

# Session 4: Establishing robust governance and institutional arrangements

**Successful PES schemes are underpinned by transparent institutions that allow all stakeholders to have their say**

## Institutional arrangements for PES: lessons and challenges

**Stefano Pagiola**

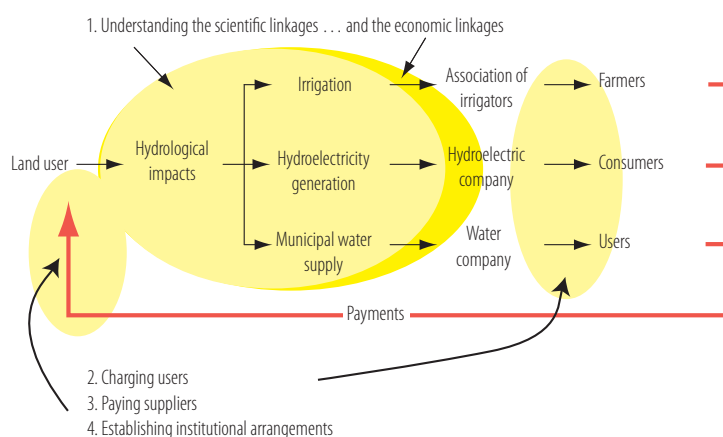
Environment Department  
The World Bank, Washington DC, USA

The issue of institutional arrangements is very important but often doesn't receive the attention it deserves. I will speak about lessons and challenges. I want to begin by defining what I understand as PES. It is a mechanism to improve production for environmental services in which:

- users pay for those services;
- providers are compensated for delivering those services;
- payments are conditional on the provision of the services; and
- payments are voluntary.

There are two types of scheme: those in which the users pay for services, and those in which a third party (usually the government) pays. This affects institutional aspects. Figure 4 shows, schematically, the logic and design of a typical PES scheme.

**Figure 4: PES—from theory to practice**



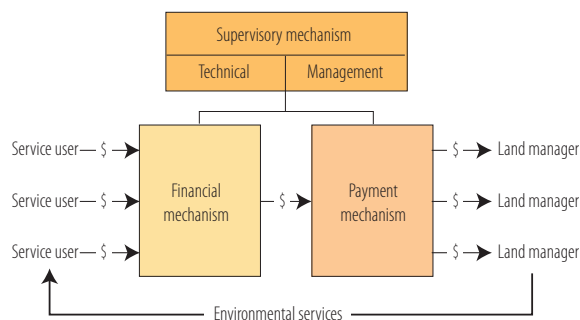
What is needed for the implementation of a PES scheme? Let's take an example of where a land use affects hydrological flows, which in turn affects users such as hydroelectric power schemes and agricultural irrigators. What we want is a mechanism so that land managers take into account their impacts on the downstream users of the environmental service, which in this case is the provision of good-quality water. So we need a system to charge the users of the service and then to pay that fee to land managers for their good management, which enables the provision of the service.

Such systems have three institutional components: a financial mechanism, a payment mechanism, and an overseeing mechanism (Figure 5). The financial mechanism collects payments and manages the funds, so we need business managers, accountants, information

technology specialists, and so on. The payment mechanism is logistically the most difficult, and the fieldwork is the most difficult and costly component of it. It requires outreach agents—people who go into the field and explain the process to those land managers who wish to participate in the scheme. They develop contracts with farmers, provide support and monitor implementation. The overseeing or supervision mechanism requires, among other things, technical specialists such as hydrologists, economists and ecologists to provide technical assistance, identify environmental services and those land uses that are eligible for payments, and monitor the impacts of management activities on environmental services. The supervisory mechanism also has a management component that carries out negotiations with the various parties and resolves issues.

**Figure 5: Components of a PES scheme**

Various organizational arrangements have been



used in PES schemes that are financed by the users of environmental services. An example of direct implementation is *Programa Procuencas*, in which water users pay a tariff to finance the program, which is administered by the municipal government. An advantage of this approach is that it is well adapted to local needs, but it requires that the local administration has sufficient capacity, and it works best in small or medium-scale programs.

