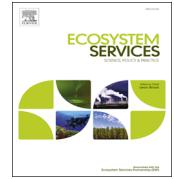




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# Payments for ecosystem services in Vietnam: Market-based incentives or state control of resources?



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## ABSTRACT

Payments for ecosystem services often are viewed as an innovative approach toward improving natural resource management, while also providing opportunities for enhancing incomes and livelihoods. Yet not all PES programs are designed and implemented in ways that reflect voluntary transactions between buyers and providers of well-defined, measurable ecosystem services. When third-party interests, such as donors or governments, design PES programs to achieve goals that lie outside the conceptual scope of payments for ecosystem services, the improvements in resource management and enhancements in livelihoods can fall short of expectations. We examine this potential dissonance in PES program implementation, taking the case of PES in the forestry sector in Vietnam. We question whether PES in Vietnam has the potential to enhance forest protection and watershed management. We highlight the importance of institutions and governance (i.e., the policies, rules, and regulations) in determining program significance and we illustrate how PES programs are implemented as part of the government's subsidy scheme. We conclude that in the absence of a competitive market structure and appropriate regulations, governments can reshape PES programs to function primarily as tools for strengthening state control over natural resources.

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## 1. Introduction

Paying for ecosystem services (PES) has been described as an innovative approach for improving natural resource management (Ferraro and Kiss, 2002; Pagiola, 2008). Presented originally in the forest conservation literature, PES programs now include efforts to enhance watershed protection, motivate carbon sequestration, and beautify landscapes (Landell-Mills and Poras, 2002). Early promoters envisioned that PES programs would transform conservation practices from costly requirements to potential sources of revenue (Kinzig et al., 2011). Thus, individuals and communities would be financially motivated to engage in mutually beneficial agreements regarding resource management. PES programs have also been

linked to efforts to alleviate global poverty (Bulte et al., 2008; Grieg-Gran et al., 2005; Wunder, 2008).

PES programs have been seen by some as an approach for improving environmental amenities without relying on regulatory agencies to implement restrictive policies. Voluntary agreements between individuals generating externalities and those impacted by them might be more effective in reducing harmful impacts in a shorter time than is required to craft and adopt environmental legislation. In a sense, PES programs address the classic problem of negative externalities by creating a market setting in which the externalities are internalized. Ideally, the amount of compensation paid for modifying or ending a harmful activity is determined through negotiations in which the 'market participants' evaluate their incremental benefits and opportunity costs. As defined by Wunder (2005 p. 50) PES program design should incorporate the following principles: "(1) a voluntary transaction in which (2) a well-defined environmental service (or a land use likely to secure that service) (3) is 'bought' by a (minimum of one) buyer (4) from a (minimum of one) provider (5) if and only if the provider continuously secures the provision of the service (conditionality)".

While the approach is attractive, in reality it is hard to find PES programs that fulfill all the above-defined principles (To et al., 2012; Vatn, 2010). PES programs do not automatically bring together potential buyers and sellers of environmental services

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and enable them to interact in a self-regulating market. On the contrary, PES programs often are implemented using donor funds or as part of government-subsidized compensation programs focused primarily on how to pay people for generating external benefits (Munoz-Pina et al., 2008; Pagiola, 2008; Wunder and Alban, 2008). In practice, most buyers of ecosystem services in the PES programs implemented worldwide are intermediate parties, such as governments and non-governmental organizations, rather than direct beneficiaries (Pham et al., 2010; Shelley, 2011). To date, the public sector has been the largest purchaser of ecosystem services, and Milder et al. (2010) expect this trend to continue. Recently, Muradian and Rival (2012) have proposed shifting the emphasis from trying to create purely market-oriented mechanisms to designing incentives for environmental protection.

We discuss the dissonance in PES program design (Wunder, 2005) and implementation. It looks at how PES is presented as an innovative, alternative policy measure to improve natural resource management and enhance livelihoods vis-à-vis persistent problems and challenges in PES program implementation. Current debates in natural resource management tend to view this dissonance mainly under the notion of 'implementation barriers', or as a failure to create the conditions required for effective policy implementation (Hebinck and Verschoor, 2001; Mollinga and Bolding, 2004). We argue that such dissonance can also occur when policy actors (international, national, sub national and local) perceive and interpret the problem differently. While we focus specifically on forest protection and watershed management, we echo broader policy discussions about dissonance in natural resource management in general. Mosse (2004, p. 640) for instance, analyzes this dissonance by examining development aid policy and questioning whether good policy is implementable in the first place: "What if the things that make for good policy are quite different from those that make it implementable?" We argue that understanding this dissonance is pertinent to increase the actual significance of PES program implementation and better understand the potential to enhance natural resource management, as opposed to treating it as a panacea.

