

House of Commons Environment, Food and Rural Affairs Select Committee inquiry: Health and Harmony

Written submission of the Institution of Environmental Sciences (IES), April 2018

Summary

- The IES wholeheartedly supports an approach based on the principle of “public money for public goods”.
- For this approach to succeed, a nuanced, evidence-based understanding of the complex socio-environmental systems which deliver these goods (and their capital stocks and flows) is required. As such, we would urge that public goods from agriculture are considered in relation to the ecosystem services concept.
- The new policy should be based on an understanding of payments as ‘investments’ (linked to the delivery of bundles of ecosystem services) rather than ‘subsidies’. In this way payments could effectively drive practices that deliver a range of public goods and grow the natural capital base from which these goods and services flow, leading to a virtuous and expanding spiral, in stark contrast to historical trends.
- Defra’s consultation paper asks participants to rank the relative importance of different public goods. We consider this approach unhelpful: it over-simplifies the multi-faceted nature of the natural and human systems involved, and the complex interlinkages between natural capital stocks and the ecosystem services which are derived from them.
- The policy must be appropriately future-proofed and based on the best available science and evidence. Monitoring and evaluation must be embedded at scheme level, to enable adaptive management and continual learning and improvement.
- A new environmental land management policy should be based on a shared set of principles and common UK (legislative) frameworks which have been co-produced to establish and ensure minimum standards (of for instance, environmental protection and animal welfare). Within these frameworks there must be the flexibility for individual devolved institutions to innovate and improve above and beyond these minimum standards.

1. Background

1.1. The Institution of Environmental Sciences (IES) is a membership organisation that represents professionals from fields as diverse as air quality, land contamination and education, wherever you find environmental work underpinned by science. The organisation leads debate, dissemination and promotion of environmental science and sustainability, and promotes an evidence-based approach to decision and policy making. The Institution stands up for science, scientists and the natural world.

2. The Government plans to base the new policy on public money being used to pay for public goods. To what extent do you agree with this approach? What public goods should be supported?

2.1. **A new approach**

The IES wholeheartedly supports this approach, and has called for some time for a shift to a model based on “public money for public goods”. This principle should sit at the heart of a new approach to environmental land management based on investments which deliver returns for society, rather than subsidies.

2.2. More than 70% of the UK’s land area is under some form of agricultural management. In the context of the findings of the 2016 State of Nature Report¹, that policy-driven agricultural changes were by far the most significant driver of declines in the UK’s wildlife in recent decades, there is a clear need for a new, redesigned investment scheme which rewards farmers for delivering public goods and promotes environmentally friendly management practices to enhance natural capital.

2.3. The new policy is an opportunity to incentivise the delivery of beneficial services, but also to address longstanding environmental problems. For instance, there is an urgent need to reduce ammonia emissions from agricultural sources. Ammonia is a source of the nutrient nitrogen and can have significant impacts on the condition of important semi-natural habitats when deposited. Ammonia also combines with other pollutants in the atmosphere to form fine particulate matter (PM_{2.5}), which has been proven to have adverse effects on human health even at very low concentrations. This secondary PM_{2.5} is the single largest contributor to urban PM_{2.5} concentrations> over the past 20 years ammonia emissions have changed very little – this new policy represents an opportunity to incentivise practice changes which will deliver for both people and the environment.

2.4. **‘Public money for public goods’**

In economic theory, a public good is defined by the characteristics of non-excludability (people cannot be excluded from the benefits it confers) and non-rivalry (if it is consumed by one person it does not reduce the amount available to others). However, in a 2009 report on the *Provision of Public Goods through Agriculture in the European Union*, the Institute for European Environmental Policy (IEEP) note that in reality fully meeting these conditions is rare, and so public goods should be considered to exist on what can be described as a “continuum of ‘publicness’”². In this report IEEP set out the main public goods associated with agriculture. Most significant of those identified are environmental, including agricultural landscapes, farmland biodiversity, water quality and availability, soil functionality, climate stability, air quality, and resilience to flooding and fire. Also identified are more diverse social public goods, including food security, rural vitality, and animal welfare and health. This and similar frameworks are useful, and demonstrate the diversity of public goods which must be supported by the new system, but do not replace the need for need for a nuanced, evidence-based understanding of

¹ Hayhow et al. (2016) *State of Nature 2016*. The State of Nature partnership.

