

Payment for Ecosystem Services: what does it mean for the future of our environment?

Does payment for ecosystem services offer a new opportunity for natural resource management and what is the current state of development?



Living With Environmental Change
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The Living With Environmental Change Partnership brings together 22 public sector organisations that fund, carry out and use environmental research and observations. They include the UK research councils, government departments with environmental responsibilities, devolved administrations and government agencies. The private sector is represented by a Business Advisory Board.

Payment for ecosystem services (PES) may offer a route to the better management of natural resources, and sources of untapped investment for the conservation of natural capital. Does PES offer the promise of a more sustainable environment for us all and what is the current state of its development?

Why should we pay for the benefits we get from nature?

- As a society, we take for granted many of the benefits that nature provides – “ecosystem services” such as clean water, pollinators, a stable climate, or simply experiencing the beauty of nature.
- The problem with many of the services provided by nature is that they are difficult to value in traditional economic terms, and in the past society has not been prepared to pay for land to be managed for these wider benefits. Land has therefore typically been managed to produce outputs that can be easily marketed eg food and fibre, sometimes at the expense of the natural environment.
- There are a number of policy instruments that may encourage more sustainable management of the natural environment, for example providing people with information and enabling them to build capacity so they can manage the land differently, or introducing taxes, incentives and regulation.

Creating new markets for ecosystem services is an option that is increasingly being used alongside these other policy instruments:

- Payment for ecosystem services (PES) brings economic thinking and a market mechanism into the provision of natural resources. PES schemes are voluntary market-like transactions between buyers (eg businesses) and sellers (eg landowners) of ecosystem services.
- PES schemes typically pay for the amount of ecosystem service that is delivered, but “PES-like” schemes are also common, for example agri-environment programmes that pay farmers on the expected outcomes of their land management practices.

What can PES offer?

- **For business:** an opportunity to meet environmental obligations, demonstrate corporate responsibility, reduce costs and market products.
- **For the conservation community:** new revenue streams to pay for conservation work that could not otherwise be afforded.
- **For landowners and managers:** income diversification, opportunities to restore and improve degraded land for future generations.
- **For the policy community:** private investment that can supplement overstretched public funding to help achieve national and international policy goals.
- **For society:** a means for securing provision of ecosystem services into the future; opportunities to learn about and invest in nature.

What kinds of schemes exist now?

Broadly speaking, PES schemes differ according to:

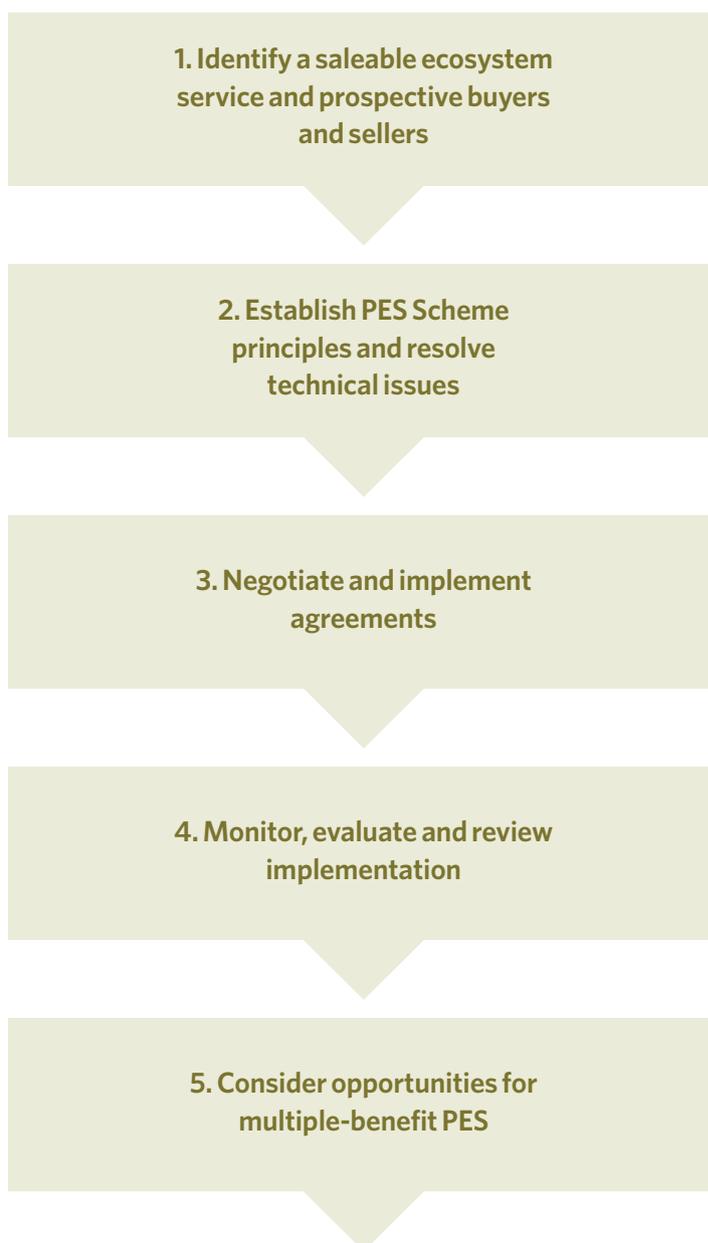
- The extent to which they pay for a single ecosystem service (eg carbon and climate mitigation benefits) or pay for a wider range of ecosystem services.
- Whether they are publically versus privately funded (or a bit of both).
- Whether they are international, national or local in scope.
- The range of buyers and sellers involved.