A second approach is to subcontract an organization to implement the program. This is the case with the Water and Forest Producers (*Produtores de Água e Floresta*) program in Guandu, Rio de Janeiro, Brazil. In this scheme, all the field functions are performed by an NGO called ITPA, which has sufficient capacity as well as contact with the people. This approach is also well adapted to local needs, and it takes advantage of NGOs with appropriate technical and social networking capacity, where they exist.

A third approach is to establish a dedicated independent organization. An example of this approach is the Fund for the Protection of Water (*Fondo para la Protección del Agua—FONAG*) in Ecuador, which has been established to fund the management and conservation costs of watershed management to meet the water-supply needs of Quito.

This approach is well adapted to local needs, and its main advantage is that it isolates the scheme's finance from wider policy decisions.

A fourth approach is at the national scale, where local providers of environmental services enter into agreements with a national program, such as the PES scheme set up by the Government of Mexico. This sort of approach is cheap and easy (from an institutional point of view), but it has limited capacity to adapt to local conditions and therefore it may not always be what local people want.

**Lessons and challenges.** Don't underestimate the challenges of implementation—how to do the fieldwork and who will do it? This aspect is often underestimated. Learn from other experiences, but don't copy—every situation has unique characteristics. Adapt organizational arrangements to suit local conditions, and ensure they are flexible so they can be adapted as situations change.

## PES schemes must be part of a broader business model

### Guillermo A. Navarro

IUCN Regional Office for Mexico, Central America and the Caribbean, San José, Costa Rica

In Costa Rica, forest owners gave up certain rights on what they could do with their forests, and in exchange society agreed to compensate them on the basis of the opportunity costs they would incur. The first amount calculated for the PES scheme was based on the calculation of the opportunity cost of cattle ranching, but this amount has evolved through the political negotiations of interest groups.

The PES scheme is a fiscal mechanism; everyone pays, and if you don't pay you are punished. The main sources of funding for the scheme are a fuel tax and a water tax that are not voluntary. There are still many free-riders, such as the ecotourism and bio-prospecting industries, which are not contributing through a fiscal mechanism to the PES scheme.

If you consume, you have to pay. The PES scheme is not based on a market mechanism, in which the amount paid (the price) is the product of supply and demand. The PES scheme, as a fiscal mechanism, uses the majority rule for allocating resources. FONAFIFO has a board of directors, which decides, by majority rule, where and how payments are made, and who gets them. The mechanism has been successful in recovering the forest, and there have been efforts for the equitable distribution of funds towards poorer areas of the country, as well as to women and indigenous communities. There are some institutional challenges, however—almost 90% of the funds are paid for protection, and most of this money is used as consumption money; it generates very few co-benefits in forestry and is not part of a larger business model that would help develop the forest sector.



A 10-year-old plantation of klinki pine (*Araucaria huesteini*) at Finca Orosi, Santa Cecilia de la Cruz, Guanacaste, Costa Rica. The next generation of PES schemes must be part of broader forestry business models. Photo: G. Navarro

In Costa Rica, the National Comptroller General has instructed FONAFIFO that the PES amount should be calculated based on the opportunity cost of the land rent; that is, the difference between the net rent for the forest land use and for the most likely competing land use. So payments are high for conservation (where there is no other cash flow). The difference in the values of these two land rents is the marginal cost that would compensate the landowner in exchange for producing the additional environmental services produced by the forestland use.

Moreover, this opportunity cost will vary depending on where the forest is located in the landscape. Land rents are determined in part by the cost of accessing markets, and these costs increase as we move away from the market; this is the von Thünen principle. Payments for forest environmental services will be higher close to populated areas because forests will have higher opportunity costs there due to the greater intensity of land use, which uses more capital and labour. On the other hand, PES for forests will be lower further away from populated areas, where the opportunity costs are lower and land uses have increasingly marginal land rents.

If we have to compensate the forest against banana or pineapple plantations close to the market, we have to pay around US\$400 per hectare per year. But if you move 15 km from the market, the only opportunity cost of forest as a land use is that which is incurred by the displacement of cattle ranching (because pineapple plantations and other intensive cultivation are not profitable at that distance from the markets for inputs and products). The opportunity cost is low, so the compensation can be lower. At a distance of 30 km there is no opportunity cost. This approach will help FONAFIFO to optimize the use of fiscal funds and to orient and prioritize the efforts of conservation based on the real

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risks of land-use conversion due to higher opportunity costs and the value of environmental costs.

