



Payment for Forest Ecosystem Services (PFES): pilot implementation in Lam Dong Province, Vietnam

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Introduction

Together with national and provincial partners, Winrock's Asia Regional Biodiversity Conservation Program (ARBCP), funded by USAID, developed a sustainable PES-based financing mechanism (entitled 'Payment for Forest Environmental Services – PFES – in Vietnam') explicitly designed to maintain biodiversity at a landscape level. The pilot approach supported natural resource management and conservation in ways that provided real economic opportunities to rural communities, using sustainable financing targeted at poverty reduction. PFES has provided local stakeholders with a significant role in managing those forest resources that contribute to their livelihoods, helping to ensure continuing local support for conservation. Hydropower and water supply companies are among the principal beneficiaries of the ecosystem services provided by forested areas and make the greatest financial contribution towards safeguarding those services. Funding has been provided by Asia Regional Biodiversity Conservation Program (ARBCP), funded by USAID's Regional Development Mission for Asia (RDMA) and coordinated by Winrock International.

The successful pilot project has led to a national scaling up of PFES (enshrined in a Prime Ministerial Decree) and to significant interest elsewhere in the South East Asia region in replicating the approach followed in Vietnam.

The implementing partners have been:

- Vietnam Ministry of Agriculture and Rural Development
- Lam Dong Province Peoples' Committee
- Lam Dong Province Department of Agriculture and Rural Development
- Lam Dong Province Department of Natural Resources and Environment

A Steering Committee was formed to oversee the development and implementation of a workplan, including the allocation of roles and responsibilities.

Challenges and objectives

Threats to biodiversity in South East Asia are largely driven by the imperative for economic development. One of the most pressing issues for conservation involves offsetting the costs to



rural communities of protecting natural habitats rather than converting them to agriculture or other uses that provide immediate income generation. Biodiversity and watershed conservation services provided by forests are frequently undervalued and few markets exist where conservation benefits can be converted into tangible economic values that in turn influence human behaviour to promote conservation. As a result, economic returns to be derived from protecting forests are not high enough to prevent their conversion to other uses, leading to biodiversity loss and degradation of water quality and quantity.

In Vietnam, as elsewhere in the region, insufficient funding for conservation serves as a major constraint to achieving biodiversity goals. Costs of managing protected areas are high, particularly those related to biological and enforcement monitoring. Management boards for protected areas rely on funding provided by Vietnam's central government. Few funding sources are available for conservation initiatives located outside protected areas, and reforestation programmes have not received enough funding to meet and maintain required results.

The approach: how did PES help overcome barriers to dealing with the challenge?

Planning

In 2006-2007, Lam Dong Province was supported by ARBCP to develop its first Biodiversity Conservation Action Plan (BCAP), establishing clearly defined landscape-level management objectives and targets for strategic biodiversity corridors to be achieved by 2020. The plan set out the framework for using funds generated by Payments for Ecosystem Services (PES) mechanisms to support and sustain the Province's priority conservation targets. The BCAP was the first in Vietnam to be fully coordinated with a province's socio-economic development plan.

Box 1 – Provisions of the Payment for Forest Environmental Services pilot policy

Three categories of Forest Environmental Services (FES) were stipulated in the pilot policy:

- water regulation
- soil conservation
- visual quality of landscape

FES 'providers' were identified as local farmers, local farming households and local farming communities who had already been allocated forest land.

FES 'buyers' were identified as:

- publicly owned water and electricity utilities
- tourism operators

The pilot policy directed these buyers to pay for FES (water regulation and soil conservation, in the case of the public utilities) and landscape quality (in the case of tourism operators).



Based on preliminary studies conducted by Winrock, the pilot policy set payment levels at:

- 20 VND¹ per kilowatt-hour from commercial hydropower production businesses
- 40 VND per cubic metre from clean-water production businesses
- between 0.5% and 2% of annual revenue from tourism businesses.

