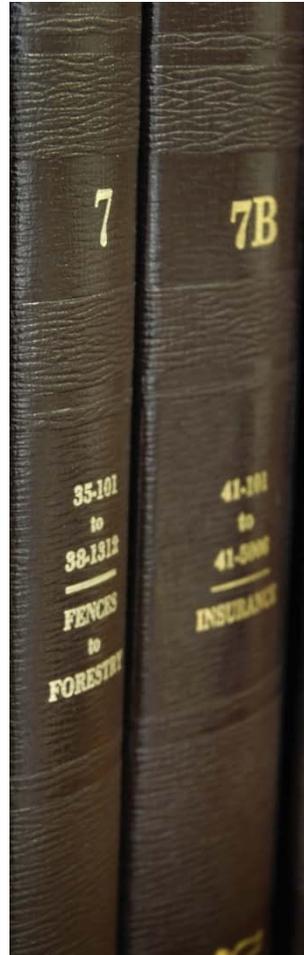


# Laying the Foundation

An Analytical Tool for Assessing  
Legal and Institutional Readiness for PES



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# Laying the Foundation

## An Analytical Tool for Assessing Legal and Institutional Readiness for PES

*Slayde Hawkins, Forest Trends*



the  
**katoomba**  
**group**

December 2011



Forest Trends' mission is to maintain, restore, and enhance forests and connected natural ecosystems, life-sustaining processes, by promoting incentives stemming from a broad range of ecosystem services and products. Specifically, Forest Trends seeks to catalyze the development of integrated carbon, water, and biodiversity incentives that deliver real conservation outcomes and benefits to local communities and other stewards of our natural resources.

Forest Trends analyzes strategic market and policy issues, catalyzes connections between producers, communities and investors, and develops new financial tools to help markets work for conservation and people.

[www.forest-trends.org](http://www.forest-trends.org)



The Katoomba Group, part of the Forest Trends Family of initiatives, is an international network of individuals working to improve capacity related to incentives for ecosystem services and products.

The Katoomba Group's Legal Initiative works to clarify legal issues and address technical gaps by (1) developing country-specific legal and policy information, (2) creating and sharing transactional tools, and (3) providing capacity-building around legal issues.

[www.katoombagroup.org](http://www.katoombagroup.org)

## Executive Summary

Payments for Ecosystem Services (PES) enable investments in vital natural infrastructure upon which all humans rely. Unlike other types of infrastructure—for example, roads, bridges, hospitals, and educational systems—ecosystem services often go unnoticed. These services flow from the natural capital stocks in all nations and regions, and range from dynamics that enable a relatively stable climate and reliable flows of clean water, through protection from storm surges and floods, and much more.

As national governments become increasingly aware of the role that natural capital has in promoting the well-being of citizens and nations, they have begun to turn to PES as a mechanism for driving investment into natural capital. The challenge to date has been to promote more PES transactions, particularly voluntary agreements beyond regulatory carbon trading regimes.

This booklet has been created as an initial resource for public sector officials interested in fostering an environment in which PES transactions can occur. While PES legal and policy readiness is likely to look very different from one country to another—depending on legal frameworks, as well as historical and current circumstances and pressures—understanding policy options for getting ready for PES transactions is an important first step towards assessing readiness within a specific national and subnational context.

This booklet offers an analytical framework for assessing legal and institutional readiness for PES transactions. It is divided into three sections based on timing and the order of addressing issues, with an eye to what will be most important to investors and buyers in payment for ecosystem services agreements. Specifically, the first level of preparing for PES agreements should be ensuring that fundamental or threshold conditions are in place for buyers to feel that there is sufficient stability in place to consider entering in these business arrangements. The second level of preparedness, while important for well-functioning PES, may be developed adaptively as needs and options become clearer via PES experience on the ground. Finally, level three includes non-urgent aspects that may be important to streamline or scale up PES, depending on the particular circumstances.

Our intention in issuing this booklet is to offer public sector officials materials that can be used to identify options and gaps within in their particular legal and institutional contexts. This material is not a definitive guide or a set of policy prescriptions. Since PES policy and legal environments will vary greatly, what is feasible or attractive for enabling a legal and institutional framework will depend upon numerous political, economic, and other factors, which must be assessed in the specific national or sub-national context.

We hope that this booklet will help to spur discussion around how to most effectively attract investment in the natural capital and ecosystem services upon which we all rely.

### Level 1 - Threshold Conditions

- No Prohibition on PES
- Identifiable Supply and Demand
- Governance Factors
- Tenure Rights in Land
- Rights in Ecosystem Services
- Discernable Regulatory Regime for PES

### Level 2 - Essential Aspects to Be Developed in Parallel with PES

- Ecosystem Services Inventory
- Methodologies for Measuring, Monitoring, Reporting, and Verification of Ecosystem and PES Outcomes
- Registries
- Public Participation
- Technical Support

### Level 3 - Streamlining PES

- Refining, Expanding PES Infrastructure
- Facilitating International Investment
- Dedicated Tariffs
- PES Risk Mitigation



## Acronyms

<b>B2B</b>	Business to Business
<b>BBOP</b>	Business and Biodiversity Offsets Programme
<b>CDM</b>	Clean Development Mechanism of the Kyoto Protocol
<b>EIA</b>	Environmental Impact Assessment
<b>MMRV</b>	Measurement, Monitoring, Reporting, and Verification
<b>PES</b>	Payments for Ecosystem Services
<b>PWS</b>	Payments for Watershed Services
<b>UK</b>	United Kingdom
<b>VAT</b>	Value-Added Tax

## Glossary

**Commodity** – a marketable good that has value and is fully or partially fungible with like goods. Commodity prices depend largely upon supply and demand, and less upon aspects of product differentiation such as the brand, perceived quality, etc.

**Ecosystem Services** – the services and products provided to people by ecosystems as a result of dynamic processes involving living and non-living systems. They can be categorized as *provisioning* (e.g., food, fuel, fresh water), *regulating* (e.g., climate stabilization, water purification, air quality), *cultural* (e.g., spiritual enrichment, recreation), and *supporting* (e.g., soil formation, primary production) (Millennium Ecosystem Assessment 2005).

**Jurisdiction** – the territorial range of the authority of one or more formally constituted governing bodies, which may be local, regional, national, or international.

**Leakage** – displacement of impairments to ecosystem service functioning from inside PES project or program boundaries to external geographic areas.

**No Net Loss** – a commitment or requirement that a development project result in no loss of ecosystem service functioning overall, considering on-site impacts as well as offsets. Generally, offsets may only be used after negative ecosystem impacts have been avoided to the greatest possible extent, minimized where unavoidable, and when remaining impacts have been appropriately mitigated or rehabilitated on site.

**Payments for Ecosystem Services (PES)** – broadly defined, voluntary transactions whereby an ecosystem services seller improves the delivery of, for example, carbon sequestration or other ecosystem services, in return for compensation from an ecosystem services buyer or investor.

