BCAMP

ASEAN CENTRE FOR BIODIVERSITY

Biodiversity and Ecosystem Service Studies

Photo: Landscape of Virachey National Park (MOE, 2018)

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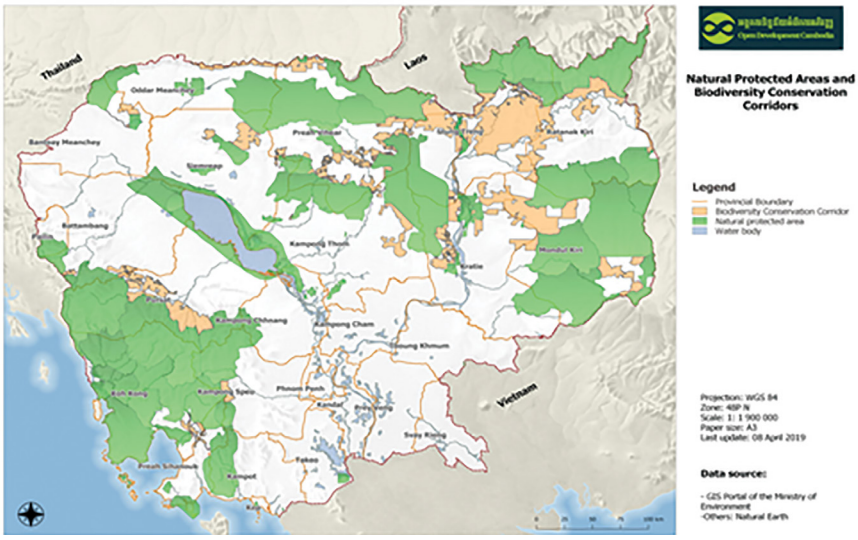
Linking Valuation to Innovative Financing of Cambodia's Protected Areas

Protected Areas in Cambodia

Cambodia has a large remaining expanse of tropical forests, and its system of protected areas and corridors covers 42 per cent of the country, but these forests are still under tremendous pressure. Deforestation in Cambodia has been caused by large-scale infrastructure projects, timber production, illegal logging, and other development activities, and this has reduced the availability of ecosystem services and increased the vulnerability among poor communities. In the past, the value of a tropical forest was limited to the financial appraisal of its timber stock and/or its value when converted to plantations, with limited appreciation and understanding for the full value of ecosystem services that the forest provides. This brief identifies key recommendations from a national stocktaking of studies on ecosystem service assessment and valuation, trade-offs, and conservation financing, supported by the EU-funded *Biodiversity Conservation and Management of Protected Areas in ASEAN* (BCAMP) Project, which will help pave the way to incorporating these values in forest management and planning. It is likewise important to assess the existing knowledge and skills of the people involved in ecosystem services assessment and economic analysis so that appropriate training can be designed to improve capacity for ecosystem service assessment and valuation in the country.

Review of Existing Studies

Research identified a total of 105 studies in Cambodia to date on biodiversity ecosystem service assessment, valuation, trade-off analysis involving biodiversity, and conservation financing (collectively referred to as BESA++). Almost all the studies (104 or 99 per cent) include some level of biodiversity and ecosystem services assessment, but mostly through qualitative description of the resources in the study areas.



Map: Protected areas and biodiversity conservation corridors in Cambodia
Source: Open Development Cambodia, 2019

- Very few applied statistical and geospatial (remote sensing) tools.
- 44 studies (42 per cent) made use of market prices to value forest ecosystem resources
- 28 studies (27 per cent) were conducted on conservation financing
- 19 studies (18 per cent) had trade-off analysis, mostly comparing alternative land uses in forest lands
- Very few studies evaluated non-use values using CVM (Contingent Valuation Methods)
- Only a few made use of benefits transfer techniques.

Overall, there has been very limited valuation of ecosystem services carried out in Cambodia. However, there has been a clear trend of an increasing number of BESA++ publications in Cambodia over the last two decades; during 2016–2019 alone, 38 publications were released, revealing the increasing recognition of the non-market value of ecosystem services.

