



*Strengthening local capacity
in the economic analysis
of environmental issues*

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Payment for Forest Environmental Services: A case study from Vietnam

One of the most promising financing schemes to promote forest conservation is the payment for forest environmental services (PFES).

Vietnam is leading the initiative in the region where a two-year pilot implementation project has been implemented and is now developed into a nationwide PFES policy. A new EEPSEA study has looked at the economic and environmental impacts of the country's pilot PFES in Lam Dong province. The study is the work of Nguyen Thi Y Ly, from the University of Agriculture and Forestry in Ho Chi Minh City.

The study finds that the PFES project has increased household income amongst participants by approximately VND 3.9 million/household per year. It has also decreased the current deforestation and has improved the awareness of local farmers and authorities on the value of forests and the need for their protection. The study therefore indicates that the PFES is a good policy to protect Vietnam forests.



A summary of EEPSEA Research Report No. 2013-RR5: 'Evaluating the Pilot Implementation of Payment for Forest Environmental Services in Lam Dong, Vietnam' by Nguyen Thi Y Ly, Department of Environmental and Natural Resource Economics, Faculty of Economics, University of Agriculture and Forestry, Linh Trung Ward, Thu Duc District, Ho Chi Minh City, Vietnam.
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It also highlights a number of ways in which the development of the policy could be improved and the process that should be taken to roll the program out nationwide. As the first country in Southeast Asia to launch PFES as a nationwide policy, Vietnam's experiences will be useful to other countries that are going to apply PFES.

The forest conservation challenge in Vietnam

In Vietnam, forests are important in providing vital products and services that contribute to national economic development. In 2008, forest cover accounted for 38.27% of the total land area, equivalent to 12.9 million hectares. Besides contributing to the improvement of people's livelihoods in rural and highland areas, forests also play a vital role in environmental protection, watershed generation, land stabilization, clean water provision, and the prevention of sedimentation in reservoirs.

In recent years, forest conservation and development have become a priority of the Vietnamese government. Various command and control programs have been introduced to protect the country's

forests including Program 661, the government's Five Million Hectares Reforestation Program. However, such top-down management policy approaches have not been completely successful. Hence, the government has been investigating alternatives for some time and, in April 2008, Decision no. 380/QĐ-TTg was issued to implement PFES nationwide with a two-year trial program in Lam Dong and Son La provinces.

The Lam Dong PFES project

Lam Dong Province has a total natural area of 977,220 hectares, including 602,041 hectares of forest or 61% of the total natural area. The biodiversity of Lam Dong forest is very high and includes several kinds of plants and fauna that are threatened species and are listed in Vietnam's Red Data Book as well as in the International Union for Conservation of Nature (IUCN) Red List.

The principle behind the PFES is that those who provide environmental services should be compensated while those who receive the services should pay the service providers. The service providers taking part in the pilot project include the forest holders in

the headwater areas of the Dong Nai River watersheds within the administrative boundaries of Lam Dong Province. They had to sign a contract that set out their rights and responsibilities to conserve and protect the forest. The organizations paying for the forest services in the pilot project include two hydropower plants, two water supply companies, and nine companies conducting ecotourism businesses in the Lam Dong forest area.

Under the pilot project, payment was required for three major services: watershed regulation, sediment reduction, and the preservation of scenic beauty (tourism). The amount of money paid to the local people was decided based on research that assessed the value of these three elements. Consequently, from 2009 to 2010, the local people who were allocated forest land for conservation and protection were compensated by about VND 300,000 per hectare. A total of 3,594 households participated in the PES program in Lam Dong up to December 2010.

Assessing the effectiveness of the PFES project

Although it is clear that the pilot program has had some positive effects

on the economy and the environment, the EEPSEA research is the first systematic and quantitative study that has been done on the performance of the PFES pilot project. The study assessed the effects of this policy based on the pilot program implementation and its effects on the economy and the environment. It also looked at the factors that would make PFES successful in the wider Vietnamese context.