**Reference Level** – baseline status of ecosystem service functioning, potentially measured from historical levels or averages or projected business-as-usual.

**Registry** – an official electronic record of names, transactions, project data, credit issuance, or other information related to PES activities.

**Reserve account** – a separate amount of ecosystem services credits that are not offered for sale, but are held aside to make up for shortfalls under specific circumstances in the future.

**Security** – a fungible, negotiable financial instrument that represents an interest in a company or entity.

**Tenure** – the legal or customary relationship of an individual or group with respect to land and other natural resources such as water and trees. Tenure rules define how access is granted to rights to use, control, and transfer land, and associated responsibilities and restraint.

**Trading up** – offsetting ecosystem services impairments with restoration elsewhere that yields more than equivalent ecosystem services functioning than what was lost. For example, a biodiversity offset that replaced lost habitat for equivalent habitat richer in threatened and/or valuable species might be considered to be “trading up.”

# Table of Contents

<b>Introduction .....</b>	<b>1</b>
PES and the Role of the Government .....	1
Overview .....	2
<b>Background – About PES Transactions .....</b>	<b>4</b>
<b>1. Threshold Conditions for PES.....</b>	<b>6</b>
1.1 No Prohibition on PES.....	6
1.2 Identifiable Supply and Demand .....	6
1.3 Governance Factors .....	7
1.4 Tenure Rights in Land.....	8
1.5 Rights in Ecosystem Services.....	9
1.6 Discernable Regulatory Regime for PES.....	10
<b>2. Essential Aspects to Be Developed in Parallel with PES .....</b>	<b>12</b>
2.1 Ecosystem Services Inventory.....	12
2.2 Methodologies for Measuring, Monitoring, Reporting, and Verification .....	13
2.3 Registries .....	14
2.4 Public Participation.....	14
2.5 Technical Support.....	15
<b>3. Streamlining PES.....</b>	<b>16</b>
3.1 Refining and Expanding PES Infrastructure .....	16
3.2 Facilitating International Investment .....	16
3.3 Dedicated Tariffs.....	17
3.4 PES Risk Mitigation .....	17
<b>Concluding Thoughts.....</b>	<b>19</b>
<b>Bibliography .....</b>	<b>20</b>



## Introduction

Ecosystems provide services that sustain life. Forests and wetlands, for example, regulate the climate, purify and deliver reliable flows of water, while also supporting the plants and animals upon which humans rely for food and fuel. These benefits are enjoyed both near the ecosystem and far away, where pollinators sustain agricultural production from year to year and downstream cities enjoy reliable water supply and protection from sudden floods.

Replicating even a fraction of the services that are freely provided by well-functioning ecosystems would cost billions of dollars – if it could be done at all. Much of this natural capital is irreplaceable at any price. Yet, despite the value that ecosystems provide, many are being degraded faster than they can recover.<sup>1</sup> Pollution, degradation, land-use conversion, selective removal of valuable plant and animal species, and other factors drive ecosystem service losses.<sup>2</sup> The results are felt, for example, in a changing climate, urban water shortages, and reduced resilience to natural disasters.

Payments for ecosystem services (PES) represent one approach to enabling and incentivizing investments into functioning natural systems, the natural infrastructure of every country. These PES transactions place a monetary value on – and enable investments in – vital ecosystem services to help make sustainable resource use and management a competitive option for landholders. Over the past ten years, PES and related instruments have been steadily gaining traction as tools for preserving and enhancing the benefits of healthy ecosystems.

### Box 1. PES Example – Payments for Watershed Services in Gabon's Mbé Watershed

The Mbé watershed provides water and electricity to Gabon's capital city of Libreville, which is home to 60% of the country's population. Upstream forests – among the most biodiverse in Africa – play a key role in electricity production, helping to reduce siltation in the reservoirs and to regulate water flow through the hydroelectric dam.

Forests in the Mbé are under threat from logging, mining, and subsistence uses. Controlling illegal exploitation and regulating legal uses are both important issues. In response to these threats, Gabon's Ministry of environment is working with Wildlife Conservation Society (WCS) to set up a system of payments for watershed services. The plan is for downstream electricity users to pay – indirectly, via the electrical utility – for the upstream adoption of land-use and -management practices that promote good functioning of the hydroelectric dam while protecting the ecosystem.

*Source: Filou 2009, [www.ecosystemmarketplace.com/a/libreville\\_power](http://www.ecosystemmarketplace.com/a/libreville_power).*

## PES and the Role of the Government

As governments consider how to drive investment into natural capital and provide incentives for sustainable natural resource management, there may be a role for encouraging voluntary, private (between a buyer and a seller) PES transactions or even implementing PES measures at the government level. Reasons for government engagement with PES include:

- Protecting and restoring well-functioning ecosystem can help to **reduce costs, volatility, and conflict related to food production and water supply**, among other positive benefits.

<sup>1</sup> The Millennium Ecosystem Assessment found that 60% of the ecosystem services examined were being degraded or used unsustainably.

<sup>2</sup> The Economics of Ecosystems and Biodiversity 2010.

- Where healthy ecosystems protect against storm surges and floods, they also directly **reduce the economic cost of natural disasters and disaster relief**.
- Because effective PES should go to land users and managers, these payments also have the **potential for poverty alleviation and development impacts**.
- PES can be structured to create **investment opportunities** for foreign entities and multinationals to support conservation and long-term sustainable development.
- PES protect a country's natural capital, providing **long-term benefits and contributing to sustainable development** goals.

A government that wants to support PES has a critical role to play in both highlighting the pivotal role of ecosystem services in national infrastructure as well as in fostering supportive environments in which PES transactions can occur.

At present, however, there are few resources available to assist government officials in assessing domestic legal and institutional readiness for payments for ecosystem services and creating an enabling environment for PES transactions. While PES legal and policy readiness is likely to look very different from one country to another – depending on legal frameworks, as well as historical and current circumstances and pressures – understanding policy options to prepare for PES is an important first step towards assessing readiness in a specific national context.