Discussion

The danger of ignoring the value of ecosystem services is that policymakers will treat forests as unimportant, and allow forest conversion to other land uses like plantations. In most of the trade-off analyses reviewed, the value of ecosystem services was not properly accounted for. Given limited government resources allocated for forest conservation, innovative financing to raise additional funds is necessary. Conservation financing topics in the reviewed studies covered payment for ecosystem services; carbon offset projects through Reducing Emission from Deforestation and Degradation in Developing Countries (REDD+), and economic incentives to local communities through ecotourism and Non-timber Forest Products (NTFPs) extraction. Nevertheless, overall there has still been a limited number of valuation and economic analysis studies to assess the value of ecosystem services,

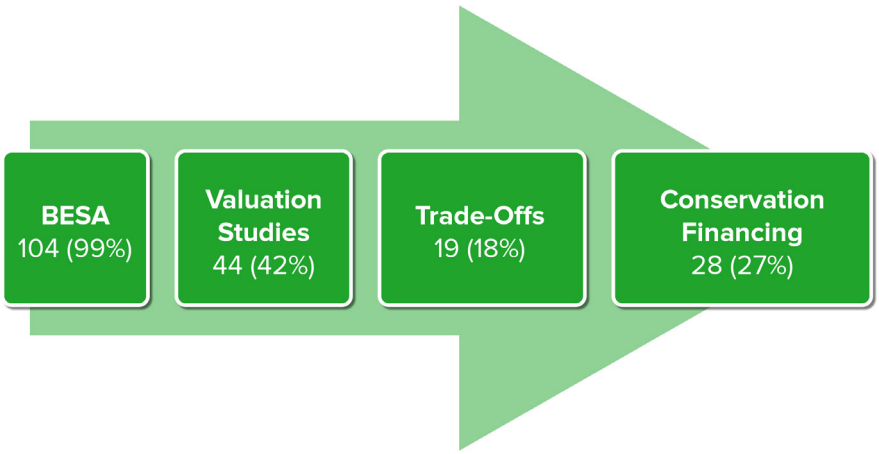


Figure 1: Number of studies by BESA++ category

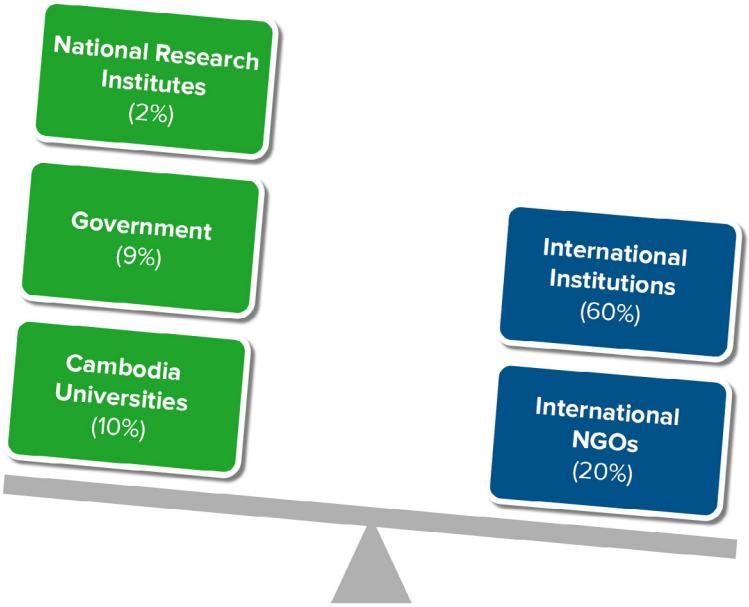


Figure 2: Institutions conducting BESA++ studies in protected areas in Cambodia

and even fewer that developed means to capture these values. Most of the studies so far conducted have focused on the provisioning services of forest resources (food, NTFPs, water, medicinal products, etc.). Research to value the regulating, cultural, and supporting/habitat services is also needed. The number of studies in Cambodia has largely been driven by global interests from international development partners (60 per cent), and international non-government organisations (20 per cent), as well as universities (international and Cambodian). Among the Cambodian universities, the Royal University of Phnom Penh and Royal University of Agriculture are the key players.

