest habitats[11]*	1. Percentage cover of natural forest	1. Percentage of national land area covered by natural forest	1. Percentage of GMS land area covered by natural forest
Population sizes of key species[12] of animal and plant	*2. Relative abundances of key species[13]*	*2. Relative abundances of landscape species[14]*	2. Living Planet Index	*2. Red List Index of vertebrate and vascular plant species occurring in the GMS[15]*
Population sizes of species of socio-economic value	*3. Relative abundances of selected resources of high socio-economic value[16]*		3. Total annual inland fisheries production	
Fragmentation of natural forest	*4. Area of natural forest >2 km from forest edge as a percentage of total area of natural forest at the site[17]*	*3. Area of largest natural forest patch size as percentage of total landscape area[18]*		

[10] All state indicators at the site level will be monitored based on percentage of optimum area/population remaining (observed or estimated). Where a precise percentage cannot be given, a score will be assigned as follows: Good (>90%), Moderate (70-90%), Poor (40-70%) or Very Poor (<40%).

[11] Likely to be calculated 'by hand' from high resolution satellite images, rather than by automatic algorithms, other than in Quang Nam where a baseline has already been calculated by AMNH.

[12] Key species comprise globally threatened, restricted-range and congregatory plant and animal species of which the site regularly supports a significant population.

[13] These could be individual species, or groups of species.

[14] Landscape species have wide home-ranges, low natural densities, migratory behaviour or other characteristics that mean that they require conservation planning and action at landscape levels as well as site levels.

[15] Owing to the slow change of this indicator, BirdLife will attempt to calculate a baseline and an earlier 'pre-baseline' (to demonstrate utility of this indicator), and will then calculate the value at the end of phase 1 (i.e., it will not be monitored on an annual basis).

[16] These could be individual species, or groups of species, and could be proxies (e.g., 'catch' per unit effort).

[17] Roads per se may not significantly fragment habitat for species, unless they cannot easily cross them (e.g., any roads for gibbons, but only large roads for elephants), but overall the presence of roads is highly correlated with changes in species composition (Sanderson, E. W., Jaiteh, M., Levy, M. A., Redford, K. H., Wannebo, A. V. and Woolmer, G. (2002) The Human Footprint and the Last of the Wild. *BioScience* 52 (10): 891-904). Although imperfect, for the purposes of this project all roads will be considered as fragmenting habitat. This approach is in line with that taken by the leading methodologies to date: the UNEP GLOBIO (Global Methodology for Mapping Human Impacts on the Biosphere) and WCS Human Footprint. Measurement of this indicator will depend upon availability of data sourced by the EOC.

[18] Measurement of this indicator will depend upon availability of data sourced by the EOC.

3b. Human well-being (STATE) indicators

INDICATOR GROUPING	SITE AND LANDSCAPE LEVELS (Well-being of local communities)		NATIONAL AND REGIONAL LEVELS (National poverty and economic situation)
	Household level	**Village level**	
Basic demographic profile[19]	1. Distribution by family size, gender, and age	1. Distribution by family size, gender, and age	
Human development profile	2. Human development index (education plus health)	2. Human development index (education plus health)	1. Net enrolment ratio in primary education 2. Infant mortality rate
Property assets[20]	3. Private land, production assets	3. Household property assets mapping	
Land tenure and use systems[21]	4. Land allocation and access	4. Land allocation and access	
Livelihood patterns[22]	5. Sources and disposition of income	5. Sources and disposition of income	
Wealth and income expenditure distribution		6. Wealth and income distribution	3. Proportion of population below US$1 (PPP) per day
Cultural and social order systems[23]		7. Ethnicity distribution and community relationship	
Infrastructure development[24]		8. Infrastructure network indicator	4. Proportion of population with sustainable access to an improved water source, urban and rural

[19] To identify who and where they are.

[20] What private property and production assets do they have?

[21] What common resources do they have or have access to?

[22] To monitor the way people make their livelihoods.

[23] Community social features.

[24] Supporting infrastructure for community or beyond.