### **Box 2. PES Example – Biodiversity Offsets in Madagascar**

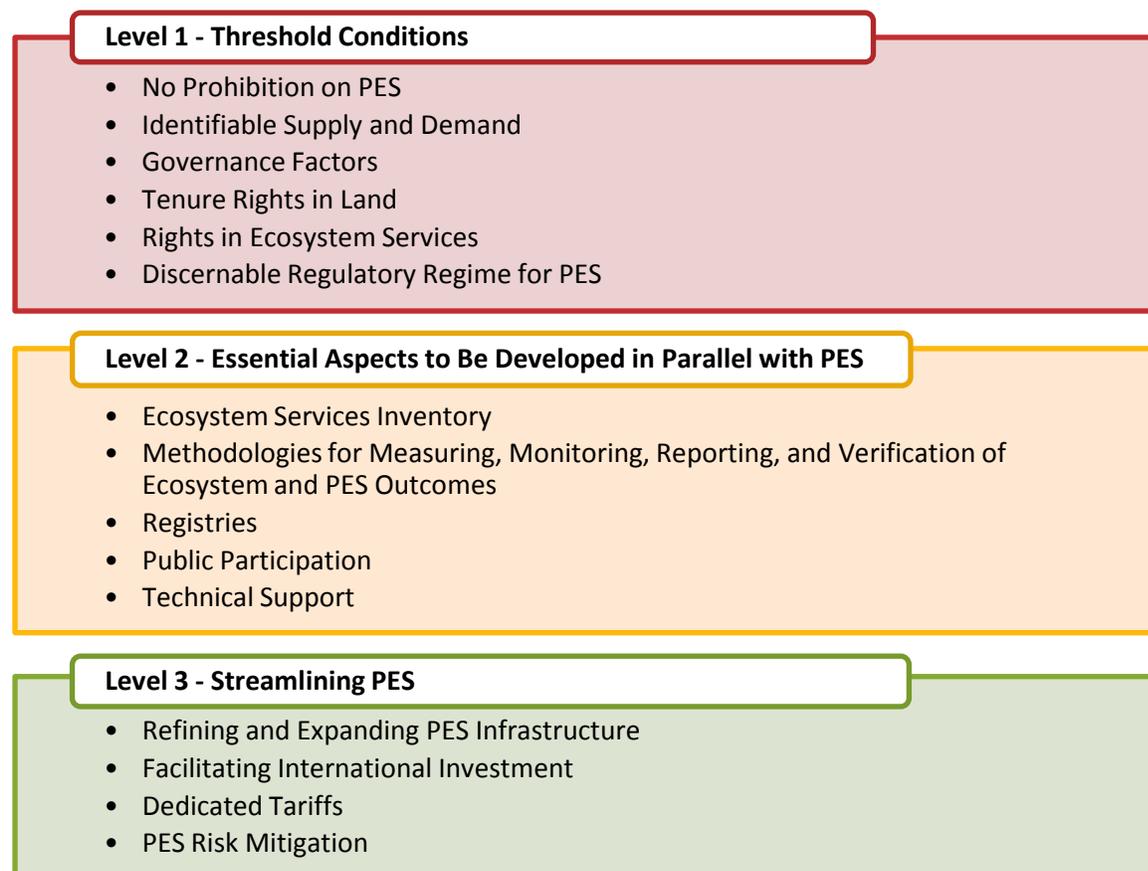
The Ambatovy Project, a nickel mine in Madagascar, is working on avoiding and minimizing the impacts of its construction and operation on the island nation's biological diversity. The project is committed to restoring biodiversity losses that occur despite avoidance and mitigation measures, as well as to using biodiversity offsetting to achieve no net loss of biodiversity overall. Given Madagascar's high levels of endemism, the project is highly complex and, potentially, high-impact.

*Source: Berner et al. 2009. <http://bbop.forest-trends.org/guidelines/ambatovy-case-study.pdf>.*

## **Overview**

In response to this context and set of needs, this booklet seeks to provide a pathway forward for national government officials who are interested in starting to explore a supportive legal and institutional environment for PES. The booklet breaks assessment questions into three categories, based on timing and the order of addressing issues, with an eye to what will be most important to investors and buyers with regards to payment for ecosystem services agreements. Specifically, the first area of preparing for PES agreements should be ensuring that fundamental or threshold conditions are in place for buyers within PES agreements to feel that there is sufficient stability in place to consider such a business arrangement. The second level of preparedness, while important for well-functioning PES, may be developed adaptively as needs and options become clearer via PES experience on the ground. Level three includes non-urgent aspects that may be important to streamline or scale up PES, depending on the particular circumstances.

**Figure 1. Factors for Assessing Legal and Institutional Readiness for PES Transactions**

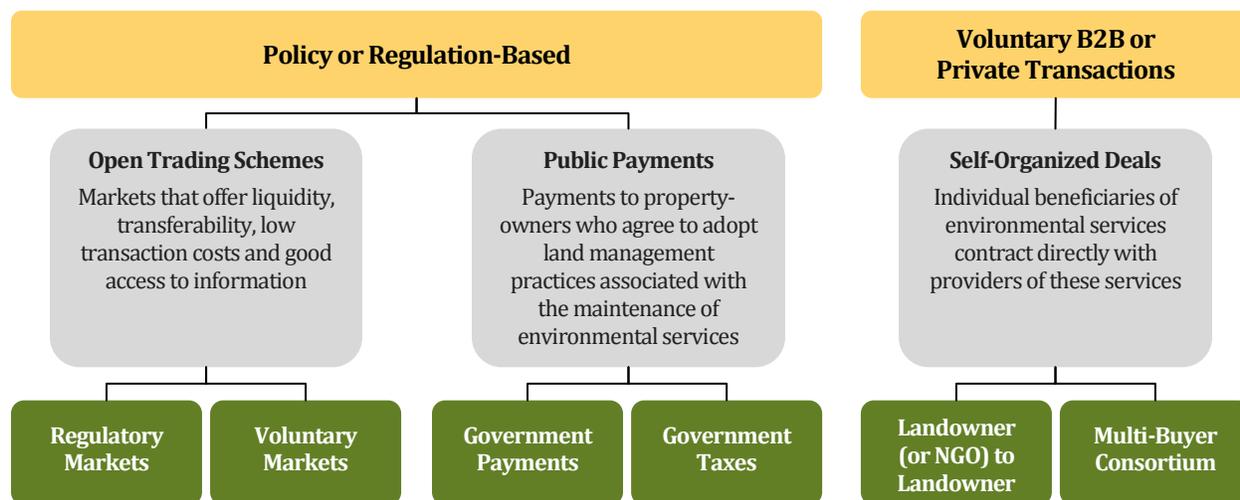


This booklet may be used by policymakers to identify gaps and options within in their particular legal and institutional context, or by other stakeholders to assess PES opportunities. In practice, what is feasible or attractive in terms of concrete steps towards an enabling legal and institutional framework will depend upon numerous political, economic, and other factors. As with any major structural developments, finding sufficient political will is crucial.

## Background – About PES Transactions

Generally speaking, a PES transaction involves an individual or group that agrees to restore or maintain ecosystem services over time in return for payment. However, PES transactions may take various different forms, depending upon the ecosystem service(s) at issue, the identity and motivations of the buyer and seller, and the legal context, among other factors. One way to understand the range of different approaches to “investing” in ecosystem services is laid out in the figure below which distinguishes between PES based on policy or regulation and those that are voluntary business to business (B2B) or private transactions.