The economic impact of the pilot project was estimated in terms of household annual income contribution, and improved access to financial resources and employment. The project's environmental impact was assessed by looking at proxy variables such as the time people spent in conducting forest protection and conservation, the amount of illegal logging, the area of forest removed or burned, and farmers' and local authorities' awareness of the improvements in environmental services. Overall, the study judged the legal, political, financial, and capital feasibility of PFES as a policy.

The study focused on the implementation of the program in the four pilot areas: Lac Duong, Don Duong and Duc Trong districts,

and Da Lat City. The study relied on household surveys, in-depth interviews, and focus group discussions (FGDs) involving farmers and other stakeholders. In total, 749 households were interviewed. Of these, 366 were PFES pilot project participants and 383 were non-participants.

Individuals and companies paying for the forest services were also interviewed. The face-to-face interviews are done to evaluate service quality and the payment levels as well as to elicit comments and suggestions on how the program could be improved. In-depth interviews were also conducted with local authorities from provincial to commune levels, consultants, Vietnam Ministry of Agriculture and Rural Development (MARD), and PFES experts in Vietnam.

The economic and environmental impacts of the project

The study found that the PFES has helped to improve the lives of local residents through increased annual household income and that it raised the annual income of participants by VND 3.9 million. Although this contribution is not really significant

compared to annual average household income, it indicates a positive effect after only two pilot years. The study also notes that such an increase in income can contribute to the reduction of poverty and the eradication of hunger among local communities living near forests. More importantly, the study points out that the allocation of compensation among the participants involved in the pilot project had been relatively fair.

Environmentally, results show that the PFES pilot has had a positive impact on forest quality and quantity. This improvement was seen to have contributed to the stable and sustainable development of hydropower plants, water supply companies, and ecotourism enterprises, and to the reduction of climate changes that cause environmental disasters such as drought, flooding, and disease.

Farmers participating in the project are now better trained in forest protection and conservation and that this helps them protect the forest more efficiently. What's more, they now spend more time patrolling the forest and attending public meetings about forest protection and conservation. Consequently,