<https://www.rspb.org.uk/globalassets/downloads/documents/conservation-projects/state-of-nature/state-of-nature-uk-report-2016.pdf>

² Cooper, T., Hart, K. and Baldock, D. (2009) *Provision of Public Goods through Agriculture in the European Union*. Report prepared for DG Agriculture and Rural Development, 30-CE-0233091, Institute for European Environmental Policy. pp v. https://ieep.eu/uploads/articles/attachments/fed6141c-7490-4561-9ca2-838a22b96539/final_pg_report.pdf?v=63664509725

the complex socio-environmental systems which deliver these goods, and their capital stocks and flows. As such, we would urge that public goods from agriculture are considered in relation to the ecosystem services concept.

2.5. Ecosystem services

Simply defined, ecosystem services are the diverse benefits we derive from the natural environment. Under the National Ecosystem Assessment (UKNEA) (2011) and its Follow-On (2014)³, significant work has been conducted into how these services can be mapped and measured, and valued in both market and non-market, financial and non-financial terms. The Natural Capital Committee has also done significant work on ecosystem service valuation and natural capital reporting⁴, so there is a growing evidence-base and expertise in this area. As recognised in the evidence annex to the Government's own 25-Year Environment Plan, underpinning this framework is a recognition of the need to take a holistic, systems approach, avoiding over-simplification of land use and land management systems.

2.6. Investing in complex systems

We also suggest that in designing a policy focused on the delivery of public goods, it is beneficial to think in terms of 'investments', rather than 'subsidies'. By explicitly treating payments as investments and linking them to the delivery of bundles of important ecosystem services (moving away from a system based primarily on subsidies for income support), payments could effectively drive positive and environmentally friendly land management practices that deliver a range of public goods and grow the natural capital base from which these goods and services flow. This could lead to a virtuous and expanding spiral, in stark contrast to historical trends. It is important to recognise, however, that context matters: it is not possible - nor is it necessarily desirable - to try to deliver everything everywhere. Specific objectives, and the bundles of services and mechanisms which can deliver them in different locations, will need to be carefully considered drawing on all available evidence regarding the environmental, social and economic factors at play in particular places and landscapes.

2.7. Regarding specific categories of public goods which should be supported, frameworks such as that presented by the IEEP may be useful guides. However, the complex interlinkages between categories of public goods should not be ignored. This highlights a key weakness in Defra's Health and Harmony consultation paper: the consultation asks participants to rank the relative importance of a range of different public goods. To do so would be to misunderstand the multi-faceted nature of the natural and human systems involved, and the complex interlinkages between natural capital stocks and the ecosystem services which are derived from them. For instance, climate change mitigation is closely linked to soil health - a functioning peat moorland can be a net carbon-store (as well as helping to clean water, provide biodiversity and create cultural

³ <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

⁴ e.g. Natural Capital Committee (2014) *Towards a Framework for Defining and measuring Changes in Natural Capital*. Working Paper 1. March 2014.

<http://nebula.wsimg.com/719f9d409c75204d7cc721a041b08807?AccessKeyId=68F83A8E994328D64D3D&disposition=0&alloworigin=1>

value). Of course, it will be necessary to prioritise the delivery of certain public goods when designing local management plans, but this should be done in a targeted way determined by local context, seeking to deliver bundles of services (rather than individual services), and informed by science and evidence from the natural and social sciences and economics.

3. How should the new policy based on supporting public goods be coordinated and delivered?

3.1. A systems approach

A strategic, systems approach will be required, based on an holistic evidence-based understanding of local contexts at varying spatial and temporal scales. As far as is feasible, the Government should also ensure the new management system is future-proofed (for example, by analysing the scheme and its likely impacts under different potential future scenarios, such as those developed under the UKNEA⁵). Recognising the interconnected nature of environmental and social systems operating across multiple scales, landowners and managers should be incentivised to co-operate at scales beyond the single farm, which will aid in the delivery of desired outcomes both locally and regionally. Such an approach is vital to delivering, for example, improved water quality and flood management through catchment management. Some regional and local differentiation in approach and implementation should be considered within a broader strategic framework. Socio-environmental systems are complex and interconnected, so a degree of adaptability to reflect local system dynamics will be required.