Figure 2. Categorization for Environmental Markets<sup>3</sup>



The most common transactions at present relate to payments for:

- **Carbon emission reductions or removals**, for example via the Clean Development Mechanism of the Kyoto Protocol (CDM) or the voluntary carbon market. In 2010, forest carbon market participants reported transacting 30.1 million metric tons of carbon dioxide equivalent (MtCO<sub>2e</sub>), worth about USD 175 million.<sup>4</sup>
- **Improved water quality or flow**. In 2008, 288 identified payments for watershed services (PWS) and water quality trading (WQT) programs accounted for USD 9.3 billion worth of transactions.<sup>5</sup>
- **Biodiversity conservation or restoration**. Compensatory biodiversity mitigation programs – including active mitigation banking or biodiversity credit programs, policies that channel development impact fees to biodiversity improvements, and one-off offset transactions – accounted for between USD 1.8 and USD 2.9 billion in transaction value, or potentially even more, given difficulties in assessing market size for biodiversity transactions.<sup>6</sup>

Buyers might be, for example, philanthropic or public interest organizations or companies that are seeking to mitigate their environmental impact for public relations purposes. Or they might be individuals or companies that have more pressing incentives to buy in that they are required to reduce or offset environmental impacts by law or they rely directly or indirectly on ecosystem service provision to maintain their business. For example, a water utility may find that upstream conservation and restoration is a cost-effective way to secure water

<sup>3</sup> Waage and Stewart 2007.

<sup>4</sup> Diaz et al. 2011.

<sup>5</sup> Stanton et al. 2010.

<sup>6</sup> Madsen et al. 2010.

quality, quantity, and/or flow. Sellers are likely to be individual land owners or managers or national administrative bodies in the case of state-owned or -managed land.

### **Box 3. PES Example – Small-Scale Afforestation in Uganda**

Since 2003, a community in Uganda has been working with Ecotrust to create and sell carbon credits from the Trees for Global Benefits project. Participants plant trees on their land and the trees sequester carbon as they grow. Plan Vivo periodically assesses how much carbon is sequestered in this way and issues carbon credits (Plan Vivo Certificates) accordingly.

A proportion of the credits from each participant's land are set aside as a buffer to insure against loss of sequestered carbon due to natural disaster or otherwise. In addition, Ecotrust collects 10% of credit revenues from each participant to contribute to a Community Carbon Fund. Money from the Community Carbon Fund can be used for projects that benefit the community, for example to manage natural hazards that threaten planted trees, provide short-term loans to community members, or to invest in watershed management, sanitation, soil conservation, or other projects. Buyers so far have been northern companies that are investing for pre-compliance or public relations purposes.

*Source: Vonada 2011, [www.ecosystemmarketplace.com/a/trees\\_for\\_tots](http://www.ecosystemmarketplace.com/a/trees_for_tots); Bayon 2005, [www.ecosystemmarketplace.com/a/ugandan\\_teacher](http://www.ecosystemmarketplace.com/a/ugandan_teacher).*

## 1. Threshold Conditions for PES

While circumstances vary from country to country, certain threshold requirements exist for all PES transactions to occur. Generally, these thresholds refer only to minimum requirements, for example in terms of supply and demand, governance and regulatory aspects, and rights in land and ecosystem services. Beyond the absolute minimum levels required to support PES, additional strengthening in these fundamental aspects can be expected to further bolster PES.

### 1.1 No Prohibition on PES

If governments wish to promote or facilitate PES, there can be **no explicit or implied prohibition on PES in any valid law or provision of the constitution**. Such a prohibition most likely would not be a specific ban on PES, but rather a restriction or establishment of rights in ecosystem services that is fundamentally inconsistent with PES.

For example, Article 74 of the Constitution of Ecuador (2008) says that ecosystem services may not be “appropriated” and that their production, provision, and use will be regulated by the national government. This article is generally interpreted to preclude PES from occurring without additional regulation and guidelines from the government.

Often, PES is neither explicitly permitted nor prohibited by law. In such case, the challenge is in inferring rules and regulations that affect PES from relevant law related to, for example, forest and natural resource use, water rights, development, and other issues. These issues are discussed in more detail below.

#### Level 1 - Threshold Conditions

- **No Prohibition on PES**
- Identifiable Supply and Demand
- Governance Factors
- Tenure Rights in Land
- Rights in Ecosystem Services
- Discernable Regulatory Regime for PES

### 1.2 Identifiable Supply and Demand

In order for PES of any kind to be viable, there must be supply and demand. That is, there must be: a **valuable ecosystem service** that is actually **being degraded or lost** (or whose degradation or loss is imminently threatened), and **key stakeholders who perceive** (or can be made aware of) both the value of the ecosystem service and the threat. Further, it must be possible for **actions by defined individuals or groups to mitigate threats or prevent degradation and loss**.

#### Level 1 - Threshold Conditions

- No Prohibition on PES
- **Identifiable Supply and Demand**
- Governance Factors
- Tenure Rights in Land
- Rights in Ecosystem Services
- Discernable Regulatory Regime for PES

To identify opportunities, it is therefore necessary to ask:

- What are the ecosystem services at issue and who is benefitting from, or dependent on, continued ecosystem service provision?
- What is the threat, whether current or likely degradation or loss, and what are the drivers?
- Are beneficiaries aware of the importance of, and threats to, these ecosystem services?
- What is the demand driver, e.g., incentives from international institutions, private sector expectations, actual conflict around the flow of ecosystem services, government incentives or restrictions, or others?

In some circumstances, government intervention may be necessary for PES to take root because supply and demand are lacking. For example where the existence or value of ecosystem services is not perceived or the

benefits of ecosystem services are non-excludable, then market transactions in those ecosystem services are unlikely to occur, absent some kind of government requirement or other intervention.<sup>7</sup>

#### **Box 4. Potential Government Actions to Spur Supply and Demand**

If government intervention to spur or create PES supply or demand is needed, the type of intervention that is likely to be necessary and sufficient will vary greatly from case to case. Numerous potential options exist, including:

- Targeted awareness-raising campaigns around ecosystem service value and threats.
- Organizing supply and demand via centralized listing, exchange, or otherwise.
- Mandatory environmental impacts reporting for certain development or land-use activities that require assessing impact over ecosystem services.
- Requirements to maintain or offset ecosystem service loss in connection with development projects (e.g., “no net loss” of biodiversity).
- Subsidies for conservation activities, which may be funded by general taxes or by resource usage fees or targeted tariffs.
- Comprehensive offsets, trading, or mitigation banking programs.

### **1.3 Governance Factors**

PES readiness is not dissimilar to readiness for other investments, including the fact/idea that **PES investors require minimum governance factors, particularly in terms of enforcement of contracts and basic rule of law.** That is, minimum levels of governance are required in order for there to be investment demand for PES. Beyond minimum levels, improved governance plays a major role in facilitating stable PES projects and programs and attracting additional funding.

