

Envisioning a British Ecosystem Services Policy

Policy Brief for the University of Cambridge Centre for Science and Policy Workshop

David Gawith and Ian Hodge
Department of Land Economy
University of Cambridge

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Key Points

- *Brexit creates a unique opportunity to improve agricultural policy. Policy must have a clear vision of a new direction from the outset.*
- *An ecosystem approach to rural land policy can address many of the problems the CAP and demonstrate substantial public benefits.*
- *The fundamental objective of a British Ecosystem Services Policy (BESP) would be to secure the long term social value delivered from ecosystems in the UK.*
- *Under a BESP, subsidies to farmers would be selectively reduced, and environmental goods and services would be purchased directly from those best placed to provide them.*
- *At a national level, a BESP would provide a strategic approach and oversight for the procurement of ecosystem services.*
- *A BESP would encourage the establishment of Payment for Ecosystem Services (PES) schemes.*
- *A BESP would establish national procurement funds to purchase ecosystem services that are not amenable to PES schemes.*
- *At a local level, a BESP would create governance structures to support local priorities and co-ordinate the delivery of ecosystem services.*
- *Funding would be allocated on a competitive basis and available to a wide range of stakeholders.*
- *Development of a BESP would require considerable political, technical, and bureaucratic resources, however the benefits of a BESP would likely substantially outweigh its costs over time.*
- *Some farmers would lose from the removal of direct subsidies, however a BESP would also provide opportunities for diversification and ease entry into the sector.*

1. Introduction

The referendum decision to leave the European Union (EU) creates a profound opportunity to improve agricultural and rural environmental policy in Britain (Cressy, 2017). Currently these two areas fall largely under EU policy, particularly under the Common Agricultural Policy (CAP). The CAP has been criticised widely for being poorly suited to the British context, providing fixed subsidies with unclear and inconsistent objectives, being responsible for and ineffective in limiting environmental damage, and being resistant to meaningful reform.

Agriculture in Britain accounts for only 0.7% of GDP, while the average for the EU is more than double this (Packer, 2016). British farms are generally larger, and farmers generally wealthier than their counterparts on the continent (Hill and Bradley, 2015). The objectives of the CAP relating to production and welfare are, therefore, not particularly well suited to the context in Britain. This misalignment is significant because the CAP accounts for 38% of EU spending (European Commission, 2015), and provides payments to British farmers in excess of £3 billion per annum (Defra, 2016a). More than 70% of these payments are referred to as 'Pillar 1' payments and they are made in proportion with the area of land that is actively farmed. While the CAP was originally designed to encourage production, payments have subsequently been actively decoupled from this objective. It is now not particularly clear what the reasons are for these payments (Tangermann, 2011).

The CAP is particularly unfavourable to Britain because the common financing rules mean that British taxpayers pay more to subsidise farmers in other EU states than the country receives in return (Packer, 2016). While historical problems of oversupply and export subsidies have been largely addressed, the Pillar 1 payments still cause economic distortion. Area payments inflate rural land prices and cushion marginal producers against shifting economic signals. Farmers respond more slowly to these signals as a result, and this, combined with the active farming requirement for basic payments, means that agriculture under CAP is both less productive and less efficient than it could be (Swinbank 2017).

The CAP may also be seen as a failure in environmental terms. The most recent State of Nature report (Hayhow *et al.*, 2016, p.6) states that "Many factors have resulted in changes to the UK's wildlife over recent decades, but policy-driven agricultural

change was by far the most significant driver." The 'Greening' requirements (conditions for receipt of 30% of the direct payment) introduced in 2013 have had little environmental benefit (Pe'er *et al.*, 2014). Louhichi *et al.* (2015) found that less than 0.5% of land across the EU has changed use since their adoption. While agri-environment payments have achieved some benefits, most would argue that spending could be better targeted (Batáry, *et al.*, 2015).

