

## Payments for environmental services: what is good practice?

Payments for environmental services (PES)—also known as “payments for ecosystem services”—have become increasingly popular worldwide over the last two decades. However, the vast majority of these experiences have been outside of Europe. Various PES-like initiatives exist in Europe, fulfilling some but not all of the PES criteria. While most PES globally are forest-focussed, in Europe and other industrialised regions agri-environmental schemes dominate.

Why have PES emerged much more in some regions (the Americas, Australia) than in others (Europe, Africa)? What can Europe learn from more advanced regions? Are there important in-country differences in PES preconditions? And, how can policymakers better address and adapt to these differences?

To answer these questions, we draw on state-of-the-art knowledge about global PES experiences to explore the pre-conditions (Section 1), design and implementation (Section 2), and contextual factors of PES in Europe (Section 3). We seek to provide a systematic, yet accessible overview of best practices in PES, and their environmental impacts (Section 4). From that basis, we tentatively examine under what circumstances PES could also be implemented more successfully in Europe (Section 5).

### Key messages

- 1. PES have the potential** to be direct, flexible, and effective instruments.
- 2. Flaws in design and implementation** limit PES from unfolding their potential.
- 3. Targeted interventions**, differentiation of payment and improved enforcement can help meet challenges.
- 4. Political will** to boost environmental objectives is needed.
- 5. Future role of PES** could be increased by Common Agricultural Policy reform and/or recognition that regulation alone cannot deliver the ecosystem services needed by service users and societies.
- 6.** Several sub-scenarios (climate change induced weather anomalies and catastrophic events) could influence a **higher private willingness to pay**.
- 7. European forest-based, broad-scaled PES** are likely to be complex and multi-faceted.
- 8.** More **research is needed on forest landscape reconfigurations** in response to new environmental challenges, and on how economic incentives can support necessary transformation.

## 1. Preconditions for PES

A few key PES-enabling conditions stand out from our research:

### ■ **i) Strong and stable ES payment vehicle needed**

PES financing is by definition based on voluntary willingness to pay (WTP). As such, sufficient WTP by environmental service (ES) users and a pre-identified stable payment vehicle—who will make continuous contract payments?—seem also to be the main obstacles for emerging PES initiatives in Europe. In European societies, safeguarding the provision of ES is often predominantly seen as a public responsibility, which thus limits private WTP.

### ■ **ii) Opportunity costs cannot be excessive**

How much to pay is the other side of the economic equation. The value of payment for ES must cover landowner opportunity costs of PES, i.e. how much potential income is lost by foregoing lucrative, but environmentally degrading land uses. That is, ES providers' minimum willingness to accept PES needs to be achievable. Notably, at the agriculture-forest frontier of many developing countries, some high-value commodities (e.g. oil palm, soybeans, perennials) may yield such large per-hectare returns that PES cannot match them. In Europe, this balance is situation-specific, depending on where ES originate, e.g. on prime vs. marginal agricultural or forestlands. With much rural land abandonment and forest regrowth occurring across Europe, the opportunity costs on marginal lands are typically low.

### ■ **iii) Implementing agency must be legitimate**

First, ES users have to get their act together to engage in a user-financed PES; alternatively, their public-sector representatives must take initiative for a government-financed PES programme. The implementing institution—in Europe, typically an intermediary, or a government agency—must be seen as legitimate, especially by ES providers. This confidence may not always pre-exist, and the process can thus entail lengthy trust building between the parties involved.

### ■ **iv) Clear property rights to land must exist**

ES providers must have at least the right to exclude outsiders from entering or acting on their forestland in ways that might endanger ES delivery. This is a killer assumption for PES in many settings with poorly developed institutions, such as in tropical forest frontiers. In Europe, with more consolidated land tenure systems, this factor plays less of a role—except perhaps for those cases with public landownership, where PES are usually not the preferred solution.

While the PES principle may appear simple, PES is an institutionally demanding tool. This implies that, although there may be a clear economic argument for PES, in some scenarios of institutional backwardness or collective action problems, PES will not emerge.

