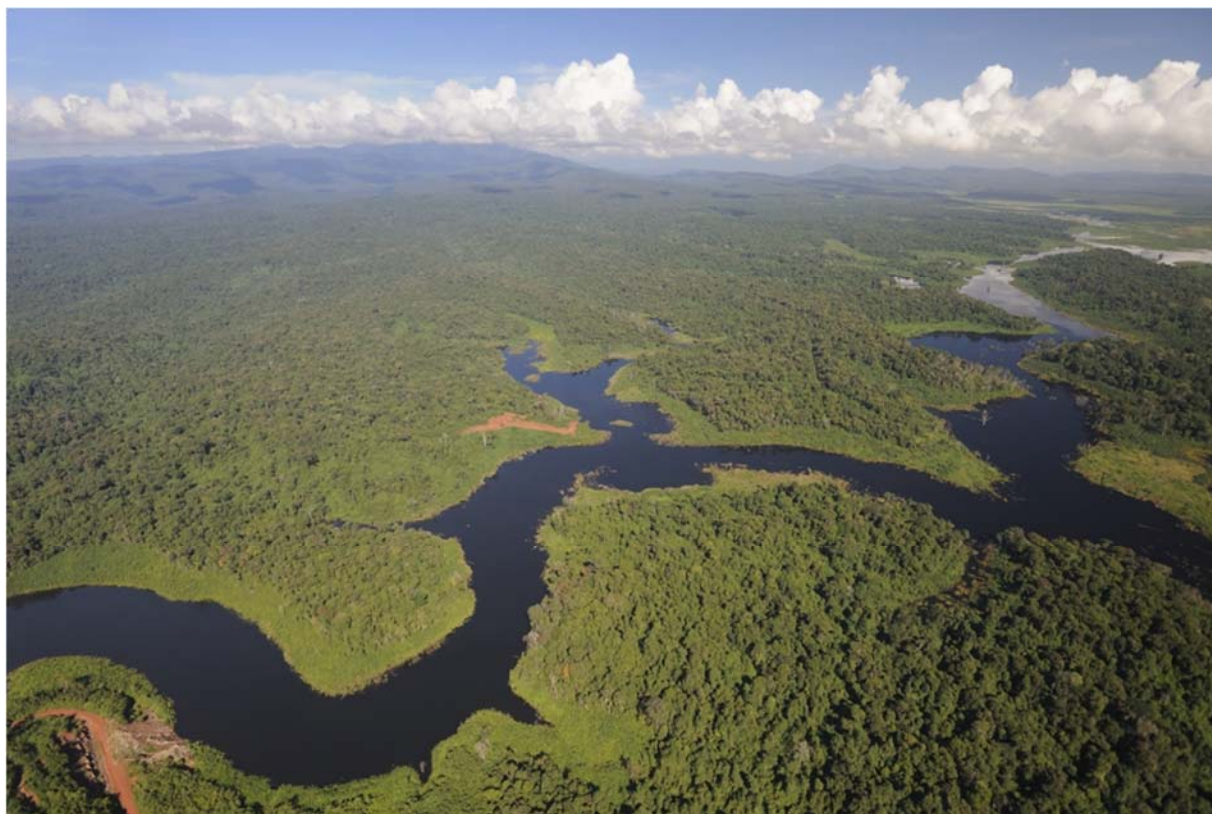




Lessons Learned & Next Steps

Sustainable Provision of Ecosystem Services in the Cardamom Mountain Landscape, Cambodia



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Sustainable Provision of Ecosystem Services Project: Lessons Learned & Next Steps
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1. Introduction

With a view to establishing a trial for a watershed Payments for Ecosystem Services (PES) scheme in the Atay River (“Stung Atay”) catchment, Fauna & Flora International (FFI), with EU funding, explored the case and means for investment in hydrodam catchments in the Cambodian Cardamom Mountains.

Our research showed that investment in forest protection could mitigate the risk of reduced hydropower production which could lead to revenue loss from the Stung Atay hydrodam by USD 180 million over 30 years or an average of USD 6 million per year. The study also showed that whilst forest protection should be undertaken at a regional scale, protection of the Stung Atay catchment would cost less than USD 100,000 per year on an ongoing basis.

Despite a demonstrable economic rationale for trial investment in protection of the Stung Atay catchment, the project was not successful in mobilising either funds for investment, either privately through PES investments, or with public funds through a sustainable financing mechanism.

