



## Payment for forest environmental services in Vietnam: An analysis of buyers' perspectives and willingness



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### ABSTRACT

To mobilize more resources for conservation, the government of Vietnam has implemented a Payment for Forest Environment Services (PFES) policy that creates a market by collecting payments from a rather limited set of ecosystem services (ES) buyers and setting up a forest protection and development fund. Herein ES buyers do not interact with ES providers, and their participation is primarily based on regulatory compliance. We therefore asked, 'what could be the real motivation for private-sector buyers of ES in Vietnam?' We found that, although private-sector voluntary engagement is currently lacking, it is interested and willing to pay for ES. However, in their perspective, the ES that are regulated by the PFES policy had very weak elements of private goods and are thus difficult to be rationed. On the governance side, although the government has created a PFES structure, it neither facilitates direct engagement between ES buyers and providers, nor does it create an enabling environment for the emergence of voluntary payment schemes. To sustain the PFES, we suggest that along with amending laws and regulatory procedures to make ES more marketable, the government should evolve from regulating to enabling PFES negotiations using existing structures.

### 1. Introduction

Payment for ecosystem services (PES) is not a new concept as it has been practiced in different forms since the 1880s (Hellen, 2011). Over time, the concept and development of PES have become relatively diverse, and they are increasingly recognized as an effective mechanism that addresses market failure by altering the economic incentives of land managers or owners (Landell-Mills & Porras, 2002; Hellen, 2011; Farley & Costanza, 2010). At a higher policy level, the debate around PES revolves around whether PES is or should be a neoliberal environmental policy. According to neoliberal economics, market-based management will be more efficient in allocating resources for conservation than the conventional 'command-and-control' approach in developing countries (Wunder, 2005). On this premise, ecosystem services (ES) are marketable and the PES should be like any other market transaction. On the other hand, a number of scholars argue that since ES often lack the features of tradable goods such as excludability and rivalry, the PES market would not work (Landell-Mills & Porras, 2002). Critics also point to the fact that each single ecosystem service narrows down ecosystem complexity and does not embrace ecological, social, or spiritual values as separate from an income dimension (Kolinjivadi et al., 2014). Accordingly, there is a need of a special arrangement other

than market mechanism for dealing with the environmental function and long-term elements of resource management, that is: government intervention or direct government administration (Nagata, 2003). Along this line, it was suggested that PES, at least in developing countries, should be considered explicitly as part of a portfolio of rural development programmes and projects, instead of an economic tool only used to guarantee environmental protection in the most efficient way (Muradian et al., 2010). In reality, neither the market nor the government is perfect and ideal. The right balance between these two, that is theoretically the peak condition for PES to develop, is context-dependent.

After a rapid forest loss in the past, Vietnam has shifted its focus from exploitation to conservation and development of forest since early 1990s. Since 2008, the government of Vietnam has piloted market-oriented approaches to forest management, and since 2010 a national policy on payment for forest ecosystem services has been implemented and considered to be a potentially very successful regime for sustainable forest management (Pham et al., 2013). However, there is criticism that this state-run PES scheme is not based on voluntary negotiations (Hoang et al., 2008; Hoang & Do, 2011; Kolinjivadi & Sunderland, 2012), but rather, ES buyers are 'forced' to pay without understanding how much ES are needed for their business operation, and how to

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**Table 1**  
Role of Government in PES and PES like programmes.

| Role      | Tasks  | Examples  |
|-----------|--|---|
| Buyer     | Direct buyer of ecosystem services in the interest of the public   | China's National Forest Conservation Program: partial funding responsibilities attached to local government; China's Green and Grain Program (Zhiyong, 2003) 5 million ha reforestation programme (commonly known as 661 Program) <sup>1</sup> in Vietnam, where Government applied fixed rate payment to forest owners for planting and protecting forests |
| Regulator | Mobilizing private demand for ecosystem services through environmental compliance rules or setting up cap-and-trade systems.                                       | PFES of Vietnam. By Decree 99, the Government requires hydropower producers, water supply companies and eco-tourism enterprises to make fixed rate payments to forest land owners where the ES are "assumed" to be generated  |
| Enabler   | Assisting private actors to buy and sell ecosystem services and providing new legal and policy frameworks to expressly encourage and facilitate market development | Biodiversity Trust Fund (privately operated) in Costa Rica <sup>2</sup> , which can directly collect funding from conservation activities. (Porrás et al., 2013)  |

<sup>1</sup> The 661 Program was initiated before the term 'payments for ecosystem services' became popular in international debates, yet it was based on the same principle of PFES in Vietnam today.