#### **Level 1 - Threshold Conditions**

- No Prohibition on PES
- Identifiable Supply and Demand
- **Governance Factors**
- Tenure Rights in Land
- Rights in Ecosystem Services
- Discernable Regulatory Regime for PES

Because PES transactions are highly dependent on contracts, which outline the parties’ rights and responsibilities, access to courts and enforcement of contracts are particularly important aspects of PES preparedness. Other governance factors that are relevant include:

- Public participation;
- Transparency;
- Access to information;
- Accountability; and
- Rule of law.<sup>8</sup>

Without minimum levels of governance in place, PES investments will be perceived as too risky, crippling demand for PES.

<sup>7</sup> Salzman 2009, 22-23.

<sup>8</sup> World Bank Doing Business Project 2010.

## 1.4 Tenure Rights in Land

On the supply side, at least some potential **sellers must have clear and secure tenure rights sufficient to support PES activities**. Tenure rights do not necessarily mean private ownership, but rather secure, clear, long-term rights to possession, use, management, and potentially transfer of land use rights. Relevant rights can be subdivided into the rights that a potential PES seller must have (1) in the land and natural resources at issue, as well as any inputs (such as seedlings, fertilizer, machinery, raw materials) into PES activities, and (2) in the ecosystem services (or credits for ecosystem services) generated by the PES project. This section will discuss rights in land and natural resources, while the following section discusses rights in ecosystem services.

### Level 1 - Threshold Conditions

- No Prohibition on PES
- Identifiable Supply and Demand
- Governance Factors
- **Tenure Rights in Land**
- Rights in Ecosystem Services
- Discernable Regulatory Regime for PES

Parties to a PES agreement who lack minimum rights in the project area or natural resources cannot guarantee that project activities will continue as promised, creating the risk that ecosystem services will not be delivered and that a PES arrangement will be abandoned. The necessary “minimum rights” in the particular case will depend a great deal upon the legal context, but can be said to at least include **use rights** sufficient to perform the project activities and the **right to exclude or prohibit incompatible uses**. Take for example the case of a PES seller involved in tree-planting in order to sequester carbon. That seller must have the right to use the land for tree planting, as well as the right to prohibit others from cutting or destroying trees within the project area.

The reality, however, is that there is often a lack of clarity in land rights in many places, making it challenging to determine who, if anyone, is the rightful PES seller. Therefore, governments have a real opportunity to clarify rights in land and natural resources in order to pave the way for PES.

A few options for potential government action include:

- **Facilitating land titling or formalization of land use rights**, either alone or as part of a government program to facilitate or encourage PES. Formalization of land-use rights may occur at a national or more local level.
- **Establishing or utilizing mechanisms for granting secure land-use rights in state-owned lands**, for example via a conservation concession or similar instrument.
- **Streamlining registration of titles or use rights and facilitating access to these records.**
- **Providing training and/or resources related to obtaining and registering title or use rights and resolving tenure conflicts.**

Another option is to choose to implement or incentivize PES only in those areas where tenure is clear. However, this approach (1) may exclude high-priority ecosystems that are held under insecure tenure, and (2) may risk disproportionately benefitting the rich, who often have more secure rights in land. Therefore, to the extent that this approach is taken, non-PES measures should be considered in parallel to ensure that high-priority ecosystems are also preserved and restored, although they are ineligible for PES, and to address equity dimensions.

State ownership of land creates different issues and options for allocating rights. State-owned lands are in some places prone to resource overexploitation.<sup>9</sup> One potential cause, where this is the case, is that local resource users of public lands lack secure, long-term rights in the area and therefore have no incentive to limit current use in order to preserve the area over the long-term.

<sup>9</sup> Chhatre and Agrawal 2009; Porter-Bolland et al. 2011.

On the other hand, governments also have considerable opportunity for PES on public lands, either via state-run programs or systems of allocating use rights that are compatible with, or conducive for, PES. For example, conservation concessions or collaborative natural resource management structures may be used to grant rights in state-owned lands that can support private PES transactions. As governments typically own large areas of forests, rich sources of ecosystem services, this can be a major issue.

### Box 5. Tenure, Social Risks, and Safeguards

There are several tensions inherent to the topic of tenure and PES. One is the tension between the need to clarify or eliminate restriction of land rights, including by foreign entities, and the need to safeguard against land grabs and displacement.

Simplifying and streamlining land ownership can facilitate PES and make PES more accessible. Yet, it can also facilitate land grabs by powerful people or entities, who seek to capture PES revenues. Similarly, recognizing *de facto* rights can increase accessibility and equity, but can also create challenges in terms of titling, recording, and consultation.

Potential unintended consequences, or policy perversities, should be carefully considered prior to definitive policy action.

Sources: Curnow 2009; Greiber 2009.

## 1.5 Rights in Ecosystem Services

### Level 1 - Threshold Conditions

- No Prohibition on PES
- Identifiable Supply and Demand
- Governance Factors
- Tenure Rights in Land
- **Rights in Ecosystem Services**
- Discernable Regulatory Regime for PES

Clear rights in specific ecosystem services are a related but distinct issue from land tenure rights. For PES transactions that involve a purchase of credits for ecosystem services or similar instruments (as opposed to land management services), the ecosystem services must legally be able to be transferred separately from their source. They might, for example, be considered as a type of intangible good. In this type of transaction, the seller must “own” the ecosystem services and must have a

right to transfer them without selling the land itself or the natural resources on the land.

The law may implicitly or explicitly provide for who has rights in ecosystem services. The Forestry Law of Peru, for example, recognizes that administrative authorizations to use forest resources include rights in economic benefits derived from ecosystem services.

Where the law does not specifically refer to rights in, or ownership of economic benefits from ecosystem services, they might, for example belong to:

- (1) A private owner as part of his or her rights in land,
- (2) The nation as a whole, and might be granted to project participants via an approval letter coming from the government, or
- (3) Those with rights in the natural resources on the land (i.e., timber rights).<sup>10</sup>

For government officials interested in supporting, or incentivizing, more PES transactions in-country, the law should specifically speak to the question of the nature of ecosystem services and rights in ecosystem services

<sup>10</sup> Curnow 2009.

(or economic benefits derived from ecosystem services) in order to provide the clarity needed for participants to engage in PES.

## 1.6 Discernable Regulatory Regime for PES

The restrictions and requirements that will apply to PES transactions need to be discernable. That is, there should be a minimum level of clarity as to:

- Which regulatory entities have jurisdiction over PES activities;
- What are the contours of their powers; and
- What formal approval or registration processes (and associated fees), if any, are involved.

### Level 1 - Threshold Conditions

- No Prohibition on PES
- Identifiable Supply and Demand
- Governance Factors
- Tenure Rights in Land
- Rights in Ecosystem Services
- **Discernable Regulatory Regime for PES**

If tradable credits are used, the regulatory regime that applies is likely to differ if they are classified as a commodity, a security, or something else.<sup>11</sup> For a government that is interested in facilitating ecosystem services transactions, clarity in how ecosystem services credits will be regulated, and therefore what taxes and fees will apply, will be important to providing clarity and certainty to potential participants. Note that commodities or securities regulation, whichever is applicable, has implications for any project or program involving PES credits, whether public or private, compliance, or voluntary.