The research identified the following two-stage transaction structure for implementation of a PES or sustainable financing mechanism (Figures 1 & 2). In stage 1, funds set aside for catchment management by the hydrodam operator under the EIA could be matched by funding from conservation NGOs channelled through a trust fund. In Stage 2, funding would be channelled through government administered funds, such as the Environment Endowment Fund, Protected Areas Fund or National Forestry Development Fund, the creation of which are currently in government policy although these have not yet established by the Royal Government of Cambodia (RGC).

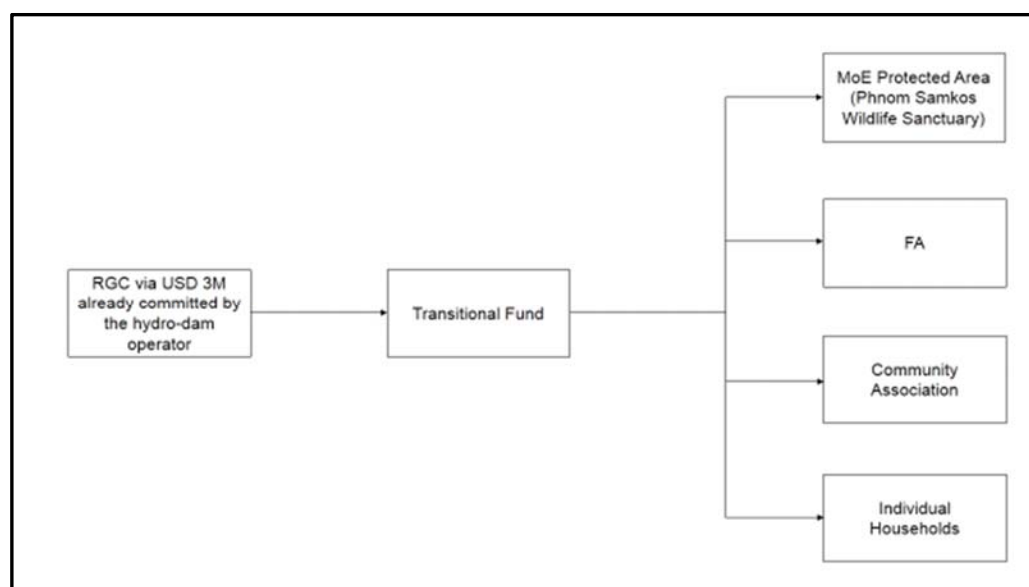


Figure 1: Stage 1 (*Forestry Administration (FA), Ministry of Environment (MoE)*)

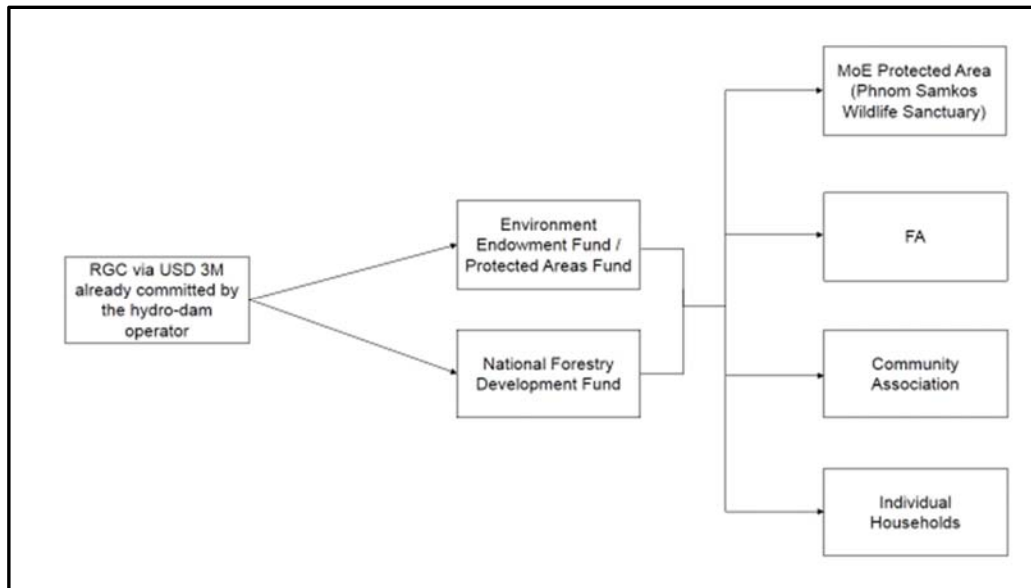


Figure 2: Stage 2 (*Forestry Administration (FA), Ministry of Environment (MoE)*)

This short paper outlines the reasons why the project was not able to meet some objectives and makes recommendations for foundations to create sustainable financing mechanisms in the future.