The desire to improve agricultural and environmental policy has been indicated by a number of organisations in Britain. The UK Government, of whatever party, has consistently supported a more liberal approach to markets and payments for environmental benefits. For example in 2007, the House of Commons Environment, Food and Rural Affairs Committee (2007, p.3) noted that "the only long-term justification for future expenditure of taxpayer's money in the agricultural sector is the provision of public benefits". The current Government's manifesto commitment to be "the first generation to leave the environment in a better state than it found it" has been reiterated in the Brexit White Paper. As a key mechanism for pursuing this objective, the Department for Environment, Food and Rural Affairs (Defra) is currently formulating a 25 year plan for the environment. This plan is set to advance an ecosystem approach to agriculture in order to include environmental considerations within economic decision making (CPRE, 2017). Ecosystem services are defined simply as "the benefits that people obtain from ecosystems" (Millennium Ecosystem Assessment, 2003, p.211). This move towards an ecosystem approach has also been indicated in discussions about agricultural policy reform. Recently, the Minister of State for Defra, George Eustice, stated "We should be paying [farmers] and rewarding them for the ecosystem services they provide – not providing them a subsidy and saying they should be grateful..."¹

An ecosystem approach to agricultural policy could address many of the problems the CAP causes in Britain and promote a more integrated approach to rural land. Agriculture provides ecosystem services in the form of food and other marketed products as well as non-marketed environmental services, but it also frequently diminishes ecosystem services such as the regulating services ensuring water quality and biodiversity (Power, 2010).

An ecosystem approach to policy is defined as "a strategy for the integrated management of land,

¹ Interview with Farmers Weekly, 23 December 2016.

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water and living resources that promotes conservation and sustainable use in an equitable way” (Convention on Biological Diversity, 2017). The Scottish Government (2011, p.2) argues that an ecosystem approach seeks to ensure that “we recognise and sustain the benefits provided by the environment whilst delivering other economic and social goals” and sees potential for “greater use of an ecosystems approach to improve decision-making, increase the quality of our natural environment, and enhance the value which we obtain from it”. The ecosystem approach can be criticised as an anthropocentric and normative economic approach to nature. It is, however, a powerful way to include environmental considerations within policy, and it can in principle move beyond instrumental values (Schröter *et al.*, 2014).

In practice the room for policy manoeuvre will depend on the trading relationships that are agreed with the EU and with other countries around the world. Continuing free trade with the EU would set up an argument for subsidies in the UK that are broadly equivalent to those available to EU farmers under future CAP arrangements. Free trade in agricultural products with other countries would be likely to reduce food prices and increase pressures on farm incomes, increasing costs of retaining unprofitable farms in business but reducing costs in terms of the income foregone arising from changes in land management. These are critical questions for a future rural land policy but we do not explore them further here.

This brief outlines the potential for a British Ecosystem Services Policy (BESP) to improve agricultural and environmental policy in Britain when it leaves the EU. Section 2 sets out some principles of a BESP. Section 3 describes the potential design of a BESP, while Section 4 notes a range of practical challenges to its implementation. Section 5 briefly describes limitations of a BESP and the final section presents conclusions and recommendations.

2. An Ecosystem Approach

The fundamental objective of a BESP would be to secure the long term social value that is delivered from ecosystems in the UK. Under an ecosystem approach subsidies to farmers are removed, and environmental goods and services are purchased directly from those best placed to provide them (Helm, 2016; Cressy, 2017). This proposal has been labelled a British Ecosystem Services Policy (BESP) by Hodge (2017), and it has marked advantages over other proposals for a UK agricultural policy (Packer, 2016; NFU, 2017).

A BESP would encourage the delivery of ecosystem services for payment from both public and private sources. As Helm (2016) argues “There is no good general case of subsidising farmers... There is also no good general case for subsidising polluters...” A BESP must be underpinned by a judgement as to the appropriate ‘reference level’ – the environmental standard that is expected by society to be delivered by landholders. This is reflected in legal standards and the requirements set in order to justify payments. Thus, farmers should not be paid to achieve environmental standards set in law, such as water quality, rather they should be penalised if they fail to achieve them. But they may be paid to change their methods in order to achieve standards in excess of legal requirements. The position with regard to water quality has been clarified over the past thirty years, but the expectations with regards to other environmental standards, such as levels of carbon stored in soils or the qualities of soil itself are less clear. This should be a subject of public debate. There is a related question about the future of cross-compliance requirements in the absence of set levels of direct payments. Some of these requirements are already in, generally European, law. Other requirements might be written into law. This means that there will need to be a review of what standards of land management should be set as legal requirements.