In general, commodities regulation is less restrictive than securities regulations and is likely to provide a more clear, efficient, and accessible framework for PES. Commodities and securities are broad categories, however. Depending on how they are created and sold, credits for ecosystem services might be further subcategorized, with consequences for their regulatory treatment.

To the extent that the legal nature of ecosystem services credits is not defined, PES contracts must account for substantial uncertainty in future taxation and other regulatory treatment. This uncertainty is likely to translate into lower and more volatile credit prices. In addition, project developers may have difficulty in obtaining project finance to the extent that revenues are less certain.

Taxes that may apply to PES credit transactions include:

- Sales and value-added (VAT) taxes that are charged when credits are transferred and that are based on credit value, if credits are defined as an intangible asset (Curnow 2009).
- Duties or tariffs on credits that are exported from the host country and imported into another country.

Other tax implications for PES activities are applicable regardless of whether credits are used or how they are classified, such as:

- Personal and corporate income tax on PES income, which may be subject to withholding at the non-resident rate for foreign project developers. Note also that revenues may be treated as capital receipts that are subject to capital gains tax rates.
- Property taxes, based on the value of the land, which may increase due to the potential for, or actual occurrence of, PES on that land.
- Indirect taxes on goods and services that are used in PES activities.

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<sup>11</sup> It has been proposed that ecosystem services credits should be treated as, and regulated, as a currency. So far, this construct remains purely theoretical, however.

A minimum level of clarity in terms of the regulatory structure for PES, including which authorities have jurisdiction over PES regulation, is a threshold requirement for PES to occur. Otherwise the level of uncertainty – particularly for potential international buyers, who may be subject to export taxes – is too great. Beyond minimum levels, additional clarity will help to facilitate PES.

## 2. Essential Aspects to Be Developed in Parallel with PES

Beyond threshold requirements for PES, there are aspects of the institutional framework that are needed in order to systematize or scale up PES and/or to increase clarity and efficiency of transactions. Anything beyond one-off PES transactions requires aspects of supportive institutional infrastructure.

Institutional aspects are incredibly important for PES to happen at scale. Yet, they do not need to be in place or perfected in order for PES activities to begin to occur; instead, they can be developed in parallel with PES in an adaptive learning approach. That is, formal and technically-sophisticated elements of a supportive institutional framework can be developed and refined as PES experience grows.<sup>12</sup>

### 2.1 Ecosystem Services Inventory

Underlying every PES transaction is a shared understanding about the value and distribution of ecosystem services. Ecosystem service inventory, as well as valuation assessments, forms the basis of ecosystem services baselines from which PES progress can be measured and also informs strategic conservation planning. If national, or even sub-national assessments are not feasible, however, many projects can (and do) move forward on a project-only assessment basis, including site-specific data, baselines, and measurement protocols over time.

#### Level 2 - Essential Aspects to Be Developed in Parallel with PES

- **Ecosystem Services Inventory**
- Methodologies for Measuring, Monitoring, Reporting, and Verification
- Registries
- Public Participation
- Technical Support

Whether they are at national, subnational, or local levels, these baselines, or reference levels, represent current or projected future ecosystem service provision absent PES project activity. Having an accurate baseline helps to determine whether, and to what extent, PES activities succeed in delivering promised ecosystem services benefits. Baselines may be constructed in a number of different ways – each project may establish a baseline, based on a unique or a shared methodology (bottom-up), or a baseline may be established at the regional or national level and allocated among projects within the relevant area (top-down).

In either case, creating a baseline requires adequate, consistent classification of ecosystem types and services. Inventory and mapping might reveal levels and types of services that are delivered under alternative land management regimes, indicate the degree to which ecosystem service supply is spatially congruent, and help to forecast changes in services and societal needs in the future. Assumptions must be clearly stated to make the process transparent and allow for updating as new information is developed.

Robust mapping of ecosystem services is also useful for priority-setting at the government level. In every country, conservation must be balanced against competing demands on land and natural resources and coordinated with economic development activities. Strategic conservation planning and economic-ecological zoning are needed to identify areas of high conservation (and/or ecosystem service) value and to support “trading up” in the case of biodiversity offsetting.

Building off of robust ecosystem service mapping and valuation, economic-ecological zoning can be used to systematically identify priority areas for ecosystem service provision and different types of economic development activities. Practically, ecosystem conservation and restoration cannot come at the expense of production and economic development. The process of comprehensive economic-ecological zoning allows governments and PES participants to make educated decisions about which ecosystems are priority areas for

<sup>12</sup> For more information about institutional actors and aspects of the institutional framework, see Waage et al. 2008, [http://www.forest-trends.org/documents/files/doc\\_2347.pdf](http://www.forest-trends.org/documents/files/doc_2347.pdf).

conservation and restoration and which are priority areas for productive activities, extractive industries, or other types of economic activity that may clash with conservation goals. In priority areas for production, for example, intensification might allow for preservation or restoration of prime habitat that would otherwise be degraded by scattered, low-yield farms.

Furthermore, strategic conservation planning that builds off of ecosystem service inventory and valuation can reveal opportunities to combine ecosystem management for conservation with other goals, such as low-impact agriculture or aquaculture, storm protection or erosion control, in order to access additional financial flows.

## 2.2 Methodologies for Measuring, Monitoring, Reporting, and Verification

### Level 2 - Essential Aspects to Be Developed in Parallel with PES

- Ecosystem Services Inventory
- **Methodologies for Measuring, Monitoring, Reporting, and Verification**
- Registries
- Public Participation
- Technical Support

Whether they are engaging in PES to satisfy a legal obligation, are pursuing public relations or philanthropic goals, or are securing their supply chain, buyers are seeking to secure real ecosystem services outcomes. In other words, PES transactions are conditional on ecosystem service delivery or on the maintenance of ecosystem structure and function that is very likely to result in expected ecosystem services flows.

Therefore, the availability of guidance around measurement, monitoring, reporting, and verification (MMRV) of progress from a baseline level of ecosystem service provision is an important aspect of a supportive institutional framework. Overarching guidance for, or regulation of, MMRV can be expected to increase transparency, accuracy, and certainty and also to reduce transaction costs. Key questions to be addressed in such guidance are:

- What ecosystem services are recognized and how is improvement or deterioration in these ecosystem services measured?
- What set of activities does MMRV include with respect to these ecosystem services?
- When, how often, and by whom are these activities performed?
- What are the geographical limits of MMRV? How, if at all, are impacts outside of these geographical limits to be taken into account?
- What will be considered to be ecologically equivalent (biologically, geographically, etc.) for purposes of offsetting? What will be considered to be “trading-up”?