We show that while PES program significance is determined in part by the institutions in which the program operates, the range of possibilities to select appropriate institutional arrangements might be limited by the existing governance structure (i.e. policies, rules, and regulations) in a specific country. Taking Vietnam as our case study, we highlight the important role played by the state in shaping PES program implementation. We discuss how the idea of market environmentalism may be deployed strategically as a means to increase state power in natural resource management. We illustrate how PES program implementation is predefined by the way the state views the program as a means to collect additional revenue for forest protection.

To these ends, we describe the Government of Vietnam's (GoV) various efforts in forest protection, and how the GoV currently incorporates PES as part of its forest protection and watershed management policies. We consider also the possibility that the GoV might be using PES programs to expand and strengthen state control over natural resources and the people who use them. Indeed, by prescribing specific activities within certain spatial boundaries, these programs may contribute to state territorialization (Peluso and Lund, 2011; Vandergeest and Peluso, 1995). When this occurs, a PES program functions primarily as a government's subsidy scheme (McAfee and Shapiro, 2010).

## 2. Nature, market environmentalism, and the state

The notion of paying for ecosystem services was presented originally in the environmental economics literature, where many

authors consider the environment to be an integral component of economic decisions (Coase, 1960; Perrings et al., 1995). Early authors describe the systematic undervaluation of ecosystem services in economic decision making, which arises in part because the services provided by natural capital are not adequately quantified in terms that are comparable with the economic services from manufactured capital (Costanza et al., 1997). In line with this argument, the concept of ecosystem services is perceived by many conservationists merely as a tool for communicating the value of ecosystem functions, using a language that reflects the dominant political economic perspectives (Gomez-Baggethun et al., 2010).

Over time, and with experience, the notion of paying for ecosystem services has gained favor as an analytical framework that allows ecologists to develop stronger theories, and to document empirically how the stock of nature delivers flows of services (Carpenter et al., 2006). From Norgaard (2010, p. 1219): "Economic services became a paradigm for thinking about development and the environment and for designing environmental management programs. Over a period of about 15 years, an eye opening metaphor intended to awaken society to think more deeply about the importance of nature and its destruction through excessive energy and material consumption transformed into a dominant model for environmental policy and management in developing countries and for the globe as a whole".

The transformation from a communication tool to analytical framework has placed PES programs more clearly in the context of market environmentalism, which promotes the pricing of nature's services, the assignment of property rights, and the expansion of commodity markets into the realm of nature's services (Berthoud, 1992). This transformation, together with an increasing flow of funds from international donors, such as the Global Environmental Fund of the World Bank, promoting implementation of PES programs in developing countries, has given the concept a life of its own (Pagiola and Platais, 2007). In recent years, PES programs have been featured in national decrees and adopted as a preferred environmental strategy by international organizations. National-level PES programs have been implemented in several countries of Latin America (Munoz-Pina et al., 2008; Pagiola, 2008; Wunder et al., 2008). Several countries in Southeast Asia have incorporated PES as part of their national legislation, and others are considering to mainstream PES as part of their natural resource management policies (Emerton and Lopaying, 2011; Wunder et al., 2005). PES programs have been successful in highlighting the important roles of ecosystem services in economic decision making. They have also promoted privatization in natural resource management.