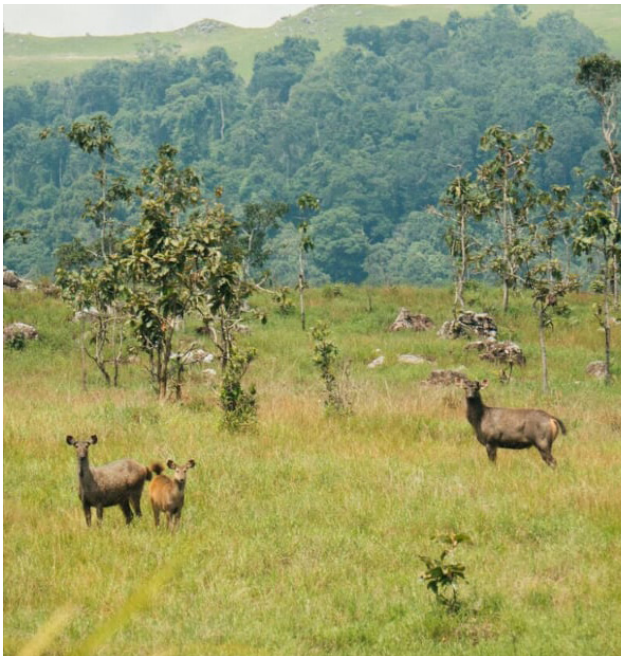


Photo: Landscape of Virachey National Park, Source: MOE 2018

Knowledge Gaps and Capacity Building

Gap analysis in knowledge among key actors working on topics to improve management and financing of protected areas in Cambodia is an important step to improve the current situation. The 48 respondents to a survey conducted with a questionnaire comprised of: government officers from Ministry of Enviornment & Ministry of Agriculture, Forestry, and Fishery (38 per cent); practitioners working in international organisations and civil society organisations (28 per cent): university professors and researchers (24 per cent); consultants, park managers/deputy managers, and post-graduate students (10 per cent). In terms of education level, 42 per cent have a bachelors degree, 40 per cent a masters degree, and 19 per cent a doctorate degree. Based on the survey results, most of the respondents are novices (35 to 46 per cent) or have no knowledge (31 to 36 per cent) relating to ecosystem services measurement and accounting. This is true for provisioning, regulating, and cultural services, with many more respondents unfamiliar with habitat/supporting services. There is thus a big gap on this topic among researchers and government staff in the country. Regarding ecosystem services valuation, half of respondents have no

knowledge, while 42 per cent have some basic knowledge.

Considering the different valuation tools, there is no significant difference on respondents' knowledge across the methods, including estimation of avoided damages, estimation of value of ecosystem assets, monitoring of harvesting forestry/marine products, non-market valuation, estimation of market prices of provisioning services, and surveys of tourism/recreation in the protected area. Almost 60 per cent of respondents have no knowledge of conservation financing, representing a significant challenge in developing sustainable financing schemes to support conservation of protected areas in Cambodia. While enhancing the capacities of researchers and government officers who work at the park level and national level would help address the issue, it is wise to differentiate their training needs.

More than 50 per cent of government officer-respondents expressed the need to understand how to account for and value cultural, provisioning, and habitat/supporting services of ecosystems. Government officers also need the training on conservation financing, especially on regulatory instruments of financing and fiscal financing.

The researcher respondents need more knowledge on the standardised methodologies and approaches of how to assess and value ecosystem services, and how to develop financing instruments to capture these values. They are expected to carry out such studies and hence, need to have skills for these tasks.

Recommendations

- Current government funding is not sufficient to securely protect and conserve Cambodia's forests, and innovative conservation financing mechanisms should therefore be more extensively pursued.
- National BESA++ stocktaking should be regularly updated and made accessible, particularly to government planners and researchers who could use information contained in these studies.
- Training on ecosystem services assessment valuation, conservation financing, and impacts of climate change on biodiversity and ecosystem services should be provided to government officers, park dwellers, scholars, and practitioners as extensively and as quickly as possible.
- Further research related to BESA++ is vital. To support government decision-making and to enable the development of innovative conservation financing mechanisms, it should be conducted as a joint research collaboration between scholars, government officers, and people living in the protected areas.

A national consultation workshop was held on 9 August 2019 to gather inputs from stakeholders, both at the site and national levels. The outcomes of the national consultation were presented during the *Regional Training and Orientation Workshop on Biodiversity/ Economic Analysis for Management, Policy and Innovative Financing Applications*, which was held from 16 to 18 September 2019 in Hanoi, Viet Nam.

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