2. Basis for Operational PES Contracts or Sustainable Financing Mechanism

From a very practical perspective, implementing (i) operational and effective PES contracts, or (ii) a sustainable financing mechanism for natural resource management will be dependent on the following:

- A willing provider or seller of ecosystem services
- A willing investor in or buyer of ecosystem services
- A service that is, or will in the future be, in short supply but can be improved through land-use management interventions
- An enabling policy environment and legislation
- Executive ability, or sufficient capacity to negotiate and oversee PES contracts

This lessons learned paper, looks at each of these necessary conditions for PES or sustainable financing implementation, specific to watershed PES in Cambodia. We draw out learnings and recommendations gathered during the course of the project, designed to lead to a trial of a PES or sustainable financing mechanism.

3. Building Operational PES Contracts or a Sustainable Financing Mechanism

3.1. Willing Buyer

The Sustainable Provisions of Ecosystem Services (SPES) project investigated two potential investors in a trial for hydrodam catchment protection: (1) hydroelectric dam operators, and (2) parastatal electricity providers.

(i) Hydroelectric Dam Operating Companies

Hydroelectric dam operating companies wrote to the Prime Minister in 2009 stating that they should not have to make PES contributions over and above environmental contributions already identified under their Environmental Impact Statement (EIA), in the sum of USD 3 million.

Given the requirement for this financial contribution, it is understandable that a private company would be unwilling to reopen heavily negotiated contracts and accept further costs for catchment protection. As such, the SPES feasibility study concluded that hydrodam operating companies would be unwilling direct buyers under a PES scheme, where in the case of the Stung Atay catchment, Build Operate Transfer (BOT) contracts had already been negotiated and signed.

However, this would not preclude use of the USD 3 million commitment made under the Stung Atay EIA for catchment protection being used for sustainable financing, with PES conditions required for disbursement, as per Figure 1. Additionally, requirements for sustainable financing of hydrodam catchment management could be built into future hydrodam BOT contracts.

(ii) Parastatal Electricity Providers

Electricité du Cambodge is a parastatal electricity provider and has a financial rationale for investment protection, because losses in power production capacity of more than 4% would lead to financial losses for the company. Therefore, the parastatal supports catchment management for the purpose of hydropower production. However, they point out that they have no remit or obligation for catchment protection. Additionally, they are required under law (*Regulations on General Principles for Regulating Electricity Tariffs, 2007*) to reduce electricity prices and see this as an overriding requirement in deciding whether investment in catchments is possible. Furthermore, the issue of high urban electricity prices has been politicised in Cambodia and it is unlikely the government would support anything that opened the door to future price increases.

Recommendations

- Future efforts to implement PES trials should focus on inserting provisions for PES under hydroelectric dam BOT contracts, rather than ex-post contract signing. Hydroelectric dam operating companies already make financial contributions towards catchment management, specified under their BOT contracts. If the government desires that these payments be structured as PES payments, then this should be contractually prescribed under those contracts during negotiation.
- If ever politically feasible, the government should investigate small surcharges on electricity premiums in order to create funds for catchment conservation.
- Donor funds are traditionally not regarded as sustainable sources of finance for natural resource management, however this view is not always recognized in-country with regards to financing provision of ecosystem goods and services.

3.2. Willing Seller

The SPES project investigated two potential classes of service provider under PES contracts:

(i) Government Administrative Entities

PES contracts are typically established with private entities as service providers. However, most if not all hydroelectric dams in Cambodia (including the Stung Atay hydrodam) are in areas under the administration of either the Forest Administration (FA) or Ministry of Environment (MoE). Given this institutional landscape, funds for natural resource management may be more efficiently raised, not as PES, but as either earmarked taxes or through intra-government transfers to relevant departments from the Ministry of Economics and Finance. PES conditionality could be included in such payments, but this is probably not realistic given political realities in Cambodia.