The spread of market environmentalism as alternative idea for nature conservation correlates with a changing role of the state in natural resource management. The declining role of the state in governance issues in general and in natural resource management in particular has been widely discussed in political science (Migdal, 1988; 2001; Schulte-Nordholt, 2003; Scott, 1987), geography (Harvey, 1989; Cox, 1997; Escobar, 2001) and legal anthropology literature (Benda-Beckmann, 1981; Benda-Beckmann, von Strijbosch, 1986). Authors have described how the state has been hollowed out (Jessop, 2004), and how particularizing and universalizing tendencies beyond the state now interact in a process of glocalization (Swyngedouw, 1997). Nonetheless, current research has shown how nation-states can reposition and reorient their role in natural resource management, amidst pressure from international, regional and local levels, through different regulatory measures and public-private partnerships (Bakker, 2010). Using neo-liberalism and market environmentalism perspectives as her entry points, Bakker shows that the state can actually sustain its power through reregulation, and that increased participation of non-state actors does not necessarily result in reduced

state power. Other authors (Berman, 2009; Castree, 2003; 2008; Heynen et al., 2007) have reached similar conclusions on how states can sustain their power through reregulation and reorientation of their roles.

We show how the Vietnamese state can sustain its role and importance in natural resource management by relying on private and international contributions to co-finance forest and watershed protection policies through PES programs. Taking Bakker's analysis forward, we illustrate how the Vietnamese government has been able to use the very notion of neo-liberalism as an entry point to sustain and increase state power in natural resource management. We argue that the decision to adopt PES programs as part of national natural resource management policies is derived from the way the government views the idea of market environmentalism in PES as a means to justify forest protection goals and measures. Somewhat ironically, the way the government has co-opted the idea of market environmentalism does not result in privatization or the reduction of state power, but rather in additional financial resources to implement the government's policies in forest protection.

We argue that PES program implementation in Vietnam does not correspond with the basic principles of PES program design (Wunder, 2005) mainly because the state defines payment mechanisms and valuation, and the state compels participation from both buyers and providers of ecosystems services. In addition, the way the state shaped PES programs as part of its governance structure in natural resource management highlights how the programs can be potentially used as a tool for state territorialization (Vandergest, 1996). The positioning of PES programs as a tool to pursue state territorialization is conditioned by two factors: (1) the relative absence of market structure and PES mechanisms in the region; and (2) the relative absence of community-based organizations and civil society groups in the context of (forest) protection and watershed management.

### 3. Forest protection, watershed management, and PES in Vietnam

The Government of Vietnam first relied on state enterprises to manage forests and protect watersheds, prior to engaging in the devolution of forest tenure. The GoV progressively integrated compensation programs and finally introduced PES mechanisms. We examine PES implementation in two pilot projects in Vietnam: Lam Dong Province in the Central Highlands and Son La Province in the north. We interviewed key informants and conducted semi-structured interviews with stakeholders involved in pilot project implementation, including staff members from the Forest Protection Development Fund (FPDF), the provincial/district/commune People's Committee, the Ministry of Agriculture and Rural Development (MARD), and their representatives at provincial and district level, as well as hydropower dam operators and international agencies. While we did not directly interview farmers in these two pilot areas, we gained insight regarding how farmers perceive financial incentives in forest conservation through research on forest lands allocation in Da Bac District, Hoa Binh Province, where we interviewed 21 farming households and conducted 14 focus group discussions. In that effort, we examined specifically the impacts of Programs 327 and 661.

#### 3.1. Vietnam's forest protection policies

Since the 1960s, Vietnam has tried several methods to protect and manage its forests through the allocation of forest lands (mainly those categorized as special use and protection forests) to state organizations, cooperatives, and individual households. In 1968, the state allocated forest lands to state enterprises in

charge of forest management. In 1988, in line with Resolution 10 of the Politburo (dated on 5 April 1988), the state allocated forest lands to cooperatives and other organizations as a response to the failure of state enterprises to protect forest lands.

In 1991, Vietnam began allocating forest lands to households and individuals through the provision of land use rights, made possible by the Law on the Protection and Development of Forests. In 1992, the state launched a national forest protection program (Decision 327/CP), with the goal of increasing the productivity of barren land and hills to achieve 'fixed' cultivation. In response to the program's failure to achieve the expected targets (see also Vien, 2001 on the achievements and shortcomings of this program), the state set forth another program (Decision 661/QD-TTg) in 1998, aimed at afforestation of five million hectares.

This program, known also as the 5 Million Hectare Reforestation Program (5MHRP), endeavors to increase forest cover to 43% by 2010 (Wunder et al., 2005). Funded by the national government, this program targets forest protection and poverty reduction. It offers cash incentives to farmers who replant trees and protect existing forests through forest contracts with individual households. In practice, however, the program has been focused mainly on forest protection rather than improving the living standards of farmers and other residents (Clement and Amezaga, 2009). Focusing mainly on national policy demand, local community needs were often ignored. This has discouraged local communities from participating in forest protection (Forest Sector Monitoring Information System (FOMIS) (2010)).