On its own, however, PES is not enough to conserve forest and maintain human well-being. The next generation of PES schemes must be part of a forestry business model. To bring PES into a sustainable business model, it must be part of a coherent forest development policy package, which involves:

- improving the business climate by reducing transaction costs and technological and political risk, as well as providing investment security;
- simplifying regulations so they protect the public interest but otherwise allow the market to determine outcomes;
- developing sound technological packages that integrate the forest, industrial development and markets;
- paying for environmental services on the basis of performance;
- promoting entrepreneurship and competition along the value chain; and
- ensuring there is adequate environmental education so the public knows the importance of consuming forest goods and paying for forest environmental services.

If the business model is sound, the value of the land goes up, transaction costs go down, forestry as a land use becomes more viable, and PES schemes are more likely to be effective.

Even supposing you can design a good PES scheme embedded in a sound forest business model, we still have the challenge that it could be ineffective in the context of a landscape in which there are high agricultural subsidies—many times higher than the funds offered by the PES scheme. This is the case in Mexico, where, according to Mexico's Secretariat of Finance and Public Credit, more than 200 subsidies are directed at rural development; of those, 90 are programs involving direct payments to farmers, but only 22 are directed to natural resources, and they have a financial weight of only 1.71% of the total subsidies for rural development. Thus, there is a need to align food security and social subsidies with PES. Subsidy schemes should be revised so they do not encourage agriculture in marginal areas at the expense of forest. Moreover, on the international stage, other policy instruments that are not PES are being developed to counter the role of commodity consumption in European countries as direct causes of deforestation in the form of sustainability criteria, forest footprint labelling, and increases in import tariffs. These new kinds of policy options can help revise and reduce agricultural subsidies and make PES schemes more effective.

## Building PES institutions at the municipal level in Guatemala

### Mario Martin Velasquez Villatoro

Instituto Nacional de Bosques, Guatemala City, Guatemala

Guatemala's National Forest Institute (*Instituto Nacional de Bosques*—INAB) is a public-sector entity in charge of forest policies outside protected areas. We provide technical assistance to those people who make use of the forest. The Forest Incentive Program (*Programa de Incentivos Forestales*) was created about 15 years ago to provide economic incentives, in the form of cash payments, to forest owners or managers for good forest management, reforestation and forest protection.

In 2010 we started to direct part of the funds from the Forest Incentive Program to the creation of institutional arrangements for PES schemes at the municipal level. This was good in theory, but in practice it has been complicated. We brought together all the main stakeholder groups: INAB, communities, municipalities (which sometimes are forest owners), international cooperation agencies (whose financing has been important), and the private sector, which are often the ones making use of the resource and who are also among the major beneficiaries of forest environmental services. We have tried to bring all these groups together to set up a PES scheme.

A key aspect has been transparency. All stakeholders must be aware of who is contributing funds (and other resources, such as labour), and how much is being contributed and how it is being invested. To achieve transparency, local boards have been created, involving the various stakeholders.

**Lessons.** The government's Forest Incentive Program has been a driver of the municipal PES schemes. Without it, the PES schemes would not have got off the ground, so we continue to maintain those incentives. We have to involve all the stakeholders who have an interest in PES—leave someone out, and the scheme will not move forward. Some beneficiaries cannot provide cash but can supply labour (e.g. for firefighting or reforestation); it is important to take this into consideration.

**Challenges.** One of the biggest longer-term challenges is establishing institutional arrangements at the municipal level that are not susceptible to political changes. How can we ensure that decisions are not reversed when the government changes?

## Yokohama's 100-year-old PES scheme

### Hironori Nukui

Water Resource Forest Management Office, City of Yokohama, Japan

In the early twentieth century, the City of Yokohama relied fully on water from the Doshi River, but the upstream forest commons were becoming degraded due to harvesting for fuelwood. To secure water for its citizens, the City purchased 2780 hectares of upland forests in 1916, at a cost of 5.24% of its budget. The Water Resource Forest Management Office was established in 1917 and forest restoration work started in 1919. The forests were designated as protection forests under the Forest Act.

