OVERVIEW

COUNTRIES: Laos, Vietnam

MECHANISM TYPE: Payment for Forest Ecosystem Services (PFES)

KEY MESSAGE: WWF’s Carbon and Biodiversity (CarBi) project is tackling the drivers of forest loss in the Central Annamite Mountains located within both Laos and Vietnam. To ensure that its impacts continue long past the end of the project, CarBi has established several frameworks for PFES schemes. In Vietnam the government-managed Forest Protection and Development Fund (VNFF) receives funds from hydro-electric companies, which is then distributed to local communities to protect and manage vital forest ecosystem services. In Laos, CarBi has established the first functional Community Biodiversity Conservation Agreements, incentivizing sustainable land use by beneficiary communities. CarBi will also explore the feasibility of establishing the first market-driven PFES scheme in its Laos target areas and will work with relevant government agencies and local communities to develop the regulatory frameworks and skills required, which may also inform the expansion of such schemes throughout the country. These PFES schemes incentivize local communities’ participation in the protection and restoration of biodiversity and concomitant forest ecosystem services in Protected Areas as well as priority biodiversity corridor areas, and also diversify and enhance employment and livelihood opportunities. They also establish a framework balancing socio-economic development with the maintenance and restoration of ecosystem services’ integrity, without compromising the options available to future generations. Government policy makers and those designing conservation projects, particularly in the Greater Mekong Region, should consider CarBi’s PFES models to sustainably fund their own conservation and livelihood initiatives.
INTRODUCTION

Forest loss is having a severe and detrimental impact on the global climate and biodiversity, as well as the ability of local communities to develop and sustain long-term livelihoods.

WWF’s Carbon and Biodiversity (CarBi) project is making a positive contribution to solving this problem in Vietnam and Laos while emphasizing the long-term sustainability of its conservation activities. This case study outlines the efforts of the CarBi project to develop sustainable financing mechanisms to support conservation interventions beyond the project lifetime. It concludes with a number of recommendations for the establishment of similar financing mechanisms throughout developing nations.

PROBLEM STATEMENT

The long-term effectiveness of conservation interventions usually depends on securing sustainable sources of finance to continue the necessary ecosystem management beyond the lifetime of projects.

In developing countries it is usually risky to rely only on traditional donor or public funds, such as that from governments, foundations, and corporate or individual sources. It can lead to funding gaps, they are often short term, focused on capital investment, with very limited support for sustaining the necessary structures and institutions, and often comes with specific objectives, or an agenda, attached to it. Creating non-traditional financing mechanisms linked to markets, can contribute to a diversified and typically longer term funding base, which can also be complementary to traditional financing for conservation activities. One challenge with designing and implementing these financing mechanisms, is how to demonstrate the value of sustainably conserved biodiversity to socio-economic development, which would re-frame conservation as an investment rather than a net cost to public budgets or private enterprises. A second challenge is designing a mechanism that accurately captures the economic value of biodiversity conservation and the resultant ecosystem services.
THE CARBI PROJECT

WWF’s CarBi project is an unprecedented six-year, trans-border Conservation Economy\(^i\) project, which aims to protect and regenerate more than 200,000ha of unique forest in one of the world’s biodiversity hot spots, the Central Annamite Mountains that join Laos and Vietnam (Figure 1).

CarBi brings together development partners, national, provincial and district governments, and local communities to preserve and restore the forests and their unique species, and to protect and enhance the livelihoods of the people whose existence depends on the ecosystem services provided by these forests. Financial support to CarBi is primarily provided by KfW, the German Development Bank.

CarBi operates in six provinces, Quang Nam and Thua Thien-Hue in Vietnam, and Saravan, Xekong, Champassak and Attapue in Laos. Its four main components are Protected Area Management, Forest Restoration, Timber Trade and REDD+/PFES. Its protected area management interventions are focused on 4 national protected areas, complemented by specific forest restoration operations in two biodiversity corridors.

\(^i\) A Conservation Economy is an economy in which key principles and practices of biodiversity conservation have been fully integrated into all forms and levels of economic activity. It differs from a Green Economy, defined as “economy that results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities” (UNEP, 2011), by its focus on biodiversity conservation.
CARBI’S SUSTAINABLE FINANCING MECHANISMS

The CarBi project is implementing the framework for several Payments for Forest Environmental Services (PFES) schemes to ensure the sustainability of its conservation interventions far beyond the end of the project.

