EU Business and Biodiversity Platform

Workstream 3: Access to Finance. Results of 2nd year work.

Financing Opportunities and Needs: Payments for Ecosystem Services
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1 Introduction

1.1 About this paper

Workstream 3 of the EU Business and Biodiversity Platform focuses on access to finance and innovative financing mechanisms for business and biodiversity. It aims to demonstrate the benefits to business of biodiversity-related investments, and to showcase financing schemes for biodiversity and champions in the finance sector who are funding biodiversity related projects or using nature related criteria for financing decisions.

In 2014 the finance workstream undertook a broad overview of initiatives and opportunities in the field of biodiversity finance, and showcased 15 case studies outlining the activities of Platform members in this field:


In response to the views of Platform members, in 2015 the finance workstream undertook a more detailed analysis of financial needs and opportunities in key areas of biodiversity action (certified products, offsets, green infrastructure, payments for ecosystem services, biodiversity friendly businesses). This included case studies of successful implementation under various financing instruments, both public and private, and examined the role of EU funds in this context.

This paper outlines the key findings relating to financing opportunities and needs relating to payments for ecosystem services. Where inputs and examples have been provided by B@B Platform members, these members are highlighted in bold text.

1.2 Background

Payments for ecosystem services (PES) are schemes where the beneficiaries of ecosystem services provide payment to the land managers who provide those services. In practice, PES often involve a series of payments to land or other natural resource managers in return for a guaranteed flow of ecosystem services above and beyond what would otherwise be provided. Payments can be made by the beneficiaries of the services in question, for example individuals, communities, business or government acting on behalf of various parties.\(^1\) There is growing recognition in a number of areas that PES can be a cost-effective mechanism for delivering multiple public policy objectives.

Biodiversity supports a range of ecosystem services, but provision of individual ecosystem services may not always align with biodiversity interests. A common challenge for governments, civil society and business is to communicate the additional value of investing in biodiversity-friendly sources of ecosystem services; for example, whilst a plantation forest may yield carbon credits at lower cost, this could conceivably have mixed or even detrimental impacts on biodiversity and may generate a narrower range of services (missing opportunities for water quality enhancement or flood alleviation, for example).

A distinction can be made between output-based and input-based payment systems: in the case of the former, payment is linked directly to the desired state of the ecosystem service (e.g. nutrient levels in groundwater). In the case of the latter, payment is made for a specific action that is assumed to lead to the provision of an ecosystem service. In practice, most PES schemes rely on some combination of these approaches, owing to the complexity of ecological systems. It is often helpful in considering whether a payment is more input or output-oriented in its design in order to consider whether the service provider has alternative courses of action to choose between at a local level.\(^7\)

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A distinction can also be made between practice-based PES (where the provider changes practices in order to supply an ecosystem service that would otherwise not be provided), and conservation-based PES (where payments are received for conservation actions that maintain existing ecosystem services). The latter are common in many developing economies, whereas many PES in Europe are based on restoration of degraded ecosystems in order to enhance ecosystem service delivery.

Bio-carbon markets are an emerging specialist category of PES, that involve compensation for storage or carbon in natural systems (typically forests, but also including peatland, wetlands and marine habitats). This recognises the key role that specific habitats play in sequestering carbon and combating climate change. Investment in the restoration or enhancement of these ecosystems may provide a more cost-effective route to decarbonising activities, or provide reputational co-benefits.

1.3 Scale of market opportunities

Market opportunities for PES are as diverse as the ecosystem services that can be provided. The global market for Payments for Ecosystem Services (PES) schemes is expected to reach USD $7bn by 2020. Nonetheless, there are a number of areas where market potential seems strongest at present, owing to existing regulatory or market incentives. The global value of government-mediated biodiversity PES for example (typically those linked to agricultural environmental measures and other public policies) is approximately USD $3 billion, representing a growth rate of 3.5% per annum.

The water sector is emerging as one of the dominant areas (the other one being forests) of opportunity for PES, owing in part to better understanding of the relationship between terrestrial environmental management actions and associated impacts on water bodies. Linked to this, there is a growing awareness of the potential cost-effectiveness of addressing water quality issues on an upstream (rather than downstream) level. The Upstream Thinking programme initiated by South West Water (UK) provides an interesting example of the integration and use of PES on a strategic level – helping meet regulatory requirements and ensure source protection. Commercial interests, in addition to legal requirements, thus play a role.

The UK and France (along with Chile) are the three countries worldwide with the highest share of private sector water provision. Environmental commitments for water companies in these countries are thus built into contractual designs, and there are increasing opportunities to attain benefits (or co-benefits) to biodiversity from investment decisions by these companies.

Box 1 Upstream Thinking (UK)

South West Water (SWW) provides drinking water and waste-water services throughout Cornwall and Devon along with small areas of Dorset and Somerset in southern UK – an operating area of more than 11,000 km2 with 1.6 million residents. Around 90 percent of the drinking water comes from reservoirs and rivers. The remainder is obtained from boreholes and aquifers. Since 1989, SWW has made substantial investments in environmental improvements to bring the region’s drinking water, sewerage systems and bathing waters into line with UK and European Union standards.