In general, forest protection policies in Vietnam have also been hampered by the persistent lack of financial mechanisms to ensure forest protection by local actors. While government policies assign the responsibility to local governments (i.e. Commune People's Committees) for forest management and protection, these policies do not provide any financial mechanism or measure for establishing income generating organizations for forest protection (Forest Sector Monitoring Information System (FOMIS) (2010)). In turn, as local governments lack the mechanisms to generate funds, they also lack finance to implement forest protection policies. As a result, many forests have been destroyed (Nguyen, 2009). Similarly, (state) forest companies lack the funds for forest protection and they have difficulty raising capital on the basis of forest values (Sikor, 1998). The 5MHRP in particular, while promoting subsidies, has not increased the speed of transition to market-oriented mechanisms.

#### 3.2. Payments for Forest Ecosystem Services (PFES) as a means to collect additional revenue for forest protection

In 2007 the Asia Regional Biodiversity Conservation Program (ARBCP) funded by USAID assisted the Ministry of Agriculture and Rural Development (MARD) to develop a pilot policy on Payment for Forest Environmental Services (PFES) in Vietnam (the Prime Minister Decision on The Pilot Policy for Payment for Forest Environmental Services, 10 April 2008). The policy identified publicly owned electric and water utilities (i.e. Electricity of Vietnam and the Sai Gon Water Company) as the 'service buyers', directing their role in water regulation and soil conservation services. It identified local farmers, local farming households and local farming communities who had already been allocated forest lands as the 'service providers'. Pilot testing activities were conducted in two provinces: Lam Dong and Son La.

According to the Prime Minister Decision, the operators of hydropower facilities, water supply companies and tourism businesses must contribute a small portion of their revenue into a centrally managed fund (Forest Protection Development Fund or FPDF) that is allocated to districts in their respective watersheds. The norm of payment for forest environmental services, applied for



hydropower production establishment is 20 VND/kwh of commercial electricity. Clean water production businesses must contribute 40 VND/m<sup>3</sup> of clean water, while tourism companies contribute 1% of their annual gross revenues. The fund is being used to compensate households for providing forest environmental services.

Both in Lam Dong and Son La Provinces, PFES was applied through forest contracts involving the Province People's Committee and, respectively, the state forest enterprise and local communities. In the absence of a state forest enterprise, the provincial authorities arrange forest contracts with farming communities and individual households. In general, the forest contracts do not include land use changes in terms of promoting certain types of land use for forest protection, as opposed to agricultural cultivation (as in the case of Programs 327 and 661). Rather, it ensures that local community will deliver the following services: maintaining and improving the forest and soil through regular patrolling; installing signs provided by the province for demarcating the boundaries of the contracted areas; and applying preventive measures to avoid forest fires in the dry season (Winrock International, 2011).

While PFES programs in Lam Dong can be considered successful, in terms of achieving higher collected payments, PFES implementation in Son La was hampered by delayed payments and coordination problems. According to our key informant from the FPDF in Lam Dong: "PFES implementation in Lam Dong is faster and more effective because 90% of forest lands are still managed by the State Forest Enterprise. As in the case of Son La, most forest lands have been allocated to individual household. Hence, more efforts were required with regard to payment arrangements" (interview with FPDF staff, March 2013). This highlights the importance of transaction costs in PES implementation.

For Lam Dong specifically, the government has received ± significantly higher revenue to finance its forest protection measures through PFES implementation. From Chiramba et al. (2011): "In 2009 the average household payment was VND 8.1 to 8.7 million (approximately US\$ 440 to 470), rising to VND 10.5 to 12 million (approximately US\$ 540 to 615) in 2010. These payments are around four times higher than forest protection payments received under former national government policies". Following the Prime Ministerial Decision on pilot PFES (2008), hydropower companies, water supply and tourism entities signed Memorandums of Understanding with the government in 2009, to commit US\$ 3.4 million to protect more than 220,000 ha of forests and ecosystem services they provide. By the end of the pilot implementation phase in 2010, the FPDF had received more than US\$ 5.5 million. Payments were made to 22 Forest Management Boards, State Forest Enterprises, and to 9870 households (6858 of which are ethnic minorities) (Winrock International, 2011).

