



Dong Nai river basin. Photo: Nguyen Tuan Phu.

province situated in the mountainous area at the headwater zone of the Dong Nai River System, was selected to be one of the two sites to pilot the policy. A final assessment of pilot activities will be undertaken in 2010.

#### Background

Under Vietnamese legislation, natural forest and forest planted with government money belongs to the whole nation. Every member of society can benefit from the cultural, provisional and regulating services provided by forests such as retaining and providing water, especially in the dry season, aesthetic beauty, forest products, genetic materials, biodiversity, erosion control, and mitigation of disasters. Many people perceive that these multiple benefits are gifts of nature, and therefore require no investment for regeneration.

Payment for forest environmental services is a new policy in Vietnam, thus public awareness and appreciation is still limited. The role of the government in this phase of the process is therefore important in laying the foundation for achieving social consensus and enabling people to appreciate the role of forests in provision of environmental services, particularly water.

#### PES mechanisms

The forest environmental services selected in the pilot phase in Lam Dong include soil conservation, water regulation, protection of natural landscapes and biodiversity. In Lam Dong, headwater forests protect water sources and conserve soil for millions of people, eight hydropower plants and two water supply companies in Ho Chi Minh City and other downstream provinces. The Dong Nai river basin is expected to provide water for 20 percent of the country's electricity by 2020. However, the watershed is subject to substantial degradation from a variety of factors, including agricultural runoff; industrial and domestic waste; contamination from fish farms, and in particular a build-up of sedimentation from forest clearance. According to a modelling study conducted by the Asia Regional Biodiversity Conservation Programme (ARBCP) in 2008, without other interventions costs for dredging the reservoir and flushing and repairing the turbine cooler would have totalled US \$3.75 million.

## Payments for Forest Environmental Services in the Dong Nai River Basin, Vietnam

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Three quarters of the total land area of Vietnam is mountainous. The country has more than 4000 rivers, and forests in headwater areas play an important role in its socio-economic development. At present, one third of the population lives in mountainous areas; their standard of living is relatively low as a result of lack of income opportunities. To mobilise resources for better forest protection while increasing the income of mountain people, the Prime Minister of Vietnam issued Decision 380 on a policy for Payments for Forest Environmental Services (PFES) in April 2009. Lam Dong, a

A study undertaken by Nong Lam University surveyed the willingness to pay of urban residents in Ho Chi Minh City, and found that 93% would pay a small extra cost provided returns would be directed to poor upland communities. As a solution, the Prime Minister therefore approved the unit payment for forest environmental services of 20VND/KWh (US \$0.001) from hydropower plants and 40 VND/m<sup>3</sup> (US \$0.002) for water from water supply companies. The Chair of the Provincial People's Committee of Lam Dong stipulates that 1% of the revenue of some selected hotels in Da Lat city is for payment for forest environmental services. Businesses that have made payments for forest environmental services include Da Nhim Hydropower Company, Dai Ninh Hydropower Company, and seven hotels.

In the first nine months of 2009, the Lam Dong Forest Protection and Development Fund received 35 billion VND (approximately US \$1.8 million) of payments from these sectors. These payments are mostly paid by consumers in user fees, roughly \$0.0025 per unit of power and \$0.004 per cubic metre of water. Payments are then transferred into the account of the Forest Protection and the non-profit Development Fund of Lam Dong province. The Fund transfers payments to the providers of forest environmental services, which distinguishes it from tax mechanisms. For the pilot phase, the Forest Protection and Development Fund is allowed to use ten percent of collected money to cover their operational costs and costs of technical support activities. This figure can be revised based upon new insights and experiences gained during the pilot and after the final evaluation.

### Providers of environmental services

Those entitled to payment for forest environmental services include organisations, households, and individuals working in forestry that are contracted by the forest management boards for protecting forests, natural landscapes, and biodiversity. Approximately 3000 local farmer households, of which more than 50% are from minority communities, have received payments for forest environmental services to protect 220,000 hectares of forest that includes broad-leaved forest, pine forest, and mixed forest between broad-leaved trees and bamboo.

The main activities carried out by local farmer households include patrolling to protect forests from logging and fire control activities in the dry seasons, whilst they are also encouraged to plant profitable crops such as cacao and bamboo that do not require forest clearance. The Department of Environment and Natural Resource of Lam Dong province is measuring the quality of water to assess the impact of the scheme on the watershed, and monitoring equipment has been installed at various locations from upstream to the reservoir. Monitoring activities have only recently commenced.

At present, the Forest Protection and Development Fund of Lam Dong province are paying on average an amount of 250,000 VND (approximately US \$15) per hectare of forest per year to local farmer households, which is expected to more than triple household income in a relatively poor area of the country. Non-financial help is also provided to households in the form of agricultural extension trainings, conservation of indigenous cultures and health care services. The payment for forest environmental services is a top-up to other payments under forest-related policies of the

government. The social impact of the project will be assessed in the final evaluation.

The exact payment received is based on the quality of the forest under their care, of the environmental services provided by the forest, and biodiversity. Information about the categorisation of forests is obtained from the government's Forest Inventory and Planning Institute and other research institutions, who consider such factors as (a) percentage of forest cover, (b) origin of forest - whether a forest is a natural or a planted one, and (c) function of the forest - whether it is for watershed protection, conservation of biodiversity, or for production purposes.

### Concluding remarks

The Vietnamese have a saying that goes, "When drinking water, don't forget to protect its source". This is an important moral foundation behind the pilot policy for payments for forest environmental services. The policy is attracting attention because it provides the potential to stimulate local growth and build public-private partnerships to reduce the costs of water and power operation, whilst financing conservation. The initial success of the pilot resulted in the first national PES programme in South-East Asia with hopes of upscaling to a further 15 provinces. Both the governments of Cambodia and Laos have expressed an interest in replicating the mechanism.

### References

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