With full UK sovereignty being achieved over areas of the budget currently controlled by the EU, the ability to demonstrate that policy is delivering clear public benefits will be an essential element in support of claims to retain public expenditure for rural land policies. Funding for agriculture will increasingly have to compete with other critical government services including health, social care, and education. New approaches to intervention in rural land use systems could provide substantial net benefits to society. For example, the recent flooding that has affected parts of England was likely exacerbated by land uses supported by government policy. There may have been substantial economic benefit in terms of reduced damages, had a larger proportion of the affected catchments been woodland rather than pasture. This potential benefit may exceed the social value derived from the agricultural uses of that land. However with no mechanism to reimburse farmers who re-establish woodlands near watercourses, this failure is likely to persist. Addressing this particular issue is likely to become increasingly important under climate change (CPRE, 2017).

The potential benefits to society of a form of BESP have already been illustrated by Bateman *et al.*

(2013). They used spatially explicit models and methods to estimate the value of a range of measurable ecosystem services in order to estimate the potential benefits of optimising land use policies based on the total value of these services. Although the monetary figures should be regarded as illustrative, they found that a spatially targeted approach to land use that considers the value of both marketed goods and ecosystem services could increase the net benefits society derives from land by 20%. It is worth noting that this figure excludes ecosystem services that are not easily valued such as biodiversity, implying that were policies geared to protecting and enhancing these, the net benefits to society would be higher (Bateman *et al.*, 2013).

3. Potential Policy Design for a BESP

In order to secure long term ecosystem value, a BESP would coordinate interventions across the full range of ecosystem services. It would encourage management of ecosystems across larger areas, while allowing management decisions to be more devolved. A BESP would focus on territorial rather than sectorial issues, with the objective of promoting the net social benefit provided by land across all sectors.

We focus on the BESP at two levels. A national level policy will provide oversight of the operation of the policy and funding for the procurement of nationally significant ecosystem services. This central organisation would be charged with securing the long term social value that is derived from ecosystems in Britain. It would not seek to manage local decisions, rather it would seek to adjust the incentives under which local decisions are made. Local level governance will provide structures that introduce local priorities and support and co-ordinate local delivery.

The following two sections set out some design principles for a BESP. Section 3.1 describes the key mechanisms of a BESP, outlining the methods for creating a demand for ecosystem services through Payment for Ecosystem Services (PES) schemes and the establishment of procurement funds for the public purchase of ecosystem services. A BESP would involve a degree of decentralisation and local governance, which are discussed in Section 3.2.

3.1 Creating demand at a national level

The central mechanisms of a BESP would re-align incentives to promote the provision of social value from

ecosystems. In theory, this could be achieved through PES schemes, in which beneficiaries of ecosystem services pay providers directly. A BESP would support the development of such PES schemes where feasible. In practice, however, many of the services provided by ecosystems, such as landscapes, have public good characteristics in that they are non-excludible. In these cases, collective intervention is necessary in order to deliver socially desired outcomes. Under a BESP, these ecosystem services would be purchased by bespoke procurement funds at either a national or a local level. Both PES schemes and procurement funds would, therefore, be needed for a BESP.

PES schemes would constitute the first central mechanism of a BESP. PES is best applied to well-defined ecosystem services with clear suppliers and beneficiaries. The NFU have suggested that the Government should encourage PES schemes in order to fund environmental improvements (House of Commons Environmental Audit Committee, 2017). While these types of arrangements have also been advocated by environmental organisations, they are often difficult to execute, and in practice their scope may be limited (House of Commons Environmental Audit Committee, 2017).