The City now owns one-third of the Doshi catchment (2873 ha). The objective of our forest management is to sustain the quality and quantity of water from the river and thereby to secure drinking water for the citizens of the city. As you are fully aware, planted forests require continuous care. We are carrying out thinning in our planted forests. Thinning increases





Employees of the City of Yokohama carry out careful thinning operations in the Doshi catchment. Thinning increases light in the forest, induces natural regeneration and improves soils; as a consequence, it enhances the capacity of the forest to conserve water.  
 Photo: H. Nukui

light in the forest, induces natural regeneration and improves soils; as a consequence, it enhances the capacity of the forest to conserve water.

The total expenditure of the City was US\$2.5 million in 2012 (about US\$0.68 per resident), all of which was generated by a water levy paid by water users. This levy ensures sustainable and predictable funding from the beneficiaries. It funds the management of the publicly owned forests in the catchment, and also supports private forest owners in the catchment to improve their management. To support such activities, the City has established a fund comprising donations from citizens. The overall result today is a highly functional forest that has supplied the City of Yokohama with high-quality drinking water for nearly 100 years.

The elements of a successful PES schemes include:

- a legal and institutional framework to ensure sustainable and predictable funding from beneficiaries;
- institutional and technical capacity to implement proper forest management;
- benefit sharing with local communities to support their livelihoods and ensure their contribution to forest management; and
- the promotion of awareness-raising among beneficiaries about the environmental services provided by forests.

### The stable governance table

**Carmenza Robledo**  
 EcoExistence, Zürich, Switzerland

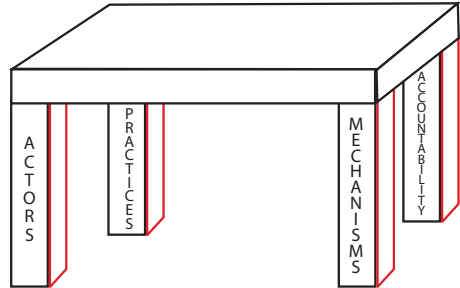
Yesterday afternoon we were asked about success factors for PES: I believe that the answer is governance. The success or failure of any PES scheme rests with governance. Let me explain what I understand as governance. The United Nations Development Programme defines it as:

... a neutral concept comprising the complex **mechanisms, processes, relationships and institutions** through which citizens and groups articulate their interests, exercise their rights and obligations and mediate their differences ... It includes **the state** (at its different levels), the **private sector and the civil society** [author's emphasis]

PES schemes take place within existing governance settings. These governance settings can be at multiple levels—global (e.g. the afforestation/reforestation projects in the Clean Development Mechanism are regulated by agreements under the United Nations Framework Convention on Climate Change and the United Nations Convention on Biological Diversity), national (e.g. Costa Rica's PES scheme), and subnational and local (e.g. PES schemes in Colombia and Viet Nam).

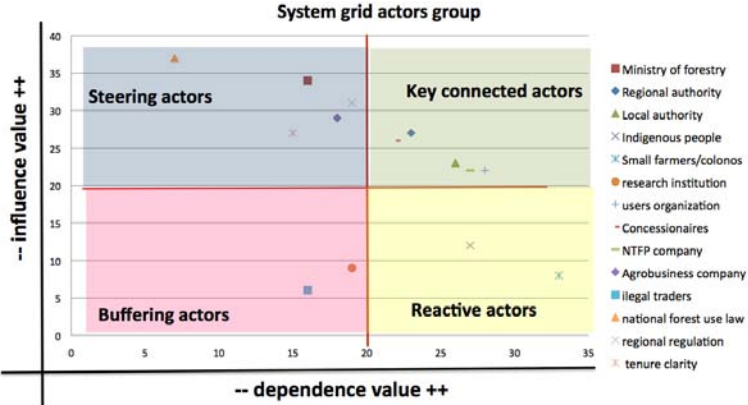
What do we need for good PES governance? I propose an analytical framework “governance table” with four “legs”—actors, practices, mechanisms and accountability (Figure 6). These “legs” constitute the main elements to be clarified for securing good PES governance.