For example:

- UK businesses can invest in international PES schemes e.g. voluntary carbon markets, which are international in scope with multiple buyers purchasing from multiple sellers, using private finance to pay primarily for climate regulation benefits (such as tree planting schemes).
- Agri-environment schemes are publicly funded PES schemes that operate at a national scale, with a single buyer (the state) giving multiple landowners and managers payments in return for actions designed to enhance the provision of ecosystem services. For example, the Glastir scheme in Wales is designed to target payments as efficiently as possible to pay for specific ecosystem services.
- In the UK, national, privately funded PES schemes have been established, under the UK Woodland Carbon Code, and the pilot phase UK Peatland Code, to secure investments (from multiple buyers) in woodland carbon, and peatland restoration for carbon and other benefits (provided by multiple sellers).
- Local schemes have also been established at the scale of individual catchments with a single or multiple buyers paying multiple sellers (usually landowners and managers) to provide specific ecosystem services eg the West Country Rivers Trust Anglers' Passport scheme where anglers pay for improvements to river water quality to boost fish stocks, and schemes run by South West Water and Wessex Water paying landowners to change their land management practices to deliver water quality and quantity benefits.

What guidance is available?

Defra has published a PES Best Practice Guide that draws on LWEC funded research. It suggests five broad steps in the development of a successful PES scheme:



What can we learn from LWEC research and early experience with PES in the UK?

Flexible delivery and stakeholder engagement are vital when operating PES schemes:

- PES schemes may be more efficient if they are locally targeted and vary payments to match the costs of providing ecosystem services.
- Landowners tend to favour less risky, short-term agreements to provide ecosystem services, but investors and government need to ensure these benefits are secured for the long-term and not reversed, and that the most degraded or inaccessible sites are not excluded.
- Working at landscape scale across ownership boundaries is essential to deliver certain ecosystem services eg related to water, biodiversity and climate regulation.
- Local PES schemes often benefit from coordination by an independent, trusted, broker such as a local conservation trust, social enterprise or farm adviser.
- Engaging local stakeholders early on can help to create the right conditions for PES schemes to develop. Techniques such as participative mapping and modelling of landscape-scale ecosystems enable better understanding of different ecosystem services under a variety of scenarios, enabling trade-offs to be negotiated, and priorities agreed.
- PES schemes must bring added benefits that would not have otherwise occurred. For example, PES schemes should not pay landowners to meet basic regulatory requirements.
- But, although UK and EU legislation puts an obligation on designated sites (eg Sites of Special Scientific Interest and Special Areas of Conservation), restoring habitats may be prohibitively expensive under existing agri-environment schemes. Additional private investment may therefore be required and this is recognised, eg in the UK Woodland Carbon Code and the UK Peatland Code.
- Future PES schemes, including public agri-environment schemes, need options to further encourage land managers who maintain high conservation standards, as well as compensating intensive producers for changing to less damaging practices, or assisting undercapitalised farms to invest in improved infrastructure.

What are the messages for researchers and funders?