The first of these focus on forest protection and replanting through the Afforestation, Regeneration and Protection contracts. CarBi has also developed the first Biodiversity Conservation Agreements (BCA) in Laos that incentivize certain conservation actions for local communities in the target forests. Strictly speaking, these are not considered PFES schemes because CarBi and its donors, and not a market, are ‘buying’ the ecosystem services. However, they do establish the framework for them to transition into a PFES scheme. It is within this context which they are discussed in this case study. CarBi, however, is implementing one market-driven PFES scheme that concentrates on restoration and protection of forests in hydropower catchment areas. CarBi was also originally designed to use Reducing Emissions from Deforestation and Forest Degradation (REDD) as a sustainable funding mechanism, however this was found unviable (see the section ‘Feasibility for REDD+ carbon credit trading on voluntary markets’ below for more explanation). CarBi does, however, undertake REDD+ capacity building activities to ensure that the Laos and Vietnamese governments are ready to participate in and benefit from REDD+ when it becomes feasible in the future.

Payments for Ecosystem Services:
Afforestation, Regeneration and Protection Contracts

CarBi compensates individual and groups of farmers and communities in the Quang Nam and Thua Thien-Hue provinces of Vietnam for afforestation, taking on the managed regeneration of the forest, and protection of existing forest through Afforestation, Regeneration and Protection contracts.

Payments for regeneration, afforestation and Community Forest Management (CFM) activities (which include the planting of indigenous species, boundary clearance, and regenerated trees marking and protection) are facilitated through saving accounts for project farmers. Withdrawals are permitted only five times in four years and Agribank district branches have been selected to conduct the management of saving accounts for project farmers and groups of farmers. There is regular support provided to ensure progress according to contract obligation, and formal checks are done before each payment is considered, with further follow-up checks. Some of these farmer groups have also been selected to undertake enrichment activities, specifically the planting and sustainable management of rattan, as part of the regeneration activities.
Selection for participating in the enrichment activities is based on whether the farmers have the capacity to perform them and priority is given to those in targeted areas.

There are also 3,059 ha of forest under Forest Protection contracts by 24 groups of farmers in the two provinces. Under these contracts, farmer groups undertake basic patrolling and protection activities and also conduct progress reporting. These groups have their payments facilitated through direct payment or payment into the bank account of the specific group of households/farmers. Regular spot checks and formal quarterly evaluation are undertaken to ensure compliance with the contract conditions before payment is made. Consequences of violating the contracts are a suspension of payment until they comply.

In addition to accessing these saving accounts, participating farmers also have land-use rights allocated to them through the issuing of ‘Red Books’ in the case of Afforestation, Regeneration and CFM contracts, which secure specific land use rights for participating farmers for 50 years, and they are issued in both names of a married couple. These ‘Red Books’ ensure that communities now have long term security of tenure and rights to utilize the land for sustaining and enhancing livelihoods, within a framework of promoting biodiversity integrity. Thus far, 756 ha of forest land have thus far been allocated with ‘Red Books’ to 311 households.

CarBi will support Afforestation, Regeneration, CFM and Protection contracts until the end of the project (which is December 2016); after this deadline they will be transitioned to be included in the Forest Protection and Development Fund PFES schemes (described below) in the target areas to continue payments and forest management beyond this date. This PFES schemes are creating employment, enhancing livelihood resilience and restoring forests in priority biodiversity corridor areas; all while establishing experience and a structure for PFES in these communities.
Payment for Ecosystem Services: Biodiversity Conservation Agreements

CarBi is piloting the establishment of a PFES scheme in Laos through its incentivized Biodiversity Conservation Agreements (BCA). These agreements, between the chief of a village, the provincial and district government, managers of the National Protected Area (Xe Sap) and CarBi, aim to limit activities undertaken by local communities that negatively impact on the ecosystem services of the CarBi target forests, by creating incentives for local communities to conserve biodiversity as a competitive land-use option. CarBi has developed BCAs with 3 local communities in their target forests, with plans to expand to a total of 10 local communities, to provide certain benefits, rather than cash, in exchange for conservation actions. The conservation actions include the termination of clearing forests for agricultural and other purposes on lands under the responsibility of the community and beyond; preventing and stopping the illegal hunting and trade of wildlife living in forests and rivers; and the sustainable collection and management of non-timber forest products (NTFPs) in the protected area. If these conditions are met, they receive benefits that include rice banks; irrigation system repairs; hill gravity water system and/or support to establish:

- Dry season crop cultivation;
- Organic vegetable gardening;
- Fish aquaculture;
- Village patrol units; and/or
- Sustainable harvesting of wild bees.