Defra has been supporting a number of pilot PES schemes in England (Defra, 2016b), identifying both potential and challenges. There is a small number of examples of collective action for PES-type schemes in the UK. Some are well known, such as that in the South West where South West Water has recently purchased changes to farm land management in critical areas in order to improve water quality. CPRE (2017) points to a community initiative in Pickering, North Yorkshire to plant 29 hectares of woodland upstream of the town in order to reduce the risk of flooding. According to the report (p.36) "The flood risk now has fallen from 25% to just 4% and at a fraction of the cost of hard defences." Under a BESP, PES schemes similar to these would be encouraged for all services that are amenable to such approaches. The experience indicates some potential for more widespread applications, such as for a 'Natural Infrastructure' as has been advocated by Green Alliance and the National Trust (Green Alliance, 2016). Opportunities for these types of arrangements will, however, be limited by high transaction costs and the potential for free-riding behaviour.

While in principle PES involves direct payments from the beneficiaries of services to those acting to provide these services, in practice payments are often made by governments, making them similar to agri-environment schemes. However, even when PES

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schemes operate privately, there is likely to be the need to provide support for their establishment and mediation services when disagreements arise between stewards and beneficiaries (Scottish Government, 2016).

At the same time, a BESP would create procurement funds for goods and services not amenable to PES schemes. These procurement funds would rely on public money, therefore a BESP would need to ensure that they are only created for services where private arrangements are not feasible. For example, there could be a fund aimed at reducing the emission of greenhouse gasses in agriculture and increasing carbon sequestration in soils and plant matter. In this case it would clearly be difficult to encourage individuals to pay farmers directly for the benefits of reduced net emissions, making public funding for these activities necessary.

The focus would be predominantly on national priorities and procurement funds could be set up for the conservation of biodiversity, the expansion of woodland area towards national targets, and the establishment of large scale conservation areas, among others. Thus there could be a flood protection fund managed by an environment agency, a biodiversity fund managed by a nature conservation agency or a forestry fund run by a forestry agency. Procurement funds should also be open to partnerships with charities and corporations, or could provide match funding against voluntary donations or contributions in kind, in order to increase the amount of funding available. Procurement funds would also have the advantage of being able to provide long term support for long term objectives such as ecological restoration projects, which contract-based agri-environment schemes struggle to do (Hodge and Adams, 2016).

Procurement funding would be provided to the individuals or groups that are best placed to provide the specified ecosystem service. While this would in many cases be individual farmers, in other cases collectives of farmers, non-government organisations, or even businesses could provide efficiency gains in the demonstration of benefits. For example, if a procurement fund were established to encourage the improvement of nationally valued habitat, it may be difficult for single farmers to demonstrate that their actions can deliver this. In this case, a group of farmers could work together to improve conservation to the extent it is able to be clearly demonstrated to those managing the procurement fund. In this case, payment would go to the collective which could then decide how best to divide or use it. Cooperatives of farmers similar

to this currently manage agri-environment contracts in the Netherlands (Ministry of Economic Affairs, 2016). Two studies piloting an ecosystems approach to land use in Scotland demonstrated that farmers had a willingness and appetite to work together in cooperatives, and that doing so enabled better understanding of the objectives of the approach (Scottish Government, 2016). The remit of the cooperatives does, however, need to be clear from the outset (Scottish Government, 2016).

The approach to funding would draw on the experience of agri-environment schemes. Funds would be expected to be allocated on a competitive basis and to be available to a wider range of stakeholders either directly to land managers or indirectly through intermediary organisations, to support facilitation and mediation, wherever this can enhance the scope and effectiveness of expenditure. This would allow for a landscape or catchment scale approach to the provision of ecosystem services. In some cases, funding would be spatially targeted, such as for biodiversity where values vary spatially, in other cases it would not be, such as for greenhouse gas mitigation where the location of mitigation is not important.

Individual landholders and organisations would be able to be in receipt of funds from more than one procurement funder simultaneously. They would have the potential to identify economies of scope that may be available for the delivery of multiple ecosystem services from a given area of land. Conversion of land for the conservation of biodiversity could, at the same time, enable an increase of the stock of carbon held in the land and reduce flood risk further down the catchment. In principle, the landholder should be able to receive payment for all of these services at the same time. This can increase the efficiency of delivery by locating delivery on sites with the lowest marginal cost. The challenge here will be the use of effective competitive tendering and the measurement of incremental ecosystem service delivery so that funders can judge the benefits and costs of alternative funding arrangements.