(ii) Catchment Inhabitants

As above, hydroelectric dam catchments in the Cardamom Mountain Landscape tend to be remote areas administered by the FA or MoE and tend to be sparsely inhabited. Nevertheless, these small populations have sufficient legal standing to receive payments under PES contracts.

Recommendations

- Both investors and service providers in Cambodia are likely to be government or parastatal entities. As such, PES contracts between such bodies are less suitable or politically unlikely when compared to intra-government transfers.
- The government could investigate entering into PES contracts with the limited numbers of catchment inhabitants as a very obvious way to improve natural resource management and improve rural livelihoods.

3.3. An Ecosystem Service in Short Supply

Hydroelectric dam PES schemes are usually marketed on the basis that deforestation leads to increased reservoir sedimentation which leads to reduced electricity supply. However, the Stung Atay hydrodam has improved reservoir sedimentation traps and flushing technology which counter this issue. Therefore erosion control as an ecosystem service is less valuable within this context.

However, growing scientific evidence links deforestation to reduced local rainfall and reduced power production (Stickler, *et al.* 2013). This suggests an available ecosystem service which could in the future be marketed based on current deforestation rates in Cambodia and the region.

Recommendations

The link between deforestation and rainfall in South-East Asia is imperfectly understood. Further regional-scale research is required for a complete understanding of the ecosystem services linked to forest cover and necessary to hydroelectricity providers. Undertaking such research would be a valuable investment as part of strategic energy supply planning.

3.4. Appropriate Legislation

Written policy encourages use of PES in Cambodia for natural resource management. However, in practice and despite apparent support from certain government entities there is a degree of wariness around its use as a public policy tool, in particular around hydroelectricity providers. This means that although private PES contracts are acceptable, PES systems which involve government may be difficult until government changes its *de facto* policy approach to PES.

Further, given the importance of forest ecosystem services, forestry policy remains ambiguous. Whilst policy appears to create a sound basis for forest protection, patchy implementation and enforcement gives the impression that *de facto* policy is to not object to forest clearance.

Recommendations

- The government should take steps to clarify policy around PES to identify those circumstances in which it is encouraged and those in which it cannot be used as a policy tool. This will encourage donors and conservation organisations to invest resources in developing PES pilots around ecosystem services which the government wishes to protect.
- The government should take steps to clarify its prioritisation of and policies for forest protection so as to guide donor or private investment in natural resources. In the absence of external support the protection of biodiversity is significantly reduced, therefore implementing sustainable financing for natural resource management should be prioritized.

3.5. Executive Ability

Despite PES conservation tools having been in use for more than a decade, they remain challenging for conservation organisations and governments alike to adopt. The tool requires (1) clear lines of decision-making authority, and (2) a range of skillsets necessary to form and perform contracts for natural resource provision. Within the Cambodian natural resource management context, where decision-making authority is not clear or delegated and capacity of decision-makers specific to PES is limited, there will remain difficulties in implementation of PES and other sustainable financing mechanisms.

Recommendations

- In order to build sustainable financing mechanisms, which require inter-ministry collaboration, clear decision-making authority should first be built, and thereafter comprehensive skills-training undertaken at national and sub-national levels, or external resources hired, in order to implement any PES natural resource management methodologies.
- A first step towards making sure that the executive capacity for implementation of sustainable financing mechanisms is to assist in establishing the Environment Endowment Fund, Protected Areas Fund and National Forestry Development Fund, as are envisaged under Cambodian law but not yet established, to transmit payments between ecosystem service providers and investors. Additionally, a very clear delineation of authority and remit will need to be made between these funds.

- Decision-makers in government will need to be more actively engaged if decisions are to be reached around natural resource management strategies and tools. To date, there has been a 'bandwidth' constraint with regards to the attention placed on this otherwise important issue.