Those investments include the Upstream Thinking initiative with a total budget of £ 9.1 million over five years to manage water quantity and improve water quality at its source long before it reaches the water treatment plants. SWW started the initiative in 2008 with a pilot project to restore mires on 326 hectares of protected land. Today, Upstream Thinking is delivered in partnership with a range of organisations, including trusts, governmental institutions and universities. One of these has been initiated by the environmental organisation Westcountry Rivers Trust.

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Some £4 million is currently available for the WRT’s Upstream Thinking project. The money is used to encourage farmers in these areas to improve their land management through capital investment in the kind of infrastructure that will reduce the likelihood of pollutants from the soil and animals reaching watercourses. The payments are based on activities and developments carried out on a specific farm. Examples of farm infrastructure improvements include fencing to create buffer strips and keep the cattle away from the catchment, building a slurry pit or a roof over their manure store. Farmers could also reduce the livestock or improve their pesticide management techniques.

Farmers are required to cofund the investments, usually by 50 percent. There is no direct contact between the beneficiary and the service providers, the WRT acts as an intermediary. Accordingly, the development of trust between the single buyer, SWW, the intermediary and the numerous sellers was crucial to the success of the scheme.

South West Water is currently working to develop a reverse-auction process where farmers bid for funding in a River Improvement Auction. The scheme was piloted in 2012. SWW provided £360,000 for the reverse-auction, and around 50% of farmers participated, making bids that were double of what the regular scheme made available – suggesting that there is significant potential for improvements of land management.

As a result of regulatory concerns (specifically, the ability to address multiple policy priorities) as well as public relations opportunities³, there is growing interest in the private sector in the possibility of integrating biodiversity within more mature PES systems, such as carbon markets. The World Bank’s BioCarbon Fund, for example, recently announced a dedicated $280m Initiative for Sustainable Forest Landscapes, building on its broad portfolio of investments in forest and agro-ecological carbon stocks, and support from corporate partners such as Unilever, Mondelez and Bunge⁴.

Voluntary carbon markets are based on private funding, primarily for climate mitigation benefits, but generally with a greater emphasis on co-benefits than the compliance market. Regional voluntary carbon markets may be national or refer to one region within a country in scope, and typically target national or regional investors to contribute towards local restoration

schemes (Kossoy and Guigon, 2012)\textsuperscript{5}. Although they develop their own regional standards, they may draw on and adapt existing standards from the international carbon market. The global voluntary carbon market was valued at $569 million in 2011, which is significantly smaller in value compared to the compliance market with a value of $149 billion in 2011\textsuperscript{5}.

The dominant Verified Carbon Standard\textsuperscript{6} provides general standards for land-based climate change mitigation projects, and can now be used also to verify changes in GHG fluxes resulting from wetland, peatlands (including REDD+ activities on peatlands) and coastal marine restoration projects. Verification and accreditation via the VCS, however, can be costly and financially only feasible for large-scale projects or big investors\textsuperscript{7}.

Agri-environment schemes across Europe provide a major avenue to channel public funding into habitat restoration and creation (Reed et al., 2014)\textsuperscript{8}. These schemes are justified on the basis of paying for the fullest possible range of ecosystem service benefits (although these are often quite poorly quantified). Peatland is emerging as a key area of opportunity for biocarbon markets: peatlands provide the most efficient global store of terrestrial carbon. Degraded peatlands, however, contribute disproportionately to greenhouse gas emissions, with approximately 25% of CO\textsubscript{2} emissions linked to the land-use sector, and restoration can be cost-effective. Two key emerging markets for peatland restoration are the UK (where peat covers 11% of land area and is 80% degraded) and Germany (where peat covers 5% of total land area and is in a 95% degraded state).

**Box 2  MoorFutures – a regional carbon market in Germany\textsuperscript{9}**

The MoorFutures voluntary carbon market was launched in 2011 to support peatland restoration in the federal state of Mecklenburg-Vorpommern, North East Germany. It is now implemented in two other federal states, with more states considering to follow. The standard has been developed based on Verified Carbon Standard (VCS) Wetland Restoration and Conservation guidance: applying the VCS methodology in Mecklenburg-Vorpommern would be too expensive, as sites are relatively small in size, so the MoorFutures standard has been developed to suit regional conditions and to ensure cost-effective implementation.

Restoration projects are financed through the revenue generated through MoorFutures credits. These credits are retired and recorded in a federal state registry with a specific species number against the land registry. This allows investors to establish how many emissions reductions have been made. It also provides useful figures for inclusion within business communications.

Around 10,000 credits had been sold by mid-2014. Recently a MoorFutures 2.0 standard has been developed that incorporates other ecosystem services, such as nutrient cycling and habitat provision for biodiversity.