3.2. The new policy should take an outcome focused approach, based on payment by results (where results can be demonstrated within a reasonable timescale following investment), rather than a prescriptive approach to environmental land management. It is important that land owners and managers and wider local communities and stakeholders are involved in the design and implementation of future agri-environment schemes, and that these schemes allow flexibility to determine how to meet shared objectives, supported by practical and technical advice from appropriately experienced, independent and competent advisors working to recognised standards.

3.3. Science, evidence and adaptive management

The UK is a world-leader in environmental research, and to deliver on the vision of this paper, and the Government's 25-Year Environment Plan, the policy must be informed by the best scientific evidence and expertise. As well as during policy design, monitoring, research and evaluation must be embedded in the policy at scheme level, including collection of baseline data and studies of interventions. This data collection and analysis should inform a process of continual learning and development in a system of scientific experimental adaptive management. Significantly greater investment in monitoring and evaluation than the current level of less than 1% of agri-environment scheme value will be required and crucially, the results of evaluations should be actively and explicitly used

⁵ Haines-Young, R., Paterson, J., Potschin, M., Wilson, A. and Kass, G. (2011) The UK NEA Scenarios: Development of Storylines and Analysis of Outcomes. *The UK National Ecosystem Assessment Technical Report*. Chapter 25. <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

to feedback into improvements in delivery, objective setting and scheme design. Evaluation must be at the heart of the adaptive management cycle.

3.4. *Connectivity between urban and rural areas and approaches*

There is now a broad body of evidence that highlights that many people, located mainly in towns and cities, are not accessing or enjoying the benefits of a healthy natural environment. Indeed, there is evidence of a disproportionate burden of harm emerging for those without ready access to healthy natural greenspace in or close to where they live. Recognising this growing evidence, the IES would also suggest that the scheme adopts an approach which more explicitly recognises the connectivity between rural and urban systems, and the impact of land management decisions beyond the immediate locale. The new policy framework should promote schemes that can deliver benefits to large numbers of people and this would mean ensuring that the scheme were able to support land management practices that improved natural capital in or close to towns and cities, as well as in more rural areas more traditionally associated with agri-environment investment.

4. In which areas should the Government seek agreement with the Devolved Institutions to ensure a common approach across the UK?

4.1. Environmental processes do not respect political boundaries. As such, and in order to protect the functioning of the UK single market, we recognise there is a need to maintain common frameworks across the four nations of the UK in some policy areas, including agriculture. However, in many areas the devolved nations have been instrumental in driving higher standards. Previously, the IES has joined with other professional bodies under the banner of the Environmental Policy Forum (EPF) in calling on the Government to ensure that legislation put in place to facilitate the UK's exit from the EU will not limit the ability of the devolved nations to improve environmental standards over and above any agreed minimum standard⁶. The same principle applies to this policy, and any subsequent associated legislation (for instance, an Agriculture Bill). As such, we consider that future environmental land management schemes must be built on a set of shared principles and common (legislative) frameworks setting out and enforcing minimum standards (for instance on environmental protection and animal welfare). Within these frameworks, however, there must be the flexibility for individual devolved institutions to innovate and improve above and beyond these minimum standards. If and where divergence in approach does occur this should be carefully monitored, with an awareness for unanticipated system impacts both environmentally and socio-economically. The process of developing shared principles and frameworks must be initiated in a collaborative spirit to enable joint ownership and the co-creation of mutually acceptable solutions.

4.2. Underpinning such common frameworks should be a set of shared fundamental principles, such as the 'polluter pays' and 'precautionary' principles and the principle that preventive action should be taken, which have formed the fundamental foundations of environmental protection in Europe (detailed in Article 191 of the Lisbon

⁶ https://www.the-ies.org/sites/default/files/policy/epf_eu-withdrawal-bill_briefing-to-peers.pdf

Treaty). The IES looks forward to seeing the proposals the Government brings forward regarding a new set of fundamental principles for UK environmental law and policy, in the context of the promised consultation on a new governance and enforcement body. However, these principles should not be considered solely the preserve of this body, but should be embedded across government and explicitly stated in all policies to which they might apply.