- Inter-disciplinary research into PES is needed, involving social scientists as well as ecologists and economists, and key stakeholders such as businesses and landowners/managers.
- Future research needs to pay greater attention to social and economic outcomes of PES approaches as well as environmental ones - for example exploring unintended socio-economic consequences of PES schemes and better understanding how PES might contribute towards the rural economy.
- Continuing research is needed into how different land management practices influence the production of different ecosystem services in different places and the role of PES and other incentives in altering these practices.
- Cause and effect mechanisms are not yet sufficiently clear for some habitats and/or ecosystem services - for example, how land management practices in the uplands can help mitigate flooding risk downstream.
- Better understanding is required of the potentially damaging trade-offs between ecosystem services that may be caused by PES schemes, and the social justice implications of expanding the use of PES.
- More research is needed into the behaviours of potential buyers and sellers of ecosystem services to assist with the development of markets and understand what people value and why.
- Continuing research is needed into incentivising land managers' behaviour eg enabling collaboration across property boundaries for management of certain ecosystem services.

What are the messages for business?

- For some sectors PES can help reduce costs eg water intensive industries or businesses that require high water quality such as water utilities and drinks manufacturers.
- PES may be an opportunity to meet environmental obligations (eg corporate carbon accounting).
- PES can demonstrate corporate responsibility towards the natural environment (where this includes climate mitigation benefits it may in some cases be possible to classify these investments as assets, given their potential value on carbon markets).
- Some businesses can use PES schemes to market specific product lines linked to particular habitats or services (eg food and drink, hospitality/tourism).

What are the messages for policy makers?

- PES will not provide all the answers but, used alongside other policy tools, can contribute significantly towards better natural resource conservation. Careful evaluation is required of all the risks as well as benefits.
- PES markets need appropriate guidance, frameworks and monitoring to ensure companies do not use PES as an excuse to continue with business as usual eg offsetting their carbon without reducing emissions at source.
- Safeguards need to be created to ensure that benefits are new and would not otherwise have been forthcoming, to secure long-term benefits, and to avoid trade-offs between carbon and the other services we rely on from the land.
- For national PES schemes involving multiple buyers and sellers, it is likely that mechanisms to monitor, audit and accredit schemes will need to be developed on a habitat by habitat (eg woodlands and peatlands) or on a service by service basis (eg guidance from Ofwat for water industry PES schemes).
- There may be a role for government, and a need for a regulatory framework, to ensure standardisation of approaches and co-ordination between schemes, particularly if there is a proliferation of guidance for different habitats and services. For example, it may be possible to develop a combined code for land-based carbon.
- It may be necessary for agri-environment schemes to integrate (or co-ordinate) with private PES schemes, to ensure equitable distribution of funds geographically and across different types and sizes of landholding.
- Public funding may need to increasingly target services that are harder to bring to market, and locations that are more expensive to restore.
- Members of the policy community need to work closely with local/regional partnerships (e.g. Nature Improvement Areas and Local Nature Partnerships in England and Wales), National Parks, Areas of Outstanding Natural Beauty and other designated areas, to test and scale up the design and delivery of PES schemes.
- The learning from the PES pilots needs to be disseminated and fed it into policy and practice, alongside investment in a programme of formal monitoring and evaluation of PES schemes, both private and public.
- Investment in knowledge exchange needs to be maintained to provide access to a range of information about ecosystems, including PES.

Further information

This Policy and Practice Note was written by Mark Reed, building on a previous Relu Policy & Practice Note written by Frances Rowe.

Useful resources: Defra's PES Best Practice Guide:

www.gov.uk/government/publications/payments-for-ecosystem-services-pes-best-practice-guide

For the latest PES research from LWEC and across Government, visit Defra's Ecosystem Knowledge Network PES page: <http://ekn.defra.gov.uk/>

LWEC is a multi-agency partnership that is concerned with responses to environmental change www.lwec.org.uk. Research on PES within the LWEC partnership has been conducted by a number of programmes including:

- Relu, an interdisciplinary programme supporting research on rural economy and land use. www.relu.ac.uk
- Valuing Nature Network, an interdisciplinary network for valuing ecosystem services, biodiversity and natural resource use. www.valuing-nature.net
- Biodiversity, Ecosystem Services and Sustainability programme, a research programme investigating the role of biodiversity in ecosystem processes. www.nerc.ac.uk/research/programmes/bess
- Ecosystem Services and Poverty Alleviation programme which is generating new knowledge to demonstrate how ecosystem services can reduce poverty and enhance well-being for the world's poor. www.espa.ac.uk
- The NEA (National Ecosystem Assessment) follow-on phase which is further developing and communicating the evidence base of the UK NEA and making it relevant to decision and policy makers at different spatial scales across the UK. <http://uknea.unep-wcmc.org>

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