The basic economics of PES (i and ii) thus seems to constitute a hierarchically dominant precondition. When the institutional preconditions (land tenure and ES user/intermediary institutions) are not met, PES implementation might still be enabled by supplementary actions, such as land tenure reform, contract negotiation, or institutional capacity building. In turn, when willingness to pay for and to accept PES do not match, PES will not emerge.

## 2. PES design and implementation

In general, three lessons to implementers stand out from our global literature review:

### ■ i) Participation needs to be targeted to high-ES/ high-threat areas

ES distribute unequally in space, and so do the threats against them. Adverse selection biases abound at various levels. Implementers often go for the low-hanging fruits of low-threat areas for starting PES programmes. The first landowners to apply for PES are typically those who would environmentally comply even without PES. Low additionality, i.e. low incremental impacts from PES, thus constitutes the largest challenge worldwide for PES programmes today. Spatial targeting is the single-most important PES design issue to address. Europe's performance here is probably about average: some targeting to areas with high-density ES and/or to areas that face salient threats is clearly occurring, but there is also still much room for improvement.

### ■ ii) Make payments cost-efficient

Costs of ES provision often vary much across landowners, but in ways that are not fully known by environmental agencies or ES buyers. Mechanisms and proxies used to diversify payments so they better align with the distribution costs can result in massive efficiency gains. In Europe, as in other high-income regions, more payment diversification exists than in the global South. Again, much more can still be done to increase cost efficiency.

### ■ iii) Non-compliance needs to be monitored and sanctioned

PES implementers around the world often shy away from sanctioning non-compliance, even when detected through monitoring. They probably often do so out of fears to lose long-established social capital with rural communities, or to lose votes, when government-financed PES are concerned. Conditionality—the defining feature of PES—is thus, de facto, often not seriously enforced. It should not be a surprise then that PES do not always work optimally. In Europe, very little is known about the degree of non-compliance and moral hazard in PES and PES-like schemes. The matter deserves increased attention.

## 3. Contextual factors shaping impacts

Beyond design, many contextual conditions influence the environmental impacts of PES:

### ■ i) Adequate policy mix

PES are seldom the only game in town; they tend to be applied jointly with other environmental and non-environmental interventions that affect resource use. PES are thus not strictly an alternative to regulation and protected areas ('fortress conservation'); incentives and disincentives may work together well. In Europe, particularly the relation to the Common Agricultural Policy remains a key coordination issue for PES interventions.

### ■ ii) Motivation crowding effects likely to be small

Recipients of PES will supposedly be positively motivated by the incentives they receive to carry out specific pro-environmental actions. Yet, sometimes the opposite can occur: PES may 'crowd out' pre-existing intrinsic, non-monetary motivations, i.e. provision of ES from landowners who just 'want to do the right thing'. In most empirical settings, altruistic motivations seem to remain unchanged; PES crowding-out is probably more exceptional.

■ **iii) Magnet and rebound effects are small**

PES interventions do affect local income generation and rural development dynamics. If they were to create large income gains among local ES providers, this might attract immigrants ('magnets'), and trigger additional resource consumption ('rebound'), both of which might cause new environmental pressures. In Europe, this has not been a key factor—probably because PES has not raised rural incomes so much for the two effects to play out.

■ **iv) Leakage effects little known, but maybe exaggerated**

Tight environmental budgets typically mean that not all targetable land areas can be enrolled in PES. Pressures could thus partially 'leak' from enrolled to non-enrolled ones. Leakage can diminish overall environmental impacts, although for small interventions and high-value commodities, impacts can be larger. This is especially relevant for globally targeted ES, such as mitigating forest-based greenhouse gas emissions, but it is also a natural reaction of rational economic agents. For Europe, leakage issues have not yet been well-researched.

■ **v) Solid linkage between land-use proxy and ES needed**

Most PES contracts are coined in terms of outcomes—i.e. land-use proxies, such as amount of forest cover—instead of proper impacts, such as carbon stocks or biodiversity levels. In the longer term, linkages between proxy and ES must be verified. Sometimes, contracts can also be linked to both proxies and ES impacts, or directly the latter. Research on agri-environmental payments in Europe shows that more performance-based payments can increase PES impacts.