Pilot phase

In 2007 ARBCP assisted the Vietnamese Ministry of Agriculture and Rural Development (MARD) to develop a pilot policy on Payment for Forest Environmental Services (PFES) in Vietnam – see Box 1. The pilot policy came into effect through a Prime-Ministerial Decision in April 2008 and implementation of pilot testing activities in two provinces (Lam Dong in the south of the country and Son La in the north) took place between January 2009 and December 2010 under the overall responsibility of MARD. ARBCP led implementation in Lam Dong Province, while activities in Son La Province were supported by the German bilateral cooperation agency GTZ (now GIZ).

Project implementation preparations

The preparations and process for implementing the pilot PFES policy in Lam Dong Province included scientific studies, national and local awareness raising efforts, and provincial capacity building and training activities. A national PFES Steering Committee was established and a two-year workplan was finalised by Lam Dong Province's Department of Agriculture and Rural Development (DARD).

The Dong Nai river basin (see map, Figure 1) was chosen as the river basin from which to select pilot sites because:

- It possessed the necessary conditions to directly support conservation and development objectives set out by the Government of Vietnam in the BCAP;
- The high demand for watershed services from Ho Chi Minh City and surrounding urban industrial parks gave PFES mechanisms in the Dong Nai basin the best chance of success; and
- The area's proximity to major tourism markets offered opportunities to turn demand for biodiversity conservation services into tangible economic incentives.

A spatial assessment was conducted to determine the level of economic threats in priority conservation areas of the Dong Nai river basin and two macroeconomic assessments were carried out to understand the rate and direction of likely changes under future development plans. Based on the information available, two focal areas – Da Teh and Da Nhim (see map, Figure 1) were identified as suitable pilot sites. Both sites adjoin National Parks and lie along



a forested landscape corridor of strategic importance for national biodiversity conservation goals.

Box 2 – Public awareness

Throughout the two-year implementation phase, the provincial authorities and the Forest Protection and Development Fund (FPDF), supported by ARBCP undertook a major public information campaign on PFES, including installation of poster panels in four districts, display of more than 200 small billboards at major tourist sites and some 40 large roadside billboards, and distribution of more than 14,000 brochures, as well as convening meetings and workshops for local stakeholders.

The FPDF also launched a VND 438 million multimedia publicity programme in September 2009, which disseminated information on PFES through television and radio in Lam Dong Province.

In addition, MARD and ARBCP developed a 30-minute video on PFES implementation – including interviews and discussions with national, provincial, and local PFES implementers – that aired on national television and featured at inter-ministerial and other key national meetings.

It is estimated that more than one million residents in the Dong Nai river basin received information about PFES and biodiversity conservation through provincial and national media coverage. Transmissions were timed to ensure the widest possible viewing among farming communities.

Protection contracts

In April 2009, the Steering Committee and Lam Dong Province People’s Committee, determined that Da Nhim commune would be the first pilot site to enter into forest-protection contracts.

ARBCP carried out an initial forest valuation study for the Da Nhim watershed to provide baseline estimates of the tangible economic value of two key environmental services provided by intact forests, namely water regulation and soil conservation. This valuation study was instrumental in securing the confidence of policymakers with regard to setting payment levels to environmental service ‘providers’.

Two hydropower companies, two water-supply companies and various tourism businesses were identified as buyers of Forest Environmental Services (FES). As determined under the pilot policy, the hydropower companies were required to pay VND¹ 20 per kilowatt-hour into a specially established Lam Dong Forest Protection and Development Fund (FPDF). Water supply companies had to pay VND 40 per cubic metre, while tourism companies contributed 1% of their annual gross revenues.

¹ In January 2009 (start of project implementation) 100 Vietnamese Dong (VND) was equivalent to just over half of one United States cent (USD 0.005).



Early in 2009 hydropower, water supply and tourism businesses signed Memorandums of Understanding committing payments of USD 3.4 million to protect more than 220,000 hectares of forests and the ecosystem services they provide. By the end of the pilot implementation phase in December 2010, a total of approximately VND 108 billion (over USD 5.5 million) had been paid into the PFDF, which is overseen by a governing board composed of national and provincial authorities and monitored by independent auditors.