Formally, PFES programs in Son La cover 379,272 ha of forest land, 45,000 farm households, and 6000 household groups and communities. PFES funds were collected from two hydropower plants and one water supply company, with an average payment of VND 350,000/ha/year. In practice, however, the government has not been able to identify all the forest owners and has not completed the review of forest area and forest quality that have been allocated to households in the pilot site, so that payment has not been made in a timely manner to farming households (Government of Vietnam (2010)).

Despite the pilot program's success in generating greater government revenue for forest protection, PFES program implementation has remained challenging (interview with Director of FPDF, March 2013). This is due to the following issues: (1) Equal payment for all does not encourage people to improve forest quality, (2) There is unequal revenue generation for forest conservation across basins, and (3) There is no monitoring of actual impacts. To date, the GoV has not applied the

K coefficient<sup>1</sup>, which technically would provide a more accurate link between the amount of payment and the type of forest quality protected. Moreover, PFES programs rely mainly on the environmental fees collected from hydropower operators. In areas where there are no hydropower dams, it is difficult to collect sufficient funds from other sources (i.e., water supply companies and tourism). In addition, government staff members lack the ability to analyze data with regard to actual impacts. In Lam Dong, the authorities have two water quality monitoring stations, but they lack the professional staff and expertise needed to analyze the data.

Moreover, whether or not PES can provide a substantial source of income for farming households remains questionable. For example, To et al. (2012) show how PES implementation in Lam Dong and Son La does not guarantee long-term benefits for farming households. Small land holdings (average of two hectares), ambiguous land tenure (Sikor and Thanh, 2007), short duration of contracts (1 year), and elite captures (Peter et al. 2009) are among the factors that cause unequal distribution of benefits. From To et al. (2012, p. 245): "only about 10% of village households gained access to PES benefits, whereas the remaining 90% who held unrecognized customary tenure without a contract were excluded from benefits".

Nevertheless, in 2010, the GoV endorsed PFES implementation as a national program with the promulgation of a Government Decree on the Policy on Payment for Forest Environment Services (24 September 2010). Prior to the introduction of PFES programs and through earlier forest protection programs (i.e. Decision 327, Decision 661), the government provided support of 200,000 VND/ha/year to provincial authorities for their forest conservation programs. The pilot in Lam Dong shows however, that forest protection programs can be financed through private sector and public contributions (i.e. electricity consumers), with higher rates up to 450,000/ha/year (interview with Director of FPDF in Lam Dong, March 2013). The increase in payment shows how ± PFES program implementation can generate additional sources of revenue for forest and watershed protection.

The government's interest in using PES as a means to collect additional revenue for forest protection is evident in the following sentence in the Vietnam Forest Sector Progress Report ± (Forest Sector Monitoring Information System (FOMIS) (2010), ± p. 75): "With the implementation of the Decree No. 99/2010/ND-CP on the policy for payment for forest environmental services, gross output value of services will increase from VND 662 billion to 1400 billion during 2011–2015". Moreover, from the same report (Forest Sector Monitoring Information System (FOMIS) (2010), p. 73): "If half of the planned capacity of hydroelectric generation stations are operated in accordance with nation-wide electric development plan up to 2015 (with vision to 2025), for which the Prime Minister has approved, a total capacity of 40 billion Kwh/year from hydroelectric will be produced, then the forestry sector can collect 800 billion VND per year (equivalent to yearly average investment from funds under program 661), which can be calculated to forestry's sector gross output value of services".

Following the promulgation of the Government Decree on PFES, programs should be implemented in 26 provinces in Vietnam, including Hoa Binh, Dong Nai, Binh Thuan, Ninh Thuan, and Ho Chi Minh City. In theory, the FPDF serves as a key financial component of Vietnam's first decentralized budget-transfer mechanism. Officially, the fund is overseen by an "independent" governing body comprised of representatives from District

<sup>1</sup> Article 13 in Decision 380/TTg provides guidance for applying the K coefficient to different forest areas to determine their relative value, based on an average of four factors: forest type (special use, protection, production); quality of forest (rich, moderate, poor); origin of forest (natural, planted); and human impacts (near to roads, remote forest area).