■ **vi) Low transaction costs**

PES systems may be fairly costly to establish (lengthy negotiation processes, possibly need for setting up new institutions), while being economical to operate once they are up and running. In Europe, many government-financed schemes seem not to have excessive transaction costs.

■ **vii) Permanence seldom realistic**

What happens after payments end? As theory tells us, most land use and ES effects naturally dissipate when PES end, if the underlying environmental problem persists: you only get what you pay for, as long as you pay. An exception are PES designed explicitly as adoption subsidies for new technologies that, once in place, become profitable in their own right. But a continuous payment vehicle (e.g. water fees) can also allow for payments to last. In Europe, agri-environmental schemes hold examples of both transitory and permanent impacts on ES provision.



## 4. PES impact evaluations

How do we know what really works? Quantitative impact evaluations, though still incipient, have been rapidly expanded globally over the last decade. Rigorous impact evaluations construct business-as-usual scenarios about what would have happened without the intervention, so they can plausibly attribute impacts. Europe is markedly behind the curve in terms of making use of rigorous impact evaluations for environmental interventions.

For PES, rigorous impact evaluation studies exhibit a wide variation in land-use outcomes, even when applied to different subregions for the same PES programme. This underscores the importance of local contexts for environmental results. Many PES schemes have been carried out in low-threat environments, thus harvesting low-hanging conservation fruits—but when compared to matching low-threat baseline scenarios, their attributable impact is low. However, for other conservation tools (e.g. protected areas, certification), similar low-threat area selection biases prevail. PES are comparatively still doing fairly well—apparently a bit better on average than protected areas—but not as well as arguably they could, if some design errors were corrected.

## 5. Considerations for Europe

Overall, PES have the potential to be direct, flexible, and effective instruments, providing also fair rewards to landholders. But several flaws in design and implementation patterns have so far often limited PES from unfolding that potential. More spatially targeted interventions, payment differentiation and improved enforcement of conditionality are key to help meet these challenges. This also requires political will to seriously boost environmental objectives, including in PES government-financed schemes that typically respond to multiple concerns.

As mentioned, Europe has clearly been a laggard in PES implementation. This is less explained by structural–institutional factors: Europe is fairly similar to the USA and Australia, where PES indeed have been used much more. In Europe, the prevalence of large protected areas, extensive regulations, and the existence in some parts of large state forests and fragmented private forestlands, often occupied by smallholders with a large degree of absenteeism, are certainly part of the explanation. However, there is arguably insufficient private willingness to pay, with a societal vision that the environment and ES provision are generally a public responsibility, hence with a predominant role for regulatory approaches. This societal legacy has likely limited the perceived need for, and eventual adoption of PES.

However, PES could have an increased future role either through reforms of the Common Agricultural Policy (i.e. new forms of public PES), and/or through an increased realisation on behalf of private actors that regulation alone is unable to deliver the full suite of ecosystem services that service users and societies need (i.e. more user-financed PES).

For a higher private willingness to pay to materialise, several sub-scenarios could become influential. First, climate change could continue to increase the frequency of weather anomalies and catastrophic events, such as droughts, wildfires, stormflows and flooding. This may also increase European societies' demand for environmental adaptation and mitigation—perhaps to an extent that financially pressurised public environmental agencies might not always be able to deliver. It would thus become increasingly clear to European citizens that they also need to privately pay for a set of ES that are becoming crucial bottlenecks to their welfare.

In other words, while there are good structural explanations of the current scarcity of PES initiatives in Europe, it is also possible to imagine a series of future game changers—with climate change arguably lining up as a root trigger. For forests in particular, unlike the tropical PES focus on unanimously increasing forest cover, European forest-based, broad-scaled PES would likely look more complex. They would imply to some extent the conservation of open landscapes and mosaics, sometimes even paying for keeping forest regrowth at bay, or to curb biomass accumulation to reduce wildfire risks—all vis-à-vis business-as-usual expansionary forest transition paths, i.e. rural abandonment with spontaneous natural forest regeneration. More research will also be needed to determine which forest landscape reconfigurations could most effectively respond to a new set of environmental challenges, and how economic incentives can best be used to help push for the needed transformations.