Village in Western Quang Nam province, Vietnam, the region where CarBi operates.
Enforcement of the agreements takes place by community patrol teams as well as by the Laos government officers from the District Office for Natural Resources and Environment, and the District Office for Agriculture and Forestry. Consequences of violating the agreements are a reduction or suspension of benefits, and/or a cash fine.

**Payment for Ecosystem Services: Forest Protection and Development Fund**

CarBi has supported the Vietnamese government to establish and scale up a PFES scheme, in 27,800ha of target forests in the Quang Nam province. The Forest Protection and Development Fund (VNFF) aims to facilitate sustainable funding to preserve and restore the ecosystem services of the forests and watersheds that hydro-electric companies rely on. As part of the operating conditions of hydro-electric companies in Vietnam, a fee is paid into the government-managed VNFF. 90% of these funds are distributed to local communities that have been contracted to protect and manage surrounding forests (10% is used for administrative costs by government). Each household, on average, protects and manages between 10 to 15ha, so they receive 3 to 5 million VND (equal to US$143 to US$238) per year through the PFES program, which allows them to purchase enough rice for a family for approximately 6 months. CarBi is also providing training to these groups of households on forest protection, forest management and benefit sharing mechanisms.

CarBi has gained tentative government agreement that the VNFF will continue to fund the presence of some Forest Guards in the target Saola Nature Reserves past the end of the project. CarBi envisages that this PFES scheme will become the long-term mechanism that will continue to fund community forest protection beyond the end of the project. This will also pave the way for other CarBi PFES interventions, which will be developed in partnership with the relevant Vietnamese authorities in months to come. CarBi is also facilitating the development of a Technical PFES Guideline, which will be a detailed practical manual on the establishment and management of PFES schemes in its target areas, and beyond.

**Feasibility for REDD carbon credit trading on voluntary markets**

The original design of the CarBi project included developing a trans-boundary Project Design Document (PDD) for a REDD project, as well as related monitoring, verification and capacity building work. However, a REDD feasibility study undertaken in late 2012 found that a trans-boundary project was neither technically nor financially viable. The basis for this result includes:

1. Limited number of existing Verified Carbon Standard (VCS) methodologies available. VM0015 was considered the most suitable for the project area. However, this methodology only considered reductions
in deforestation and does not allow for credits for reducing forest degradation. As it is estimated that around 50% of forest-based emissions in Laos and Vietnam are from forest degradation, this reduces the potential volume of carbon credits that could be generated.

2. Relatively low historic deforestation rates in the Protected Areas point to limited potential to reduce these deforestation rates and so generate valid carbon credits for trade.

3. Accurate measurement of forest degradation is technically challenging and resource-intensive, requiring high-resolution remote sensing imagery and extensive field-based plot monitoring. The additional costs of including degradation (even if the methodology had allowed it) would be significant.

4. Non-supportive policy conditions. REDD policy does not allow for the sale of credits from trans-boundary projects. The credits from each country would have to be negotiated and sold separately.

5. No business case. The analysis examined the anticipated revenue of the sale of credits at $3 (low scenario), $6 (medium scenario) and $9 (high scenario) per Verified Carbon Unit (VCU), and found that over the first 10 years of the project it would barely cover the transaction costs of PDD development, let alone cover ongoing activity costs or opportunity costs.

CarBi is, however, continuing its support to the Vietnamese government for REDD+ readiness, in the case that any of the above reasons change in the future, by supporting the preparation of an Emission Reduction Program Idea Note (ERPIN) as well as an Emission Reduction Proposal Design (ERPD). An approved ERPD will allow access to funding to further develop its REDD potential. CarBi will also continue to prepare project counterparts for emerging market opportunities such as a future potential compliance market, bilateral offset agreements or performance-based payments from bilateral or multilateral donors.