Farmers are generally best placed to determine the most valuable mixture of goods and services their land can produce and the most cost-effective approach to delivery, and by providing fair incentives in competitive markets, they will make better management decisions than any centrally determined policy could. Within nationally defined parameters, this allows local stakeholders freedom over how they manage their land.

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Procurement funds would be public bodies allocating substantial levels of funding for the provision of ecosystem services that can be difficult to value in monetary terms and may take time to manifest. It is essential, therefore, that these funds are accountable. The requirements here are not dissimilar to those governing the charitable sector. Namely, funds should be required to make their accounts transparent, and provide regular reports on their activities and achievements.

3.2 Local governance

The national procurement funds will create incentives for a range of organisations and landholders to deliver nationally significant ecosystems. But there is no reason to believe that this will produce a coherent pattern of land use and ecosystem services at a local level. As Bateman *et al.* (2013) point out, it is generally impossible to determine the most beneficial mixtures of goods and services in any area at a central policy level. A central government agency has much less information about the direct and opportunity costs of implementing changes in land use. We thus envisage a local level of governance organisations, Local Environmental Governance Organisations (LEGOs), which would provide funding for locally valued ecosystem services and ‘fill in the gaps’ that arise from the operation of the national procurement funds.

In principle, a LEGO would act like a board of trustees of a non-profit organisation seeking to use the available resources and influence in order to support the long term social value of ecosystem services to the local community. There is a parallel here with organisations having responsibility for the management of the commons, and the desirable characteristics of LEGOs would parallel those identified by Ostrom (2005, p.259) as being associated with the long-enduring governance of sustainable resources. This is discussed further by Dwyer and Hodge (2016).

Based on these principles, the LEGO would administer support for PES schemes, and create and finance procurement funds for the delivery of locally valued ecosystem services. These would be likely to include local landscape conservation, afforestation, provision of public access and biodiversity conservation. It could identify gaps in the outcomes arising from national procurement funding or areas where extra funds at the margin can make a significant enhancement. This would enable land management at the local level that integrates the complex considerations across the full range of ecosystem

services. It would also promote co-ordination and collective action amongst landholders, share information, and promote engagement between landholders and other stakeholders.

Various organisations currently work as partnerships in the delivery of ecosystem services at a local scale, such as Landscape Partnerships or Nature Improvement Areas. There is parallel here with Helm’s (2015) proposal for catchment system operators. Probably the closest parallel is with the operation of National Park Authorities (NPAs). NPAs have a wide remit across environmental conservation and recreation interests while fostering the social and economic wellbeing of the local community. Landholders within the Parks can benefit from national agricultural and environmental schemes and NPAs work in partnership with other organisations to advance the interests of the local area. At the same time, the NPA members provide democratic input while central government provides oversight of their operation.

We envisage a more comprehensive coverage of LEGOs nationally, perhaps operating at a catchment or National Character Area scale. There is a parallel here with the introduction of Local Enterprise Partnerships. The scale and depth of the operation of LEGOs would vary across the country. Localities with highly valued and complex environmental systems would justify more complex and sophisticated governance arrangements, while demands in other areas would be much lower (Hodge, 2016).

4. Implementation Issues

Our vision of a BESP represents a long term goal. It is not a policy that could be implemented immediately. But it is critical that policy post-Brexit is framed with a clear vision of a new direction from the outset in contrast with the uncertain aims that obscure the contemporary CAP. Policy development is subject to severe path dependency that inevitably compromises the potential for new initiatives and directions.

There would likely be a number of practical issues with implementing a BESP, which warrant consideration from the start. The following four sections describe these issues and propose approaches to addressing them. Section 4.1 describes capacity issues in designing and implementing a BESP, while section 4.2 considers potential funding arrangements. Section 4.3 then describes the specific challenges in constructing the necessary institutional framework, while section 4.4 notes the possible impacts of a BESP on farmers.