<sup>2</sup> PES policy in Costa Rica (introduced by the Forestry Law 7575 in 1996): although the government is still the biggest ES purchaser (others hail from the private sector, international banks, and bilateral agencies), it creates flexible platforms for voluntary PES where the private sector can actively engage, e.g. through certification programmes.

measure ES delivery. Consequently, there are concerns that the government cannot attract continuous private-sector funding for PFES, making the program's future uncertain. This paper offers a critical analysis of the motivation of ES buyers in Vietnam. It highlights the factors that undermine their willingness to pay, and the roles the government should be playing in the future, to further engage the private sector in the PES program.

### 1.1. The market rationale of payment for forest ecosystem services

Forests contribute multiple of crucial ecosystem services to human society (De Groot et al., 2002; Gamfeldt et al., 2013; Guerra-De la Cruz & Galicia, 2017). From economists' point of view, forest degradation and forest loss have been threatening forests worldwide because incentives for forest conservation have been either weak or lacking. Within the free market mechanism, forest conservation is economically less attractive than forest exploitation (Pearce, 2001), and this will potentially misinform decision making relating to ecosystems (MA, 2005). Therefore, to encourage positive human behaviour towards forests, the value of non-marketed benefits provided by forests (i.e. forest ecosystem services) must be identified and accounted for in forest management policy. These economic values could then be "traded" in a market mechanism, the ecosystem services market and PES. Economic valuation of ecosystem services hence has been placed at the core of PES. However, the complicated nature of ecosystem functions and the fact that benefits from ecosystems are interpreted differently at multiple scales and by various groups of stakeholders have challenged researchers in obtaining credible, operational valuations of ecosystem services (Costanza 1997; De Groot et al., 2010; 2012; Ninan & Inoue, 2013). Consequently, decision makers, especially those in developing countries hardly mainstream forest ecosystem service values into forest governance and environmental management. Ecosystem services valuations have not contributed on ecosystem management, including PES, as significant as expected (Liu et al., 2010).

Worse for PES policy development and operation is that even if an ecosystem service is clearly defined and valued, it may still not be marketable. Market failures are often discussed in the debates about the public good characteristics of ecosystem services that are non-rival (the consumption/use of the good or service by one person does not reduce the availability or utility of the good or service to another person) and non-excludable (any good or service that someone cannot be prevented from accessing because of non-payment) (Dunn, 2011). In contrast, private goods are both rival and excludable. Ecosystem services are, in most cases, neither of the two but somewhere between (Bouma & Beukering, 2015; Fisher et al., 2009). A number of scholars labelled ES, particularly regional ones attributable to land-use behaviour such as

watershed services, as club goods or toll goods that are non-rival but excludable (Costanza & Liu, 2014; Engel et al., 2008; Farley & Costanza, 2010; Kolinjivadi et al., 2014; Villamor et al., 2007). For example, landscape beauty service (within National Park boundaries) is a club-good because it is non-rival (i.e., there is no limit of how many people can enjoy it) but highly excludable, because principally one can only benefit from the service until he/she pays the park entrance fee. Other authors including Bouma & Beukering (2015) classified ES as common-pool goods that are rival but non-excludable. A typical example of common-pool good is a public pool where every people can come fishing. It is a rival resource (because the number of fish in the pool is limited) but non-excludable (because no rules and laws exclude anyone from fishing in the pool). This is how the 'tragedy of the commons' started (Hardin, 1968). Scholars often use the tragedy of the commons to refer to 'limited but open-access' resources or goods that everyone can exploit for free, and thus would quickly deplete due to overuse. However, it should be acknowledged that not all ecosystem services have the same excludability and rivalry characteristics, and that these economic characteristics of goods are context-dependent (Frischmann, 2012; Vries, 2013). It has been agreed that services dominated by private-good characteristics are amenable to voluntary payments, while services with public-good characteristics are not (Costanza & Liu, 2014; Farley & Costanza, 2010; Kemkes et al., 2010).

### 1.2. The government's multiple roles in PES

In allocating benefits from ecosystem services, a market-based PES works better than a government command-and-control approach, provided that the right background conditions, such as appropriate institutional and legal frameworks and sufficiently low transactions costs are in place (Scherr et al., 2004). In developing countries, where institutional capacity is generally weak, the government stake in PES is not un-avoidable, but rather desirable. Scherr & Bennett (2011) discussed government roles in PES and assumed that they are evolving in three distinct ways: buyer, regulator, and enabler. Table 1 summarizes the different roles and tasks of governments in PES schemes with some examples around the world.

### 1.3. Government-led PES in Vietnam

In Vietnam, the PES concept has been widely implemented in the forestry sector. The history of providing incentives to rural households for forest protection and plantations in Vietnam traces back to the early 1990s with Program 327 (1992–1998) and its successor Program 661 (1998–2010). It is commonly known as the 5-million-hectare reforestation programme and now a forest protection and development plan

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