± Agriculture and Rural Development, Department of Finance, District Natural Resources and Environment, Department of Planning and Investment, Department of Taxation, Department of Industry and Trade, and the State Treasury, who together appoint the fund's managers. In practice, however, it is not always clear who has responsibility to manage the fund at which administrative level (national, provincial, district, or commune).

In general, unclear funding arrangements (i.e. unclear contractual arrangements with households, group of households, or communities, and the unclear channeling of funds to forest management boards, state forest enterprise) have become a major issue that has delayed PFES implementation in the other 26 provinces in Vietnam, following the promulgation of the PFES decree in 2010. For example, in Hoa Binh, Dong Hai Province and Ho Chi Minh City, government authorities are currently discussing the formulation of technical guidelines regarding the selection of participating communes and villages, the payment formula, and the government agencies involved in the program.

Slow PFES program implementation on the ground does not mean that the government is lacking funds for program implementation. According to the Director of FPDF of Lam Dong, the province has collected about US\$ 6.5 million per year as part of its PFES programs. Similarly, Hoa Binh Province received US\$ 334,000 from the Hoa Binh hydropower company in 2012, but the People's Committee is still in the process of formulating the distribution process for this fund. In general, the government has managed to collect about US\$ 50 million for PFES program implementation nationally (personal communication with Director FPDF, March 2013).

To summarize, the implementation of PES programs in Vietnam has little to do with the idea of privatization. Rather, PES is a mechanism to encourage the incorporation of financial incentives as part of the government's national strategy regarding natural resource management. The role of PES programs in sustainable natural resource management will depend on whether or not the GoV can secure sufficient funds (mainly from hydropower companies) to support long-term PES program implementation, and whether the GoV can ensure that the payments generate positive impacts in terms of environmental protection and improving livelihoods.

#### 4. The shaping of PES as a potential tool for internal territorialization

The way the GoV shapes PES mechanisms as a means to collect additional revenue raises the question of the possible use of PES programs as a tool for internal territorialization. In general, increased government revenue does not necessarily have to result in increased direct state control of forest resources or in state regulation of local communities' roles in forest protection. Nevertheless, taking into account the state's centralized governance structure and decision-making framework in Vietnam, it is likely that the state would use additional (financial) resources to gain greater control in forest and watershed management.

Below, we discuss the shaping of PES as a potential tool for internal territorialization, within the context of forest protection in Vietnam, referring mainly to the following factors: (1) the ambiguous legal status of the local community and the positioning of forest lands as state property; (2) the positioning of PES funds as part of the government revenue system; and (3) the way PES program implementation relies on government structure and apparatuses from the national level to the local level.

##### 4.1. Ambiguous legal status of local community and the positioning of forest lands as state property

The ambiguous legal status of local communities, together with the positioning of forest lands as state property, can serve as a starting point for controlling land uses and the livelihood activities of local communities (Peluso and Lund, 2011).

In the current Vietnamese legal system, the legal status of community has not been clearly confirmed. The 2005 Civil Law has not recognized a community as a legal entity. Thus, despite the current acknowledgment of community as forest owners, as stipulated in the Law for Forest Protection and Development (1991, 2004), their rights are limited to the right to use the allocated forest lands. Unlike other forest owners (i.e. state forest enterprise), local communities lack the right to convert, transfer, rent, or mortgage forest lands. Moreover, communities are allocated forest lands but are not permitted to borrow from the state budget, as are other forest owners. In Lam Dong province, most forest owners may only sign short-term contracts, due to their unclear land tenure rights (Sikor and Thanh, 2007). In addition, some forest lands have been allocated to communities, but the communities lack any legal status to manage the land in line with their development interests.

The Land Law of Vietnam (1993, 2003) stipulates that land, including forest lands, is the property of the entire Vietnamese people and is uniformly managed by the state. In line with this notion of positioning the state as the sole land manager, the law ensures that land allocation to farmers and organizations is possible. Nevertheless, forest lands, like all other natural resources in Vietnam, remain under state control (Vien, 2001; 2002). Theoretically, farmers have the right to use allocated forest lands. As stated in the Law for Forest Protection and Development (1991, 2004): "Land users will receive land use certificates and the state shall protect the legal rights and interests of the land users. Households and individuals receiving land allocated by the state will be entitled to exchange, transfer, lease, inherit, and mortgage the land use rights" (Article 1, 2, 3). Moreover, under Decree 02/CP, dated 15 January 1994, the state allocates forest lands to households for a period of 50 years.