WWF Vietnam, through CarBi, will also soon launch specific REDD+ interventions focused on Participatory Forest Monitoring (PFM) to build core competencies in the technical and operational aspects of PFM (and carbon monitoring) of local stakeholders; identification of REDD+ interventions at commune level and the integration of these into local development plans in a selection of communes; the definition of pro-poor benefit sharing systems, including evaluating existing commune development funds and reviewing
other models in Vietnam (e.g. PFES); as well as REDD+ awareness raising and technical training for key stakeholders in Quang Nam, Quang Tri and Thua Thien-Hue provinces on the potential for REDD+ in their localities.

**Training and Capacity Building for Conservation and Livelihoods Improvement**

In conjunction with the above PFES schemes, training and capacity building are an important component of the sustainability plan for CarBi. CarBi forest guards receive technical, leadership and health and safety training. Village Focus International, a CarBi project partner, have conducted Participative Rural Assessments for 10 key villages in Laos, after which individual livelihood improvement plans for each of the selected household were concluded. Pilot models include raising poultry, coffee and banana cultivation, tree plantation, paddy rice, and small animal and cattle husbandry. In Vietnam, staff from implementing agencies, partners at provincial, district and commune level, and participating farmers have been given training on community forest management, and on forest restoration and protection techniques. CarBi’s government counterparts have also received training in all of CarBi’s components (Timber Trade, Restoration, Protected Area Management and PFES/REDD), as well as protected area management planning.

**Outcomes**

CarBi places specific emphasis on job creation, income generation, and capacity building. Up to December 2014, CarBi has benefitted more than 5,940 people, creating in excess of 113,200 person days of work, and generated more than US$1,130,000 of income. More than 16,900 capacity building and training opportunities were also provided to local communities, as well as commune, district, provincial and national government staff.

Table 1 below outlines the number of beneficiaries and income derived from CarBi’s Forest Regeneration and Afforestation and CFM activities in Vietnam. These activities are set to grow exponentially in months to come, and numbers of beneficiaries and concomitant income will also increase dramatically as it gathers pace.
Impact

The CarBi project will only be completed at the end of December 2016, so it is difficult to assess its overall impact on either conservation or economic development. However, the outcomes show that remarkable progress has been made. Some key impacts to dates include:

1. The protected areas of the Quang Nam and Thua Thien Hue provinces, as well as the Bach Ma National Park and Xe Sap National Protected Area are benefiting significantly from improved management as clearly indicated in the improvements of the Management Effectiveness Tracking Tool (METT) results since project start, reflected in Table 2.

<table>
<thead>
<tr>
<th>Year</th>
<th>Xe Sap NBCA</th>
<th>Hue SNR</th>
<th>QNSNR</th>
<th>BMNP</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>16.7%</td>
<td>37.3%</td>
<td>32.4%</td>
<td>65.7%</td>
</tr>
<tr>
<td>2011</td>
<td>N/C</td>
<td>40.2%</td>
<td>33.2%</td>
<td>66.7%</td>
</tr>
<tr>
<td>2012</td>
<td>42.2%</td>
<td>46.1%</td>
<td>47.1%</td>
<td>61.8%</td>
</tr>
<tr>
<td>2013</td>
<td>49%</td>
<td>53.9%</td>
<td>53.9%</td>
<td>70.6%</td>
</tr>
</tbody>
</table>

Table 2: Changes in the Management Effectiveness Tracking Tool (METT) Score in Four of CarBi’s Target Protected Areas from 2010 to 2013: Quang Nam (QNSNR) and Thua Thien Hue (HSNR) Provinces, Bach Ma National Park (BMNP) and Xe Sap National Protected Area (XE SAP NBCA) in Laos. (N/C = Not Conducted)
2. Some of Vietnam’s most threatened species have been photographed through CarBi’s Camera Trapping Programme, providing the only recent field records from the country of the black bear and pangolin species. The first live field record of the globally endangered Truong Son Muntjac species have also recently been recorded for the first time in more than 10 years. The most significant achievement thus far was the rediscovery of Saola, one of the rarest and most threatened mammals on the planet, which has been photographed in Vietnam for the first time in the 21st century. These provide evidence that CarBi’s efforts are being effective in conserving critical habitat for these threatened species.