Figure 6: The governance table



The first elements are the actors. Who are the actors, or stakeholders? What is the role of each? At this meeting we have talked about civil society and indigenous communities as providers of environmental services, and to a lesser extent we have also discussed the role of the state. All sectors of society can be important for ensuring good governance of a given PES system. Thus, it is necessary to characterize the roles of different actors. Figure 7 shows an example of the characterization of a social system; it was done in a participatory manner and using actor impact analysis (as defined in the REDD-FORECA [Forêts Engagées comme Réservoirs de Carbone—“Committed Forests as Carbon Stocks”] toolkit). Other methodologies for social characterization are available in ITTO partner countries.

Figure 7: Example of a characterization of PES actors



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The second element or “leg” of the governance table is forestry practice. What will happen in the forest (e.g. protection, or reduced-impact logging)? What environmental services do these practices provide or secure? What are the management objectives and practices? What are the costs over time? What investment is needed now, versus what will be required in five or ten years? What are the responsibilities and liabilities of each actor over time? Can management accommodate wood and non-wood forest products, as well as environmental services? The forest management plan needs to set out who will do what, and when.

The third “leg” of good governance comprises the mechanisms. The first aspect that needs to be clarified when designing the mechanisms for a PES scheme is the *ownership* of the environmental service. In real life, such ownership is not always clarified to the extent needed for a buyer/payer. For example, we worked in Uganda with women who are planting trees. The Ugandan Constitution says there should be a balance between men and women, but women are traditionally not allowed to own forest property. Women were planting trees, and I talked to them and their husbands about who owned the trees, and they didn't know; however, when they started producing income, the ownership transferred to the men. There is a lack of clear documentation about the ownership of the environmental services provided by these trees. In the San Nicolas project in Colombia, although property rights were clear in over 90% of the parcels, only a few parcels were properly registered. In this case, although property was clarified, the proof required by the (international) service buyer was not available. How does a company purchase an environmental service if it doesn't know who the owner is? Companies need to be sure.

Besides clarifying ownership of the environmental service(s), a PES scheme needs to set clear rules for the making of payments or compensation. What exactly will be paid for, and with what (such as US dollars for an amount of biodiversity secured, or training for X hectares conserved)? What is the means (money, or compensation in-kind)? What are the payment modalities (ex-ante or ex-post)? How will the mechanism for sharing benefits work? Finally, what is the mechanism for deciding on failure? Who is liable for what, and under which conditions?

The fourth “leg” of the good governance table for a PES system is accountability. This refers to how and when to account for environmental services in order to monitor progress. Specifically, I refer here to accounting methods and practices that enable a transparent, understandable and feasible monitoring system. The first thing to clarify is the unit in which the environmental services included in the PES system will be counted. The conservation of biological diversity, water quality and greenhouse gas



*Campeſinos meet to learn about and discuss a PES scheme in the San Nicolas catchment, Colombia. Identifying the stakeholders, and their roles, is essential for the good governance of PES schemes. Photo: C. Robledo*

emissions are measured using different units. Once the unit is clear, what needs to be measured, when, how and by whom, must be clarified.

To summarize, good governance is essential for securing the success of a PES scheme. A clear design is needed to promote the good governance involving the four legs of the governance table: actors, practices, mechanisms and accountability.

### Providing incentives for environmental services in Acre

#### Monica Julissa de los Rios de Leal

Institute for Climate Change, Rio Branco, Brazil

Our challenge in Acre is to conserve the state's 87% forest cover while also alleviating poverty. We are still one of the poorest states in Brazil, so talking about conservation sometimes seems contradictory.

The State of Acre has an integrated vision of its landscape, and it has worked hard to develop a robust approach to PES. The vision is of a constant improvement in quality of life for the state's 800 000 people while continuing to provide forest environmental services.