4. REPSONSE indicators

INDICATOR GROUPING	SITE LEVEL (Site-scale conservation initiatives)	LANDSCAPE LEVEL (Landscape-scale conservation initiatives)	NATIONAL LEVEL (National policy responses)	REGIONAL LEVEL (Regional policy responses)
Conservation planning	*1. Comprehensiveness of management planning*[25]	*1. Area included within continuous networks of protected areas, other appropriate conservation designations and biodiversity corridors*[26]*, in km² and as percentage of total landscape*	1. Protected area[27] coverage, as percentage of national land area	1. Protected area coverage, as percentage of GMS land area
Environmental management systems	*2. Comprehensiveness of measures to engage local communities in conservation*[28]	*2. Percentage of biodiversity corridors where plantation with native species and/or assisted or monitored natural regeneration are underway*[29]	2. Number of strategic/cumulative environmental impact assessments of policies, plans or programmes in key development sectors (energy, transport, tourism, etc.) undertaken in the country	2. Number of policies and plans of the GMS Economic Cooperation Programme containing explicit measures to mitigate potential negative impacts on biodiversity and ecosystem services

25 A score will be assigned based on the following criteria: 3 = A comprehensive and appropriate management plan exists that aims to maintain or improve the populations of trigger species; 2 = A management plan exists but is out of date or not comprehensive; 1 = No management plan exists but the management planning process has begun; 0 = No management planning has taken place.

26 Biodiversity corridors are actual or potential habitat corridors that link environmentally sensitive sites within a landscape.

27 This indicator will only measure coverage of protected areas in IUCN categories I to IV.

28 A score will be assigned based on the following criteria: 3 = Most (>50%) villages within the site and surrounding area have established natural resource committees (or equivalent) and developed and begun implementing natural resource management plans; 2 = Some (10-50%) villages within the site and surrounding area have established natural resource committees (or equivalent) and developed and begun implementing natural resource management plans; 1 = Some (>10%) villages within the site and surrounding area have established natural resource committees (or equivalent) but few/none (<10%) have developed and begun implementing natural resource management plans; 0 = Few/no (<10%) villages within the site and surrounding area have established natural resource committees (or equivalent).

29 Ability of BirdLife to monitor this will depend significantly on data available from BCI Implementing Agencies.

INDICATOR GROUPING	SITE LEVEL (Site-scale conservation initiatives)	LANDSCAPE LEVEL (Landscape-scale conservation initiatives)	NATIONAL LEVEL (National policy responses)	REGIONAL LEVEL (Regional policy responses)
Environmental management institutions	*3. Comprehensiveness of conservation action*[30]	*3. Existence of partnerships or other mechanisms to coordinate conservation action at the landscape-scale*	3. Number of legal and regulatory instruments directly relating to conservation of biodiversity and ecosystem services prepared by the national environmental management authority	3. Number of references to the Working Group on Environment in the annual reports of other GMS working groups
Sustainable financing mechanisms and structures	*4. Number of sustainable financing*[31] *mechanisms providing operational funding for conservation activities at the site*	4. Number of natural resource assets in the landscape for which economic valuation has been conducted	4. Number of operating sustainable financing mechanisms at the national level	4. Total investment by (a) GMS governments and (b) international donors in the Core Environment Programme
Change in resource use and management practices	5. Rate of change in resource use and management practices	5. Rate of change in resource use and management practices	**Change in resource use and management practices** A. Community initiatives, including capacity building B. Policy and legal frameworks, including national socio-economic development plans and sectoral plans related to the site and landscape level. C. Land tenure adjustment policies D. Recent, ongoing, and planned projects, programs and activities E. Prioritized investment from governments	

[30] A score will be assigned based on the following criteria, assessed against conservation measures listed in existing management plans or, where these are not available, conservation measures listed as necessary by the site manager: 3 = The conservation measures needed for the site are being comprehensively and effectively implemented; 2 = Substantive conservation measures are being implemented by these are not comprehensive, and limited by resources and capacity; 1 = Some limited conservation initiatives are in place; 0 = very little or no conservation action is taking place.

[31] Sustainable financing refers to financing that is able to cover the costs of conservation operations into the long-term (i.e. >10 years).