3. The income of sampled households increased by an average of 11.5% per year in the CarBi restoration areas in Vietnam. CarBi’s restoration activities enhanced local households’ income by approximately 17% in Quang Nam due to an earlier start, whilst in Thua Thien-Hue, the household income increased by around 8.3%. It is expected that these income levels will increase during the next two years when more local people will become beneficiaries of income sources from CarBi’s investment.

4. By December 2014, CarBi’s forest guards in Vietnam had spent 29,626 days on patrol, destroyed 50,245 snares and 809 illegal camps. By December 2014, CarBi teams in Laos destroyed a total of 5,669 snares and 318 illegal camps during 3,699 patrol days since patrolling was operationalized in March 2012.
5. CarBi also conducted arguably the most progressive International Timber Trade Leakage Study, which objectively and scientifically confirm the nature and extent of logging in its target areas.

Overall, CarBi’s design and implementation have produced very positive outcomes and impacts on the biodiversity and people’s livelihoods within the target areas. CarBi’s efforts have led to increased management effectiveness of the targeted protected areas, the protection of critical habitat for threatened species, enhanced livelihoods of local communities, and has continued to minimize opportunities for species loss through poaching. CarBi has also been able to successfully align its activities with a long term strategic approach towards financial sustainability, based on community based forest protection through an evolving PFES system in its target areas.

**LESSONS LEARNED**

Despite the growth in the Conservation Economy of the target areas, including an evolving incentivized community based forest protection regime and some constructive movement towards sustainable PFES mechanisms, there are still some challenges which are impacting on the desired outcomes.

Project farmer beneficiaries on the Vietnam side, most of them Ko Tu ethnic minority people, are not accustomed to the project payment system of saving accounts that can be accessed only five times in approximately four years. As such, they prioritize non-CarBi work when quick cash is required, as is the case for example around Lunar New Year, and are encroaching on potential restoration land with the establishment of acacia and rubber plantations. Furthermore, some previous poorly implemented projects in the same villages have left some parts of the community in doubt as to whether CarBi will bring them real benefits, which makes motivating them quite challenging. To tackle this, CarBi is working with the local communities and authorities to support rattan planting in the forest areas under CarBi’s PFES scheme in order to provide an additional sustainable livelihood opportunity with more short term financial benefits.

One of the biggest challenges in the implementation of the PFES schemes in
Vietnam, has been the appropriate monitoring of the local communities’ forest protection and management activities. While local communities are contracted for forest management and paid through the PFES scheme, current other projects remunerate purely based on area managed, and no real focus is placed on the quality of the management services, and its impact. CarBi is placing special focus on quality assurance and performance based payments, and is working closely with partner government counterparts to establish a more robust evaluation system. The solution is to improve government involvement, as well as participative monitoring, where communities co-conduct monitoring of their own actions’ impact. However, comprehensive training must be provided and will require significant resources to ensure that this is an effective monitoring and compliance system. CarBi continues to work with government counterparts to devise an appropriate monitoring and compliance system, and will also address this important matter in the PFES Technical Guideline.

**FOLLOW UP ACTIVITIES**

Based on the results from the REDD feasibility study, CarBi will focus on the PFES component as the main sustainable financing mechanism going forward. Currently CarBi and its project donors are paying local communities to manage forests via the Afforestation, Regeneration, CFM and Protection contracts, as well as Biodiversity Conservation Agreements. The challenge remains to connect the established and tested PFES structure to a source of continued payments for the broader basket of ecosystem services secured by these PFES schemes. CarBi are developing an action plan to transition the restoration activities into the PFES schemes so that local communities working to sustain and restore forest ecosystem services, receive remuneration from hydro-electric companies through the VNFF system.