4.1 Capacity issues

Full development of a BESP would require considerable political, technical, and bureaucratic resources. These resources are likely to be stretched over the coming years by the large, complex, and uncertain task of leaving the EU. The UK will gain control over many policy areas currently controlled by the EU. While this will increase the UK's sovereignty over these areas, it will also require substantial institutional capacity which it does not currently possess (Packer, 2016). The Government has signalled that the many thousands of policies and regulations will be guided by a 'Great Repeal Bill' which will incorporate EU laws into UK law.

While transposing current policy and regulations poses problems, developing an entirely new approach would require yet more institutional resources and capacity. A first challenge will be developing governance structures with sufficient understanding of the principles, components, and terminology of an ecosystem approach (Dwyer and Hodge, 2016). A BESP would also require the development of new administrative and information management systems. These would be costly and would take time for those administering the policy and those engaged with it to become familiar with (Packer, 2016). Furthermore, these challenges would need to be met against a backdrop of funding cuts to organisations such as Defra, which would need to be the central agencies constructing a BESP. With the increased workload already on these agencies as a result of the regulatory upheaval of leaving the EU, concern has been raised about their capacity to manage the tasks required of them (CPRE, 2017; House of Commons Environmental Audit Committee, 2017).

It is clear that either the continuation of a UK version of the CAP or the development of a BESP would both pose considerable challenges for agencies responsible for agricultural and environmental policy and its implementation. A UK CAP would not be business as usual but would require the creation of all of the EU level institutions for decision-making, guidance and enforcement that currently operate under the CAP. While the initial cost of setting up a BESP would no doubt be larger than the cost of continuation of a CAP, the cost of continuation should not be underestimated and the benefits of a BESP are likely to outweigh the extra costs over time.

4.2 Financing a BESP

We do not attempt to work out a plan for the finance of a BESP, but clearly this is an important priority. The

encouragement of PES schemes, the financing of procurement funds and the support for local governance will require public funding. As explained in the introduction more than £3 billion per year is currently being spent under the CAP. Under a BESP, funding would be gradually shifted from fixed area payments as provided under Pillar 1 towards supporting PES schemes, financing procurement funds and supporting local governance. The total level of public funding needed for a BESP is uncertain. In 2009, Cao *et al.* (2009) estimated the costs of future environmental land management programmes to be roughly £2 billion per year. While this is likely to be higher now considering the costs of climate change (House of Commons Environmental Audit Committee, 2017), the CAP provides a clear precedent for funding on this scale. Initial costs of a BESP would be higher as information and implementation systems are established and participants become familiar with the requirements and opportunities. Over time, as with agri-environment schemes, administrative costs would tend to fall.

Funds would be shifted gradually and incrementally from fixed direct payments to provide support for the BESP as the capacity to implement an ecosystems approach is built up and in such a way as to avoid major disruption to agricultural businesses and the rural environment. This would be done in a targeted way, tending to maintain support levels in areas where farming is least profitable but where agricultural management is sought to maintain environmental values. Decisions about targeting continuing payments should be based on judgements about the social value of land uses and agriculture should continue to be supported where there are net social benefits to be achieved.

4.3 Creation of the institutional framework

A BESP would require substantial changes to the institutional context relating to land in Britain at both national and at local levels. As described in Section 3.1, a centralised organisation would need to be created to oversee the implementation of a BESP. The current regulatory bodies charged with influencing land use are not well co-ordinated. In the words of Lord Deben, "There's no hope of sensible land use while planning is imprisoned within the Department for Communities and Local Government, agriculture is the Department for Environment, Food and Rural Affairs, infrastructure in the Department for Business, Energy and Industrial Strategy, and long term transport planning in the Department of Transport" (CPRE, 2017, p.18).

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However, we do not envisage a simple amalgamation of government agencies or a high degree of centralised control. As we have argued, central government lacks sufficient information to be able to direct land uses at a local level. Integration is achieved through the appreciation of opportunities and trade-offs at the local level. The central government department would need to take a strategic approach to securing the long term social value provided by ecosystems in the UK. A strategic plan would be required to set out the principles and general approach to be taken to land use (CPRE, 2017). A central government department would, *inter alia*, have to manage the balance of funding amongst support for PES, the various procurement funds and local level governance – a balance that is likely to change over time. It would also be responsible for monitoring and evaluation of these mechanisms in order to manage the provision of value from ecosystems in an environmentally, socially, and fiscally responsible way.