The FPDF and Lam Dong Province concluded forest protection contracts with five small farming communities, involving 218 contracted households, for undertaking specific forest protection activities covering 4,795 ha of forest in and around Da Nhim commune, starting with a trial period of three months. Extensive preliminary studies had been undertaken to assess how to set PFES payments to service providers based on forest quality and threat levels, ultimately employing the concept of a 'K coefficient'². However, pilot communities in Lam Dong Province elected to keep the payments consistent on a 'per hectare' basis, to assure equitable payments and thereby avoid possible conflicts. Payment levels were initially set at between VND 270,000 per hectare per year (/ha/yr) for Dai Ninh watershed and VND 290,000/ha/yr for Da Nhim watershed. These payments rose to VND 350,000/ha/yr and VND 400,000/ha/yr, respectively in 2010.

Payments

According to FPDF's report of January 2011, PFES payments were made to 22 Forest Management Boards and forestry businesses and to 9,870 households during the lifetime of the project. Contracted forest protection activities covered nearly 210,000 ha of forest. In 2009 the average household payment was VND 8.1 to 8.7 million (approximately USD 440 to 470), rising to VND 10.5 to 12.0 million (approximately USD 540 to 615) in 2010. These payments are around four times higher than forest protection payments received under former national government policies.

Monitoring

With support from ARBCP, Lam Dong Province established a watershed monitoring system in sub-catchments of the Da Nhim watershed. This action supports the scientific premise that effectively maintaining and managing forest cover will reduce soil erosion and enhance water regulation, and in turn reduce future production costs for hydropower and water supply companies.

Evaluation

² The national pilot policy on PFES provided guidance for applying a coefficient (the 'K coefficient') to determine the relative value of different forest areas based on an average of four factors: forest type, K_{LR} (protection category/special use/production); quality of forest, K_{CLR} (rich/moderate/poor/secondary); origin of forest, K_{NGR} (natural forest/planted forest); and human impact, K_{TD} (near road or residential areas, remote forest area). The K coefficient = $(K_{LR}+K_{CLR}+K_{NGR}+K_{TD})$.



A mid-term evaluation was conducted and submitted to the Prime Minister early in 2010. In general, it was noted that the pilot policy was being implemented successfully, with payments made by the payers and received by the communities providing the forest protection service.

The income of households involved in the implementation of the policy was shown to have increased significantly. PFES payments were becoming an important source of income for poor households, especially those of ethnic minorities. As a result, forests in the pilot areas were acknowledged to be better protected, with the incidence of violations and encroachment reduced significantly. According to the report, businesses benefiting from forest environmental services understood that PFES was an input investment that fosters sustainability of their own business operations.

Scaling up

On September 24, 2010, the successful implementation of the pilot PFES policy in Lam Dong Province during its two-year trial culminated in an announcement from the Prime Minister of Vietnam that a National PFES Decree had been approved. The PFES Decree transforms the way forests are viewed and managed in Vietnam, providing a measure of assurance that critical forests, and the ecosystems services they provide, will be protected into the future through the scaling up of PFES nationwide. This regionally and globally significant achievement serves as a model for other countries in South-east Asia struggling to find economically viable approaches to support biodiversity conservation.

Vietnam is now developing as a centre of excellence, from which other countries in the region could learn about implementing PES mechanisms. As one example of this, the Minister of Environment of Cambodia has requested support in the development of a similar PES policy in Cambodia.

Lessons learnt from implementation

Lessons learnt during implementation of the pilot PFES policy were manifold. They not only informed the shape and direction of the pilot project itself but will also assist the Government of Vietnam in effectively implementing the PFES Decree nationwide. Implementing such an innovative mechanism also involved many challenges. This section provides an outline of these, as well as lessons learned in overcoming the challenges.

- The identification and emergence of champions at all levels of the implementation process (national, provincial, district, and commune) was a key factor in the success of the pilot policy.
- The limited number of environmental services implemented under the pilot policy (water regulation, soil conservation, and landscape visual quality) reduced the risk of implementation failure and made the pilot policy easier to approve. The policy also concentrated the learning effort entirely on two pilot areas.