Overarching guidance on these and other MMRV issues will help institutionalize consistent assumptions and methodologies across different projects or activities, lending transparency, accuracy, and legitimacy to PES activities overall. Consistent MMRV will also reduce administrative and transaction costs as regulators and PES participants avoid duplicating efforts in designing, implementing, and assessing MMRV.

The government’s role in MMRV may involve endorsing, supporting, or even helping to develop third-party MMRV methodologies or the internal development and promulgation of MMRV guidelines or regulations. Guidance on this issue might cover only basic issues – such as clearly defining ecosystem services and their measurement – or may be comprehensive. Existing methodologies – such as those developed for the CDM and voluntary carbon markets or the biodiversity offset methodologies developed by the Business and Biodiversity

Offsets Program (BBOP) – can inform the process of MMRV guidance development or even be endorsed wholesale.<sup>13</sup>

## 2.3 Registries

PES registries are another important aspect of a supportive institutional framework. In practice, a PES registry will be an electronic database containing information on projects, transactions, tradable ecosystem services credits, and potentially other information. Using a registry makes it possible to track ecosystem service transactions, avoid double-counting of ecosystem service benefits, and to hold participants accountable. In order for this data aggregation and dissemination to be effective, however, it should happen at the national (or, potentially, regional) level, whether implemented by the government itself or by an independent non-governmental body.

### Level 2 - Essential Aspects to Be Developed in Parallel with PES

- Ecosystem Services Inventory
- Methodologies for Measuring, Monitoring, Reporting, and Verification
- **Registries**
- Public Participation
- Technical Support

The registry may serve multiple different functions, such as:

- Capturing geographical information on where projects are located.
- Registering PES participants and associated PES activities.
- Displaying environmental, social, technical, or other criteria applicable to projects.
- Tracking performance of PES activities.
- Recording PES credit issuance or payments made.
- Issuing and tracking tradable PES credits.<sup>14</sup>

In addition, the registry might be connected to or cross-referenced with the system of land titles, providing more certainty around tenure issues in PES. PES registries can be implemented in phases, serving basic project tracking functions at first and increasing in complexity and interconnectedness over time.

## 2.4 Public Participation

Another key aspect of a supportive institutional framework is the presence of effective structures and processes for consultation and information dissemination.<sup>15</sup> Relevant laws and regulations should be circulated for public comment prior to enactment and publication, and there should be processes for receiving and responding to stakeholder concerns and complaints.

This component supports free, prior and informed consent from indigenous peoples, as required by the UN Declaration of the Rights of Indigenous Peoples, as well as other stakeholders. It is also an important safeguard for small-scale, rural, and community interests in particular, which might be underrepresented in national dialogues.

### Level 2 - Essential Aspects to Be Developed in Parallel with PES

- Ecosystem Services Inventory
- Methodologies for Measuring, Monitoring, Reporting, and Verification
- Registries
- **Public Participation**
- Technical Support

<sup>13</sup> For more information about MMRV, see Diaz and Delaney 2011; Gammie and Olander, forthcoming January 2012; Business and Biodiversity Offsets Program, forthcoming January 2012.

<sup>14</sup> Olander et al. 2010.

<sup>15</sup> Note also that information sharing and early dialogue is 1b, and consultation and participation process is 1c of an R-PP under the FCPF (Lotsch 2011).

## Box 6. Community Participation and Free Prior Informed Consent – the Surui

The Surui-Paiter of Rondônia, an indigenous group of approximately 1,300 people with legal rights to 248,147 ha in the Brazilian Amazon, have been on the vanguard of participatory, community-based REDD+. The principles of consultation, consent, and equity have been central to the process of planning and developing the Surui REDD+ project. Today, after more than two years of participatory consultation, planning, and project development, involving many community and leadership meetings, the project is on the verge of selling carbon credits on the voluntary market. In accordance with the 50-year plan established by the Surui, revenues will be shared equitably among the Surui communities.

*Source: Olander et al. 2010.*

Further, public consultation supports project and program design that is more effective because it is well-suited to relevant needs, opportunities, and barriers. At the same time, information dissemination, including training, enables various stakeholders to participate in PES with a full understanding of their rights, responsibilities, and options, enhancing the efficacy of PES projects. Civil society and international organizations can be key partners in this area, helping to disseminate information, conduct trainings, and facilitate stakeholder consultation.

### 2.5 Technical Support

#### Level 2 - Essential Aspects to Be Developed in Parallel with PES

- Ecosystem Services Inventory
- Methodologies for Measuring, Monitoring, Reporting, and Verification
- Registries
- Public Participation
- **Technical Support**

PES transactions are complex and, often, not well-understood. Stakeholders of all kinds may have little or no experience with these unique market interactions. The availability of technical support, whether through the government, civil society, or the private sector, is therefore a key aspect of a supportive institutional framework.

Technical support may be provided directly by the government, by civil society, by the private sector, or a combination of these. It can take a number of forms, such as trainings, information dissemination, or direct technical assistance during key phases of project development or implementation. Whatever the form or the provider of technical support, the government has a role in making sure that reliable support is available and accessible and that providers are accountable to PES participants for misrepresentations or fraud.

The government could, for example, enter an agreement with a private or civil society organization to provide trainings, information, or direct technical support. Building up relevant organizational capacity and providing basic information and trainings could be funded by the government. Direct technical support could be paid by PES participants out of future PES revenues. Of course, many other arrangements are possible.

The government may also have a role to play in organizing PES supply and demand. In nascent markets like those for PES, mismatch of supply and demand can be a big problem, with short-term implications for PES participants and potentially long-term impacts on market engagement. Where adequate demand and supply exist, it may simply be a matter of deal brokering – matching willing sellers with willing buyers – which may be done by the government or by a private entity. Or it might be a matter of queuing up sufficient supply prior to launching a PES initiative, or of getting the word out to prospective buyers or sellers so that they can opt-in.

In all cases, infrastructure to manage supply and demand can be useful to ensure that the most promising PES deals come to fruition, even where one or both sides is not initially aware that mutually beneficial opportunities exist.

### 3. Streamlining PES

Beyond threshold requirements and basic elements of the supportive institutional infrastructure, measures may be taken to streamline PES, maximizing overall returns and providing social and economic safeguards for PES participants.

#### 3.1 Refining and Expanding PES Infrastructure

##### Level 3 - Streamlining PES

- **Refining and Expanding PES Infrastructure**
- Facilitating International Investment
- Dedicated Tariffs
- PES Risk Mitigation

As PES experience grows and develops, it will become clear what additional changes are needed to the legal and institutional framework to streamline and facilitate more (or more desirable socially, environmentally, economically, or otherwise) PES transactions in a particular context. Additional investment may be needed, for example, in MMRV, registries, technical support, or other aspects based on barriers and opportunities for PES in that jurisdiction.