Institutional arrangements are required to implement the national procurement funds. These could be operated from within existing non-departmental public bodies or might be set up as separate organisations. There is also a requirement for substantial institutional development in terms of local level governance. This would be built up initially from existing partnerships and initiatives. Work is needed to establish a clear view of the current distribution and activities of such partnerships and there will be a need to establish a more coherent and systematic coverage across the country.

4.4 Impacts on farmers

Replacement of the CAP with a BESP would have substantial impacts on farmers and farm businesses. Many farmers would obtain the bulk of their incomes from the sale of commodities. The BESP would remove the presumptive entitlement to public subsidy and challenge farmers to look for approaches to managing their land that can generate social benefits. They would need to be more entrepreneurial both in terms of the delivery of ecosystem services and in terms of their conventional farm businesses. And they would need to make judgements as to how these can fit together. This would often mean developing new relationships both with other farmers and with other stakeholders. Again, this would take time and cannot be expected to happen within a year or two.

There would also be losers. At this stage it is hard to judge the full net impact of a withdrawal of

direct payments on farm incomes. Arguments that only a small proportion of CAP subsidy end up in farmers' pockets imply that a reduced level of subsidy may do less to reduce levels of farm incomes than some might assume. There would be adjustments in land prices and agricultural rents, as well as potentially in other input costs, that would offset the reduction of government payments. Some farmers would be encouraged to leave the sector and it would be appropriate to support the process of agricultural adjustment. But the BESP, coupled with lower land prices and rents, may also be expected to ease entry into the sector and create new opportunities.

5. Limitations of a BESP

In addition to the implementation issues described in the previous sections, there are a number of areas of agricultural policy that a BESP would not account for. A BESP would not provide the support currently used to encourage agricultural research and technological development. It would not explicitly manage such areas as food safety, animal health and welfare, biosecurity, or invasive species. It would not support the extension work used to encourage farmers to follow best practice, but this is an issue that deserves attention. Farmers would face significant adjustment issues both in terms of adapting to changed subsidies and market conditions and of responding to the BESP. Public support for this adjustment through the provision of extension services would also be an important aspect of policy.

6. The BESP Way Forward

A fully operational BESP would promote the delivery of socially valued ecosystem services by encouraging PES schemes wherever they are feasible and financing procurement funds where they are not. It would use public money more cost effectively to deliver ecosystem services from land in Britain, and would be able to demonstrate this benefit in order to compete with other important public services for funding from the Treasury. A fully operational BESP is, however, a long term objective. In the short term, it is vital to set out in the right direction for achieving this in order to minimise the risk of defaulting to replicating the CAP.

There will need to be a process of transition between policies. While it is tempting to make these transitions as gentle as possible, cushioning arrangements carry the risk of becoming permanent (Hill, 2017). Policy direction, such as the removal of Pillar 1 payments, should be clearly signalled and given

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concrete timelines in order to provide clarity for those they affect.

In the immediate future a BEBP would resemble an extended agri-environment programme, setting incentives and encouraging the formation of collective initiatives to deliver ecosystem services. These could be financed by a transitional agri-environment fund, allocating grants on a competitive basis for projects that are best aligned with these objectives. Work should start immediately on the financial implications and institutional requirements for a BEBP. Government should produce a White Paper that sets out the justification and its strategy for the development of a BEBP. Work is needed within Defra on the arrangements for the transition from agri-environment funding, and for the encouragement of the development and weaning of PES schemes. The government would then set up procurement funds for the purchase of those ecosystem services which standard PES schemes are unable to support. It should start by focusing on tangible and easily understandable public benefits, such as the provision of biodiversity and public access, in order to encourage community buy-in (CPRE, 2017). It should monitor and evaluate the impacts of its spending, and remain open to new information in order to incorporate more ecosystem functions and better administrative processes as they become evident. Following these design principles, a BEBP would safeguard the long-term value society derives from ecosystems in Britain.

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