In practice, however, the state can overrule these land use rights. For the previous forest protection programs (i.e. Decision 327 and 661), the state obliged farmers to plant certain types of trees, regardless of how farmers perceive their livelihood options. Moreover, in areas where farmers practice shifting cultivation, the allocation of land use rights might ironically weaken farmers' actual rights, especially when farmers would prefer to continue with their slash and burn cultivation, rather than implement forest protection practices (Vien, 2001).

Though the pilot PFES schemes in Lam Dong and Son La provinces do not incorporate land use change as part of the programs, it is possible that the state may use the additional financial incentives from the FPDF to ensure that farmers grow certain types of crops in specific locations (regardless of their existing land use or livelihood options), if such measures are necessary to ensure effective forest protection. As stated in the Decision by the Prime Minister: "Reforestation should be carried out with species suitable to the protection requirement of areas with different climate and soil conditions. Species which provide effective protection, can stand severe climate; poor soil, steep slopes, grow along the sea coast and also can resist pests and diseases as well as fire are to be preferred" (Decision by the Prime Minister on Objectives, Tasks, Policies and Organization for the Establishment of Five Million Hectares of New Forest, 1998, Article 4).

#### 4.2. PES funds as part of the government revenue system

In Vietnam, the government is fully authorized to manage PES funds in line with its goals and interests in forest protection and watershed management, as payment is incorporated as part of the government revenue system. The government defines the overall payment arrangements, collects, and manages the funds for PES program through its Forest Protection and Development Fund.

Transaction and fund channeling for PES implementation is governed by the state (Government Decree on the Policy on Payment for Forest Environment Services, 24 September 2010, Article 14). No negotiations occur between the respective hydropower company as fund provider, and farmers as service providers, regarding the amount of funds, types of services, or payment intervals. Hydropower companies, water utilities and tourism companies provide a portion of their environmental fee for PES application because they are obliged to do so by the government. In turn, they pay the environmental fee to the government rather than channel it directly to farmers, or to farming communities as the service providers.

#### 4.3. PES implementation through centralized state administration

PES implementation might take place without direct participation from farmers or other stakeholders, given the state's centralized administration system. The two pilot PFES schemes in Lam Dong and Son La provinces are implemented relying mainly on government structure and apparatuses from the national down to the village level (To et al., 2012; Winrock International, 2011).

The way PES programs are currently implemented, relying mainly on state apparatuses and structure does not necessarily result in equal distribution of program benefits. For example,  $\pm$  To et al. (2012, p. 247) suggest that in Lam Dong and Son La Provinces, income from PES programs does not reach the poor, due to political and economic constraints: *"The distribution of payments to households was based on formal land data records from past land allocation and forest protection programs. This means that households established after land allocation were automatically excluded from payment schemes. This number is not small, as the land allocation process commenced in 1995 in many provinces. Clearly, when PES policy is scaled up nationally, a significant number of poor will be unable to access PES schemes and benefit from associated payments"*.

Regarding Programs 327 and 661, for instance, the state essentially has not consulted farmers regarding land suitability, crop selection, or livelihood options (Cai, 1999). Article 5 in the Decision by the Prime Minister on Objectives, Tasks, Policies and Organization for the Establishment of Five Million Hectares of New Forest (1998) assigned the task of identifying forest protection areas solely to the People's Committees.

## 5. Discussion

Despite the neoliberal logic incorporated in the concept, PES application in Vietnam demonstrates that PES can be applied as an integral part of the state's centralized planning system. Here, PES serves as another tool that can be used by the state in accordance with its various objectives (e.g. to fund forest conservation programs or to reduce poverty). In this light, PES programs can potentially become part and parcel of the government strategy to strengthen state control over forest lands and land uses.