As there is no functional legal framework for PFES in Laos, a slightly different approach is needed. CarBi will work with the Lao Department of Forest Resource Management to initially establish legal and institutional frameworks for PFES in Laos. Opportunities for sharing experiences between Vietnam and Laos are also being considered. CarBi will also conduct a pre-feasibility study in Xe Sap NPA to establish the demand and supply of basic ecosystem services in the area, with specific focus on hydro-companies.
POLICY AND DESIGN RECOMMENDATIONS

PFES schemes can be very effective for ensuring the sustainability of conservation projects, especially in areas where ecosystem services are under pressure from human encroachment. Incentivizing conservation of these ecosystem services and providing alternative livelihood options for those people who directly rely on them, will ensure that their protection can compete against more destructive land-use options. Based on the experience and success of CarBi’s sustainable financing mechanisms, the following are recommended for government policy-makers and those designing conservation projects:

Capacity building

- Engage with national and provincial governments to develop and implement PFES schemes, particularly in developing nations. Building the capacity of government to manage these schemes will ensure that the impacts of a conservation intervention will continue long past the end of the projects’ life.

- Providing support and advice to governments on establishing the necessary regulatory frameworks will be critical to the success of these schemes. Developing pilot PFES schemes and learning from these experiences provides an excellent introduction to sustainable financing mechanisms and the basis on which to develop larger schemes, and the regulatory frameworks that are required to enable the schemes to function properly.

- PFES schemes should be developed with the assistance of PFES experts to provide the necessary technical guidance. Advisory groups of both national and international experts and partnerships with organizations like WWF are required to aid in the policy design process and to develop the required knowledge and experience.

- Governments should be supported in identifying a suitable ‘buyer’ of the ecosystem services that are being protected and maintained by a conservation project. Engaging the private sector through not just regulation, but also through
the development of positive incentives, are some of the most effective ways to ensure investments for a PFES scheme.

• Countries with PFES potential, and where institutional and technical frameworks must still be developed, should conduct study tours to areas with a successful PFES track record to not only gain some insights into the required mechanisms, but also to inspire political leaders into action.

Monitoring and compliance

• Monitoring and compliance of PFES contract obligations are critical to ensuring that conservation projects achieve the desired impacts on biodiversity and livelihood resilience. An important part of monitoring and compliance of a PFES scheme relies on having some objective measures towards positive changes in biodiversity, such as increased forest cover, key indicator species, and/or extent of prevailing threats. This is an important point to be addressed early on in the PFES scheme design.

Benefits for local communities

• PFES schemes also require payments that are high enough to compensate for the opportunity costs - that is to compensate for the loss of income from activities currently taking place in these forests. The schemes should be designed to include a regular review of the payments.

• PFES schemes need clear land tenure to function correctly. These schemes should be designed with a land allocation program, which will provide sufficient and long-term land security to communities to justify their significant labor investment and expected return on their investment, as well as permanence of the conservation interventions.

• Although it may be uncommon to the beneficiary communities targeted by PFES, it is recommended that payments are given at the end of each period, after verification of the required conservation effort. Due to the fact that these payments are made for a contractual obligation to undertake certain land management actions, it is logical to pay at the end of a period, because it is much easier to withhold a payment than to request its return if these contractual obligations are not met.
**THE CARBI PROGRAMME**

A WWF-Greater Mekong Programme
An unprecedented four-year, trans-border conservation economy assignment.

**Aims:**

- **Protect and restore** >200,000 hectares of forest in the Central Annamite Mountains joining Laos and Vietnam
- **Protect and enhance** sustainable livelihoods of people dependent on the forests’ ecosystem services
- **Bring together development partners:** national, provincial and district governments; and local communities to preserve this biodiversity hotspot

The CarBi Programme is co-financed by the Federal Republic of Germany within the framework of the International Climate Initiative of the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) through KfW, the German Development Bank.

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**References**


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**CASE STUDY SERIES: TESTING SUSTAINABLE FINANCING FOR CONSERVATION IN THE GREATER MEEKONG**

The WWF-Greater Mekong Sustainable Finance for Conservation case study series brings to light high quality examples of different models in the Mekong countries for economic valuation of natural capital, payments for ecosystem services and benefits sharing mechanisms.

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**Contact Information**

Fanie Bekker
Transboundary Director, CarBi Project, WWF-Greater Mekong
Tel.: + 856 21 216080
Email: fanie.bekker@wwf.panda.org
wwf.panda.org/greatermekong/carbi/