

Applying Payments for Ecosystem Services (PES)

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Abstract

Incentives offer an important means of influencing decisions pertaining to the management of land and other natural resources, which may protect or enhance the provision of ecosystem services. Incentives or “nudges” can be defined as the offer of a reward before performance of a behaviour, which is designed to induce a desired behaviour. Incentives may take many forms from the financial to the reputational. Similarly, disincentives threaten some form of punishment if behaviour is performed. These may for example, include taxes, agri-environment schemes and private Payment for Ecosystem Service schemes. There is some debate about the economic basis for incentives designed to support the provision of ecosystem services, and a growing recognition that monetary incentives can only influence behaviour to a certain extent. To be successful, monetary incentives must be integrated with other types of incentive and designed with an appreciation of principles from behavioural economics and social psychology. This literature questions the rationality of decision-making processes, instead emphasising the role of emotion, habits, customs and concerns about issues such as social justice. It suggests that to be successful, incentives need to tap into people’s “more motives”, for example being accepted by others and belonging to a group, having a sense of control over personal outcomes and self-enhancement. This is not to say that monetary incentives are not important. In the context of managing ecosystem services, there is evidence that monetary incentives are crucial in influencing land management decisions. However, monetary incentives do not operate in isolation from other, primarily social incentives. A range of other tools may be necessary to develop and implement incentives. For example: valuation tools may help establish appropriate incentive payment levels; futures tools may be used to explore the likely effects of proposed incentive schemes; and through stakeholder engagement it may be possible to design incentives so that they are attractive to land managers and likely to achieve widespread uptake.

What is PES?

'Payments for ecosystem services' (PES) is a market-based instrument which can help bring into mainstream thinking and planning the values that the nature provides to society. In essence, a PES scheme is a market created to enable the 'suppliers' (or 'sellers'/'vendors') of ecosystem services to be paid by the 'users' (or 'buyers') of those services.

Markets for some services are well established, for example food production and water service charges. Other markets are emerging, including for example markets for carbon sequestration as a contribution to the service of climate regulation or 'visitor payback' as a mechanism for tourists to contribute to management of the environments they visit. However, most of the benefits that nature provides to society lie outside market structures, many of them assumed to be 'free', and so the management of ecosystems doesn't always work to ensure their continued protection or supply.

The benefits of PES

PES schemes:

- Formally recognise elements of the value of the natural world;
- Attract additional investment into the natural environment to secure or optimise a range of benefits;
- Improve the targeting of existing funding streams, for example agri-environment or visitor payback schemes; and
- Some PES opportunities may offer the potential for more cost-effective business solutions, as for example in the case of catchment-scale incentives to protect raw water quality rather

than reliance on often more expensive end-of-pipe solutions to treat more contaminated water at the point of abstraction. Another example is 'green infrastructure' in urban areas to achieve multiple benefits such as management of floodwater, pollution control, provision of green spaces, support for biodiversity, trapping fine airborne particulates, etc.

Therefore, whilst some PES schemes may focus on markets for single services, there are various means for amalgamating these markets to ensure that ecosystem management optimises benefits to multiple constituencies of society. Broadly there are two approaches to this: bundling or layering (described in the Box below).

Box 1: Bundling or layering ecosystem services

Bundling in PES is defined as grouping multiple ecosystem services together in a single package to be bought by individual or multiple buyers. For example, you could bundle carbon, water quality, biodiversity, visitor benefits and wildfire risk benefits together in a single scheme designed to pay for peatland restoration.

'Layering' (also called 'stacking') refers to schemes where payments are made independently for different ecosystem services provided by the same ecosystem. For example, the same peatland restoration project could run a carbon offset scheme in parallel with a scheme in which water companies pay for water quality benefits, whilst taking in additional money from a visitor payback scheme.

Sometimes it is not possible to capture payments for all the co-benefits of a PES scheme. This is often referred to as 'piggy-backing', where payments for management to achieve one ecosystem service outcome leads to the production of additional services 'for free'. Those who then benefit from these additional services without paying for them are referred to as 'free riders'.

'Bundled' PES schemes are better able to take into account the complexity and inter-connectedness of both ecosystems and the solutions that ensure their functioning than are 'layered' schemes. However, with effective co-ordination between layered schemes, it is possible to avoid the worst trade-offs between ecosystem services and promote synergies between services. Where there are multiple buyers with very different interests, layered schemes may be able to tailor marketing to specific buyers more effectively than bundled schemes, and obtain more funding per unit area.

Key principles of PES

Some of the key principles of PES include:

- Voluntary: stakeholders enter into PES agreements on a voluntary basis¹;
- The 'beneficiary pays principle': payments are made by the beneficiaries of ecosystem services, which may comprise individuals, communities, or businesses and/or government bodies acting on behalf of a range of beneficiaries (such as reinvestment of customer charges by Water Service companies or the recirculation of taxation to protect heritage and/or ecosystems);
- Direct payments: payments are made to the providers of ecosystem services, although in practice these payments are often transacted via an intermediary or broker;

¹ Wunder S (2005) *Payments for environmental services: Some nuts and bolts*. CIFOR Occasional Paper No. 42, Center for International Forestry Research, Bogor, Indonesia.

- **Additionality:** payments are made only if actions beyond those required by statute are sought from the managers of natural resources;
- **Conditionality:** payments are made on the condition that the desired ecosystem service is actually delivered, or more commonly that actions presumed to achieve their delivery are undertaken;
- **Permanence:** management interventions should not be readily reversible; and
- **Averting leakage:** actions undertaken within the PES scheme should not simply result in loss or degradation of ecosystem services outside the target area.

Application of PES

In practice, PES mechanisms tend to be diverse, addressing a wide range of ecosystem services as well as a range of key players – buyers, sellers, intermediaries and knowledge-providers – in the market. PES therefore represents a useful and innovative new approach to the conservation of the natural world and the protection of key beneficial services.

However, PES is not a panacea. It is merely one tool in a far larger kit to address implementation of the ecosystem approach in practice, and should be used only where it facilitates this process. It is above all important to ensure that markets for single beneficial services, be they food products, carbon sequestration or water quality improvement, are considered within the full spectrum of ecosystem services and indeed the broader Ecosystem Approach. Failure to do so merely perpetuates the historic practice of optimising ecosystem management for the provision of target services (such as intensive agriculture or marine fisheries) which may result in the inadvertent degradation of many non-target services and the integrity and resilience of the productive ecosystem.

In developing a PES, it is also essential that both robust and consensual means are applied to address the relative values of the various ecosystems services in a multi-service procurement scheme. The [Valuation toolkit](#) outlines some appropriate methods in particular [cost benefit analysis and multi-criteria decision making](#). However, there are methodological shortfalls to reflecting all inherent ecosystem service values in meaningful market prices as, whilst ‘marketable goods’ can be priced and costed, ‘public goods’ that defy market mechanisms have to be valued by other means far less rooted in a market of exchange and transaction. This may mean that the final decision about relative value between services is derived by consensus between all stakeholders rather than derived through simple cost calculations. This not only ensures that the relative values of these services are satisfactorily reflected in the scheme, but also that local differences in service production inform local implementation rather than merely assuming that generalisations in national schemes apply uniformly.

Further guidance on implementing PES

Defra has published [‘Payments for Ecosystem Services: A Best Practice Guide’](#)² (2013) containing detailed guidance about PES schemes, their development and implementation.

² <https://www.gov.uk/government/publications/payments-for-ecosystem-services-pes-best-practice-guide>