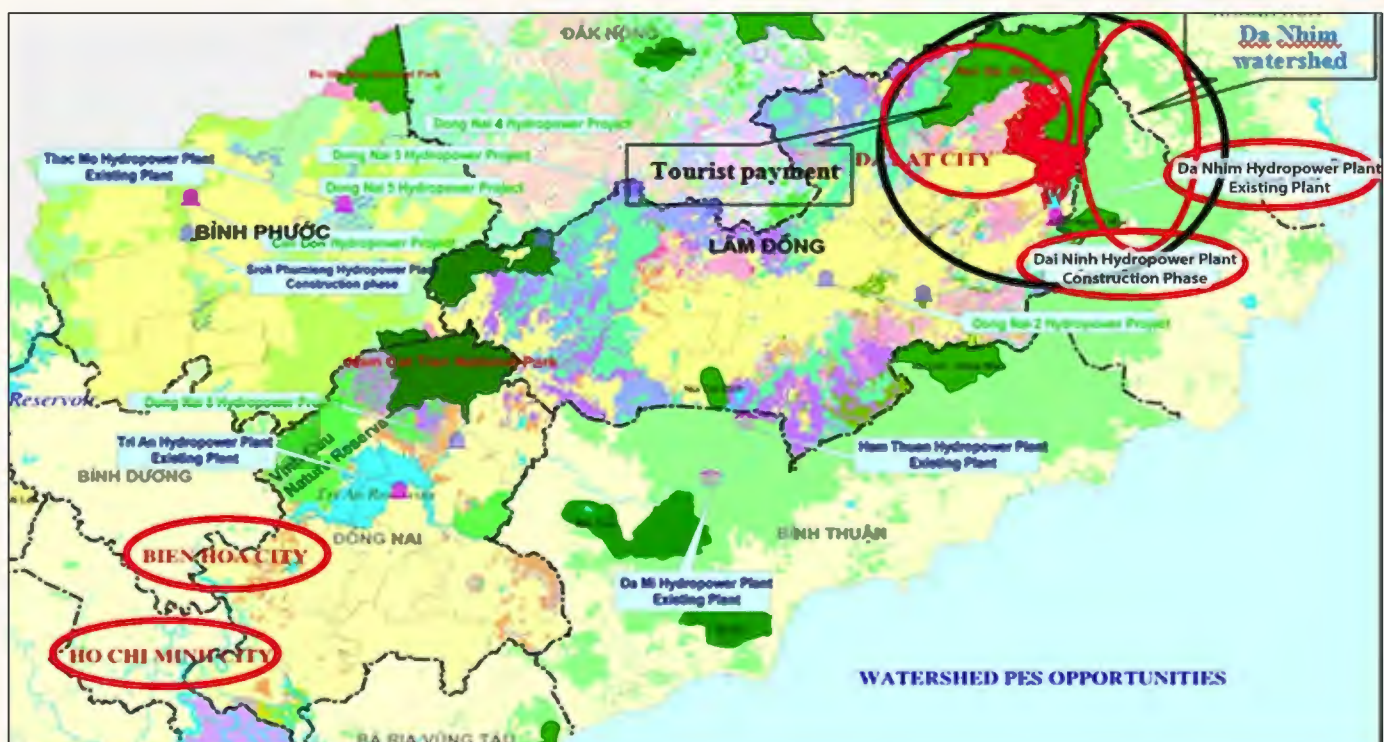


Figure 1. Pilot locations of PES in Lam Dong and other provinces

Table 1. Average payment to farmers from the pilot PFES

Items	Thousand VND/year/household
Mean annual payment	10,108
Standard error	201
Standard deviation	3,860
Minimum	2,400
Maximum	24,850
Confidence level (95.0%)	396

some illegal logging and forest land encroachment have been prevented.

Problems that need to be resolved

Generally, the study shows that the PFES pilot project received a high level of support at various levels. However, some problems remain in terms of the management of the scheme, particularly in relation to the management of funds, the monitoring of forest conservation works, and the improvement of the forest services.

The study therefore recommends that a better mechanism for entrusting, managing and using PFES funds should be developed. This improvement needs to be publicly presented and monitored in order to convince payers and users to comply with the system. A mechanism for checking, monitoring and evaluating the quality of the forest and other forest services should also be set up to improve the payment scheme. A mechanism to check and monitor the payment process and to properly sanction contract violations should also be established. What's more, the procedure for spending money collected from service users needs to be established and an independent auditing process should be conducted annually.

The study also highlights the fact that in the PFES pilot program, forest

environmental services have not been fully defined, participation in the scheme has not been completely voluntary, payment still relied on a top-down mechanism, and the sustainability of the system has not been assured. The study makes a number of detailed recommendations on what should be done.

For example, to improve the payment mechanism, the study recommends that auctions, or a tender-based approach, should be designed and implemented. Using this method, landholders would be asked to propose a bid to carry out resource conservation and to detail the costs of this work. The bids would be ranked according to the best value for money and the successful landholders would be offered the best value for resource protection. This approach is seen as a way of generating equity among farmers in charge of various forest types and forest quality. An assessment of the proposed approach shows that it is more cost-effective than the current fixed price scheme and that it can increase the total payment from the participants by 50%.

Driving the PFES approach forward

The study also highlights the fact that, although carbon sequestration is one of the main services provided by Lam Dong forest, the pilot PFES project does not take the value of

this vital service into account. The study presents that the total value that Lam Dong's forest could generate if these credits are sold in the global marketplace is USD 3.5 million a year. This amount of money would increase compensation for participants and improve management systems. The study therefore recommends that the value of carbon sequestration must be officially evaluated to generate more accurate payments for service providers.

Despite these reservations, the study concludes that PFES is a good policy appropriate to the context of Vietnam. It recommends that the PFES approach should therefore be developed in various locations across Vietnam, with solid research to estimate the accurate payments appropriate to the level of services provided in the different sites. The government, local authorities, and related organizations should also carry out public campaigns to increase awareness of the PFES policy to obtain wider support from the stakeholders.

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