The state's first experiment in PES was the Chico Mendes law, which created subsidies for rubber production in natural forests. A range of public policies was designed to solve problems that might lead to deforestation, with three main axes. The first is territorial—that is, resolving land ownership. The second is monitoring and control; and the third is the creation of a forest-based economy. The policies and laws adopted by the state in the last two decades enabled an in-depth dialogue with local stakeholders and society on payments for greenhouse gas emission reductions and to reach an understanding that government needed a state policy that promoted environmental services without direct payments. In this way we created State Law 2,308/2010 (State System of Incentives for Environmental Services—SISA), which establishes principles, policies, institutions and instruments for the provision of environmental services through incentives rather than payments. Payments are vulnerable—they might stop at any time, and, once they stop, the forest users may also stop maintaining the environmental services. SISA is also designed to promote public-private initiatives to achieve the state's goals with respect to environmental services.

In establishing SISA we have explored many of the governance aspects mentioned by Carmenza. SISA articulates the concept of environmental-



service providers, which goes to the ownership of carbon. It also introduces the concept of beneficiaries, establishes principles for deciding on programs for environmental services, and allows for the creation of economic mechanisms that could be used to implement the system. SISA sets out the role of government and civil society in regulating and monitoring policies on environmental services and climate change through the State Commission for Validation and Monitoring. There is also an indigenous working group to ensure that the needs and concerns of indigenous peoples are taken into account. This all sounds nice, but it is very complex.

Acre is pursuing an integrated jurisdictional program in which we are striving to change the development model to one that simultaneously delivers economic growth, human development and conservation. We want to value the forest by consolidating the forest-based economy and a culture of living with the forest. Policies to promote environmental services need a long-term perspective—it takes time to bring about such a change, and SISA includes arrangements designed to promote long-term incentives rather than a payments-based approach, which may not be sustainable in the long term. While the incentives are not monetary, they provide benefits in the form of support and subsidies to encourage actors to change their production practices to more sustainable systems. The technical, institutional and legal frameworks of PES schemes or incentives programs need to address these challenges. SISA was possible because the governance tools and legal framework for environmental and land management had been established in the previous decade or so.

## Comments from the floor

- Responding to Carmenza's Ugandan example, I would say you can't force cultural change down people's throats. We need mechanisms that enable men to understand why women need a space in which to operate. There are successful examples where you recruit the household—you don't have to decide who to pay because you pay on the basis of a household plan. When implementing PES, we should not view traditional norms as entirely negative and we should make the process as inclusive as possible.
- Stefano defined PES as something voluntary. There are some considerable costs involved in monitoring, and PES can be very expensive, so it cannot remain at a voluntary level. I imagine it the other way round, where states compel large users to pay environmental service providers.
- **Stefano's response:** the ideal PES situation is always for it to be voluntary. What we want is as close as possible to a normal transaction, such as when a farmer sells a kilogram of corn. Voluntary schemes have certain desirable qualities, such as an incentive to look for the best price, and to make sure you receive what you pay for. In mandatory schemes, however, the incentives structure deteriorates. There are cases where a mandatory element may be needed, but we have to manage it carefully.
- When talking about environmental services and their sustainability, I see it as a balance. We have someone who provides and someone who pays. If one is missing, it becomes unsustainable. I have visited many PES projects involving payments for water, but many downstream users are not included in the scheme. I want to include those downstream users.
- We have heard much about carbon. Yet there is reasonable evidence that rainfall in many areas in Latin America depends on recycling of water from the Amazon—do we expect payments from Argentina to pay for the environmental services provided by the Amazon? We are starting to understand such continental-scale environmental services, but we don't have the governance mechanisms to discuss this at a continental scale.
- I have never seen a PES scheme that works among countries in a region because the regulatory agency doesn't exist to monitor the scheme. The examples we have seen at this conference reinforce the long period between the idea and its implementation—often a decade or more.
- Donors typically provide money for 3–5 years and want results very fast. One of the schizophrenic things is that we don't take into account the time needed to create the governance structure we need to implement schemes so they are effective and are able to deliver the results the donors want.
- Forest degradation (and restoration) should be accounted for on government balance sheets, just like built assets are depreciated. But it's not a magic bullet for protecting environmental assets—having a value on paper does not necessarily stimulate action. The mechanisms we are talking about here are more likely to stimulate action on the ground than accounting.



A rubber-tapper in Acre, Brazil. The state's first experiment in PES was the Chico Mendes law, which created subsidies for rubber production in natural forests. Photo: R. Guevara/ITTO