- While studies were undertaken to determine the K coefficient for PFES payments, Lam Dong Province elected to keep the PFES payments consistent across all areas on a per-hectare basis, regardless of forest quality and degree of threat. This occurred because the communities involved wanted an equal distribution of payment, and saw the K coefficient as a source of potential social discontent. Nevertheless, if these payments are to be effective in encouraging communities not only to keep forests intact but to improve their quality through sustainable land management practices, the K coefficient will have to be employed in due course.
- Despite the fact that extensive studies were done to value the ecosystem services (as well as to determine the K coefficient), the final payment structure also took into consideration the socioeconomic and socio-political context of the communities in question. Strictly adhering to the valuation studies, while scientifically robust, would not guarantee the uptake of the project and the backing of the community and payers.
- Lam Dong Province implemented a number of measures to raise public awareness of forest values and to impart information on the PFES pilot policy to related departments, authorities, companies, and communities. The most effective way to raise the awareness of the community and households was deemed to be through village and/or commune meetings and information from the Forest Management Boards (FMBs) during preparation of forest protection contracts. For the paying companies and institutions, the flow of data and information through formal channels involving national and provincial authorities and the company/institution concerned was the most effective way to raise awareness.
- The development of the management mechanism was greatly assisted by local household participation in its design, implementation, and evaluation. Local stakeholders suggested that payments through the FMBs would be most effective because they could track the payments and have a forum to resolve disputes.
- The proper and equitable distribution of payments is contingent on the equitable and precise allocation of forest parcels to households. However, lacking a private land tenure system and integrated land-use planning system, the process of forest demarcation, allocation, filing, and approval in Lam Dong Province required significant time and money, at times impeding the proper and timely disbursement of payments to households.
- There was an issue of whether payments under PFES should be considered as being made from the state budget or whether they replaced the water-resource tax that hydropower plants had to pay. These and many other issues, connected to the innovative concept of PES, took time to resolve among various stakeholders. (During the pilot implementation companies paid both the water resource tax and PFES monies.)



- Establishing automated gauging stations in a relatively remote provincial river basin was a great challenge. The choice of either relying on manual measurements of water flow, discharge, and sediment or fully automated systems (or something in between) needs to be made after taking full consideration of the institutional and technical capacities of all the actors that will be involved in monitoring.
- To increase the robustness of the existing monitoring approach, including the four gauging stations, a comprehensive monitoring system based on a watershed analysis, a system of sediment fences to measure sediment yields at the sub-catchment level, and depth surveys in the reservoir could be employed.
- To support monitoring of PFES mechanisms nationwide under the new PFES decree, it will be essential for the Ministry of Agriculture and Rural Development on one hand, and the Ministry of Natural Resources and the Environment on the other, to collaborate more effectively, to harmonise efforts, and to clarify roles.
- Setting up the PFES pilot policy and implementing it appropriately required the collaboration of many disparate stakeholders at national and provincial levels. As such, subordinate technical agencies did not always work closely together or in a timely fashion, resulting in slow implementation, especially in allocation of the budget to the province.
- Key to the success of the valuation studies was the involvement of the Da Nhim Hydropower Station technical staff. Their involvement in the design and implementation of the valuation studies assured that relevant research questions were being asked; as a result, they were better able to articulate the results to policy decision-makers.
- Although increased forest patrols through the forest protection contracts raised the likelihood of detection of illegal logging, the entire enforcement system should be evaluated to determine the likelihood of arrest, successful prosecution, judgments, and penalties paid in cases where illegal activity can be proved.
- To implement the recently issued national PFES Decree, it is important to promote the Lam Dong Province PFES pilot area as a centre for learning, sharing, and improving the PFES mechanism for the whole country.

Reference

Winrock International (2011). *Payment for Forest Environmental Services: A Case Study on Pilot Implementation in Lam Dong Province Vietnam from 2006-2010*. <http://www.winrock.org/fnrm/files/PaymentForForestEnvironmentalServicesARBCPCaseStudy.pdf> downloaded 18 Aug 2011.