Assessing these needs and making additional changes is part of the adaptive learning process. Certain aspects of the supportive institutional framework must be present in basic form to begin to scale up PES, but can be refined and formalized in tandem with growing PES experience.

#### 3.2 Facilitating International Investment

If foreign commercial investment or purchases are meant to play a substantial role in funding PES, certain regulatory restrictions may be clarified or eliminated. For example, a government might:

- Simplify (or eliminate) foreign exchange controls that apply to credit transactions where payments are made in currencies other than that of the host country, as these highly jurisdiction-specific controls undermine transparency and may deter foreign investment.
- Simplify or provide clarity around foreign direct investment restrictions or special legal requirements for foreign investors.
- Provide clarity around credit-pricing controls, if these are used.

##### Level 3 - Streamlining PES

- Refining and Expanding PES Infrastructure
- **Facilitating International Investment**
- Dedicated Tariffs
- PES Risk Mitigation

Additionally, governments may simplify and/or provide clarity around the rules of the game in terms of special restrictions and rules for foreign investors.

Restrictions on foreign investors are likely to be very relevant for certain types of PES – carbon and biodiversity more than water, perhaps – that are well-suited to international deals. These restrictions can be politically attractive, particularly in terms of retaining domestic ownership and control over land and key industries and keeping PES profits in-country, and may be used as a safeguard against foreign speculation in land. Naturally, they also deter or prohibit a certain amount of foreign investment.

The balance between facilitating investment in PES and maintaining domestic control over resources and PES revenues is likely to be difficult and politically fraught. Whatever balance is struck, providing clarity around the rules will enhance transparency for PES in the country.

### 3.3 Dedicated Tariffs

Given sufficient political will and requisite legal authority, PES may be funded, wholly or in part, via revenues from resource usage fees or tariffs. Such fees or tariffs may be assessed on ecosystem service beneficiaries – such as water or electricity users, private developers, water or electricity companies, pharmaceutical companies, etc. – essentially creating a state-managed PES program based on mandatory contributions. Or fees or tariffs might come from an unrelated sector, but simply be diverted from general government revenues to specific PES purposes. This type of funding mechanism requires that the implementing government have necessary authority over planned taxes or fees and that implementation follows legal requirements.

#### Level 3 - Streamlining PES

- Refining and Expanding PES Infrastructure
- Facilitating International Investment
- **Dedicated Tariffs**
- PES Risk Mitigation

### 3.4 PES Risk Mitigation

Where a government is interested in expanding or scaling up PES, it may invest in measures that reduce or mitigate risks for project participants or for a PES program. Key risks associated with PES projects include:

- Leakage – the risk that negative ecosystem impacts will simply be displaced rather than mitigated or reversed overall. This is a systemic risk, though it may also be a risk for project participants to the extent that they are obligated to control leakage.
- Permanence – the risk that ecosystem benefits that are meant to be realized over the long term are suddenly lost.
- Project Performance – the risk that the project does not generate promised ecosystem services benefits due to poor design, intentional land conversion, encroachment on the project area, etc.

#### Level 3 - Streamlining PES

- Refining and Expanding PES Infrastructure
- Facilitating International Investment
- Dedicated Tariffs
- **PES Risk Mitigation**

Where these risks are too large, PES is unlikely to be an appropriate or effective instrument for achieving conservation goals. But where these risks are manageable, the government may provide support that reduces risks and related costs.

Leakage, impermanence, and poor project performance undermine ecosystem service provision and therefore pose systemic risks, as well as risks to affected participants. The buyer may have paid for goods or services that can no longer be delivered, or the seller may not be able to recoup expenses out of future revenues. Either party might be obligated to offset the loss, perhaps by purchasing “replacement credits” if such instruments are available. In addition to these risks, PES participants also face risks that arise any commercial context, such as the risks of market fluctuation or unfavorable policy developments.

To a greater or lesser degree, depending upon the context, PES risks can and should be managed by, and allocated between, project participants. However, a government that is interested in supporting PES can also provide or support risk mitigation and/or "pooling" of risk<sup>16</sup> to decrease participants' exposure to risks that are outside of their control.

<sup>16</sup> Risk pooling describes a mechanism whereby many individuals contribute money or PES credits into a single account, or pool, and may make a withdrawal to recover after certain, pre-defined losses (e.g., due to natural disaster). Insurance relies upon pooling of risks, but this mechanism can also be used outside of formal insurance instruments.

For example, the government might provide (or strengthen) a legal mechanism of servitudes or covenants attached to land to support long-term PES promises and associated benefits.<sup>17</sup> Formal insurance mechanisms, which can in theory be used to mitigate the risk that ecosystem services will suddenly be lost due to natural disaster or other Act of God, might benefit from early-stage government support or incentives. The government might also create (or support the creation of) pooled reserve accounts for credits for ecosystem service generation, which would provide a buffer in case of unintentional reversal of ecosystem service generation or leakage of negative ecosystem impacts beyond project boundaries. Pooling helps to lessen the impact and cost of risk mitigation measures (in this case by contributions to the reserve account) at the individual project level.

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<sup>17</sup> Greiber 2009.

## Concluding Thoughts

Legal and institutional preparedness are key to successful, equitable PES. What this means in practice – i.e., what is needed and feasible, what steps should be prioritized, and what the process should be for reaching preparedness – will depend upon the context.

Generally speaking, however, certain aspects can be considered threshold requirements for PES, such as the absence of a legal prohibition on these transactions, some level of supply and demand (which in turn requires minimum levels of governance and tenure rights), and a discernable regulatory regime. Beyond these threshold requirements, additional aspects of a supportive legal and institutional framework can be developed adaptively, alongside the growing experience with PES in the relevant jurisdiction.

Initially, governments wishing to expand the use of PES may borrow practices and methodologies from established voluntary markets to establish guidelines, best practices, or even regulatory requirements related to PES transactions. Doing so can provide a useful starting point, which will be modified in light of changing conditions, needs, and experience, at relatively low cost. The voluntary carbon market has experienced the most standardization and systematization among markets for ecosystem services, making it a potentially rich source of technical information and guidelines that can be adapted to suit local needs.

Also, removing perverse incentives and legal barriers is likely to be an important early step, to pave the way for positive interventions. Similarly, mapping and valuation of ecosystem services and ecological-economic priority setting will be a key building block for PES activities.

However, in outlining and discussing levels of legal and institutional readiness for PES, this booklet intends only to inform context-specific discussions of options and opportunities for governments to facilitate or encourage PES. The appropriate approach will vary significantly from country-to-country, or potentially even within a country. Needs will change from year to year. The framework provided here is therefore intended as a conversation starter, to flag important aspects of a supportive legal and institutional infrastructure for PES and to offer an analytical framework for approaching these issues, rather than a one-size-fits-all approach.

It is our hope that many new discussions are launched around investing in natural capital and the flow of ecosystem services.

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