While PES implementation in Vietnam serves the government's goal of generating additional revenue (primarily from hydropower development) to fund forest protection activities, the impacts on farm households and implications for poverty reduction or

deepening remain unclear (Christiansen et al., 2005; Leimona et al., 2009; Lovera, 2004; McElwee, 2012; To et al., 2012). In line with earlier studies on the impacts of PES implementation on farm households (Gauvin et al., 2010; Uchida et al., 2005), our Vietnam case study indicates how PES implementation is hampered by the problem of high transaction costs and land tenure issues.

While the way PES is implemented in Vietnam might result in better forest protection (i.e. through the provision of financial incentives as an additional means to compel participation), it also highlights the shaping of PES as a potential tool for internal territorialization. The implementation of PES in Vietnam resembles that of China's Sloping Land Conservation Program (SLCP), which the Chinese government designed in a top-down fashion, involving limited consultation with local communities. Farm households are offered simple contracts, which they are encouraged to sign, through a campaign style mobilization program (Bennett, 2008). The SLCP, known also as the Grain for Green Program, has led to the afforestation of millions of hectares of sloping lands in western China, with consequent reductions in soil erosion and improvements in watershed management (Liu et al., 2008). Payments to farm households have been well received, but the government expenditures at the national and local levels have been substantial.

Vietnam's centralized planning does not rule out the possibility that PES program design entails political choices about which classes of people, in which locations, will have access to natural resources and their benefits, now and in the future (McAfee, 1999). In this light, PES program application by the state can resemble some aspects of green grabbing (Van Hecken and Bastiaensen (2010); Fairhead et al., 2012), in which farmers are forced to work on forest lands to achieve a state's policy goals (Donovan et al., 1997; Vien, 2001).

From the perspective of environmental conservation, the question remains whether PES can fully compensate for the negative environmental impacts of hydropower development in general, and with regard to forest loss in particular. According to its energy sector master plan, Vietnam will increase its power production from 9200 MW in 2011 to 17,400 MW in 2020. As part of this plan, the government plans to build 55 large-scale and 40 small-scale hydropower plants. Financially, the plan will result in increased government revenue for forest protection. Nevertheless, rapid hydropower development might also result in the loss of 40,809 ha of rich forest land and 1,089,762 ha of forest land in general  $\pm$  (To, 2012). These estimates of forest loss are based on the assumption of 62.63 ha of forest land loss per 1 MW, and 2.35 ha of rich forest loss per 1 MW (To, 2012). These estimates are not precise, as they are based on a linear extrapolation of energy development in relation to forest lost, without accounting for the type of hydropower reservoir or the types of forest areas cleared. Yet the estimates provide some indication of the scope and degree of hydropower development impacts on forest land. From To et al. (2012, p. 245): *"Large areas of forest in Son La province, most of which were already allocated to households, have been cleared for hydropower plants and many new settlements have been set up for villagers displaced as a consequence"*.

## 6. Conclusions

Our Vietnam case study highlights the dissonance in PES program design and implementation. PES programs are implemented as part of the government's policies in natural resource management. The government defines the payment framework, regulates the payment mechanisms, decides on the types of services, identifies the buyers and sellers of ecosystem services, and ensures that the 'transaction' or the payment occurs.  $\pm$  In



addition, the type of environmental service is not well defined and the provision of the services is not secured. This is in sharp contrast with the notion that PES programs involve well-defined environmental services and voluntary transactions between buyers and sellers (Wunder, 2005).

The dissonance in Vietnam's PES program design and implementation is driven primarily by the government's interest in using PES to generate additional revenue for forest protection and watershed management. With PES, the Vietnamese government employs the idea of market environmentalism to justify its goals of increasing revenue to finance forest protection. Yet, by reshaping the overall PES program design from a mechanism to cope with the classic problem of negative externalities into a tool to generate additional revenue, the state may be able to sustain and expand its role and importance in natural resource management. In turn, the scope and degree of PES programs may be reduced into merely a government subsidy scheme.

To conclude, we have highlighted the importance of understanding the governance structure in which PES programs are implemented. From To et al. (2012, p. 237): "as PES schemes create a market for ecosystem services, such markets must be understood not simply as bald economic exchanges between 'rational actors' but rather as exchanges embedded in particular socio-political and historical context to support the sustainable use of forest resources and local livelihoods." Such understanding is important not only for increasing program significance, but also for describing the rationale behind PES program adoption, and determining whether or not the rationale is consistent with the original concept ± of voluntary transactions involving payments for well-defined ecosystem services.

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