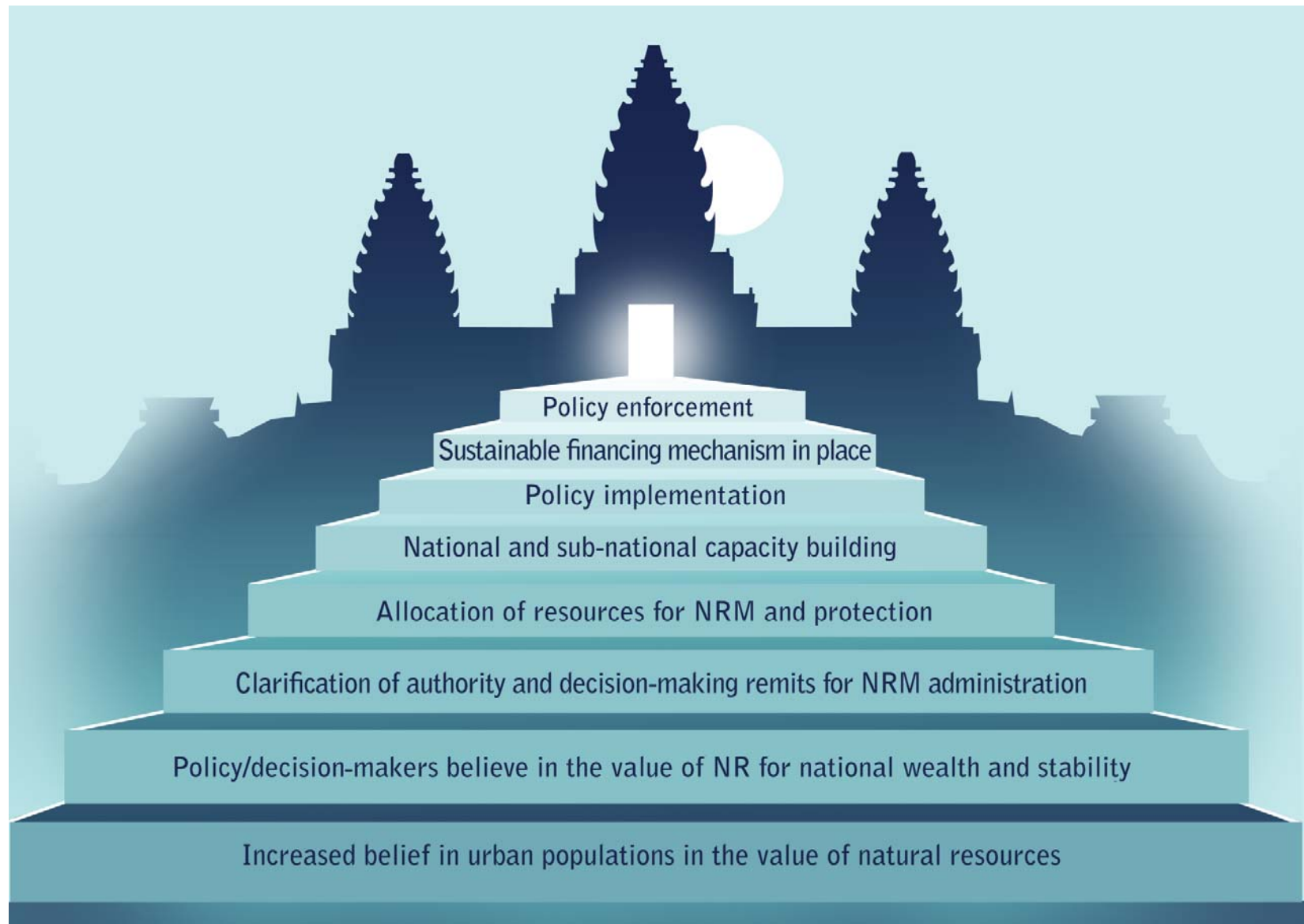
4. Final Comments

The development of sustainable financing mechanisms for natural resource management rest upon an understanding amongst policy and decision-makers of the importance of natural resources and the need to prioritise spending of environmental funds on management of sustainable resources over and above other competing priorities. This can only be achieved once all ministries and especially the ministries with greatest influence are focused on the importance of how natural resources link to national wellbeing and sustainable development. Without this, it is unlikely that there will be sufficient investment in Cambodia's all important ecosystem goods and services or in the need to clarify overlapping ministerial remits and decision-making authority.

Reference

Stickler, C.M. *et al.* 2013. Proceedings of the National Academy of Sciences doi: 10.1073/pnas.1215331110.

The following page represents the recommended next steps, in ascending order, to assist in realizing a payment for ecosystem services mechanism and generally sustainable financing for natural resource management within Cambodia.



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