\textsuperscript{6} Accessible from: http://www.v-c-s.org/

\textsuperscript{7} Bonn, et al. (2014) Investing in nature: Developing ecosystem service markets for peatland restoration. Ecosystem Services,


Box 3 Peatland Code (UK)\textsuperscript{10}

The pilot Peatland Code is a voluntary standard for sponsoring peatland restoration projects in the UK on the basis of their climate and other benefits (Reed et al., 2013). It is designed to ensure the highest environmental standards and assurances on the carbon and other benefits of the peatland restoration work. It gives guidance to those undertaking restoration, and gives sponsors confidence that their contribution is making a measurable, verifiable and lasting difference to UK peatlands. By sponsoring peatland restoration, businesses can enhance their brand integrity and value, deliver corporate sustainability objectives and contribute strategically to the long-term protection and enhancement of landscapes.

The Code is owned by the International Union for the Conservation of Nature (IUCN) UK National Committee and is directed by a Steering Group with inputs from a technical sub-group. It defines eligibility criteria for projects in terms of the types of site and activities permitted and a number of additionality criteria that projects must meet. The Peatland Code sets out principles, requirements and guidance for the eligibility of projects, how projects are governed and documented, and how the climate and other benefits of restoration should be monitored.

At this stage the Pilot Phase Code is designed to facilitate business sponsorship motivated by corporate social responsibility; it is not yet intended for use in formal offset schemes, corporate carbon reporting or to be traded on international carbon markets. The Code does provide guidance on quantifying climate and other benefits, to reinforce the value of the sponsoring restoration, and it may be possible to count these benefits in corporate carbon accounts in future if Government guidelines allow. However, initially the Pilot Phase will focus on validating and certifying peatland restoration projects in selected pilot areas to help demonstrate peatland benefits and build an increasingly robust evidence base and methodology for future phases of Code development.

Box 4 Athelia Climate Fund

The Athelia Climate Fund, based in Luxemburg and London, has packaged many of the elements that bankers and conservationists alike say are necessary to attract private capital to large-scale ecosystem conservation projects around the world. Athelia is one of a handful of funds that finance reduced carbon emissions from improved practices in both forestry and agriculture.

Athelia’s first two investments aim to improve livelihoods for local residents and generate cash flows from “agroecology” products -- premium cacao in Peru and sustainable charcoal in Kenya -- to augment sales of carbon credits in the volatile voluntary markets. A guarantee from USAID limits investors’ loss exposure to 50 percent of their capital. Athelia is one of the first funds to offer long-term financing, including commodity-based lending adapted for rural enterprises, to reduce emissions from the full gamut of agriculture, forest and other land uses, or AFOLU, as it is known in the field.

In the Taita Hills of southeastern Kenya, Athelia’s investment of $10 million over eight years is intended to preserve 200,000 hectares of forest and savannah grasslands near the Tsavo national parks, among the largest in the world, and home to elephants, rhinos, lions, leopards, and hipppos. Wildlife Works, the local partner, already manages two nearby REDD+ projects (for Reducing Emissions from Deforestation and forest Degradation). The new project is significant in that it values the carbon stored in grasslands in addition to forests.

Athelia recently announced its second deal, a $12 million investment over seven years to finance conservation of 570,000 hectares in Madre de Dios, Peru, a recognized biodiversity hotspot. In addition, the investment will improve agricultural practices of a co-op of 1,100 smallholder farmers in a 4,000-hectare buffer zone. Athelia’s local partner, AIDER will help the farmers produce certified “zero-deforestation” organic and fair-trade cocoa.

Box 5 Biodiversity-based Economy Development Office (Thailand)

Thailand’s Biodiversity-based Development Office has recently initiated a major programme supporting environmental entrepreneurs in Khlong Prasong subdistrict, Muang, Krabi Province to make annual payments of 200,000 Thai Baht through PES (Payment for Ecosystem Services).

BEDO has also signed a memorandum of understanding with Charoen Pokphand Foods PCL. (CPF) in order to together conduct PES activities in a mangrove forest area. As well as launching the new project called “Plookrak” to give opportunities for any individual to donate to grow and protect trees (at a rate of 500 Thai Baht per 3 years). The Plookrak project has applied the PES concept to SMEs where the leaves of the trees grown can be utilized, together with traditional knowledge, to make products. For example, the product called “Chewana” is Bai Mee Butterfly Pea Shampoo which contains two main ingredients: Bai Mee (Litsea glutinosa (Lour.) C.B.Robinson.) (leaves) and butterfly pea (flowers). The leaves of Bai Mee were from the trees which are several decades old. Thus, the producers can pay a portion of their sale revenues for replacement tree planting. Meanwhile, participants also promote local community business by supporting a conservation of Mee trees.

1.4 Financing challenges

Financing challenges for PES schemes can be considerable. The multitude of ecosystem service delivery models raises transaction costs whilst reducing the potential to use standardised accounting and payment mechanisms. In addition, the fact that each PES scheme is largely designed from scratch means there are a range of inherent uncertainties in outcomes and returns on investment that can deter private sources of finance. Many ecosystem services can be difficult to measure, which can further complicate attribution of outcomes to expenditure.

Other challenges include the range of activities that need to be financed (e.g. significant upfront research, market analysis, partnership building, testing and piloting) and problems of coordinating buyers and sellers within payment structures. There may be high capital costs associated with ecological restoration, particularly in rural environments. There is also the risk of public PES schemes ‘crowding out’ activities that could be undertaken through private enterprise or on a voluntary basis.

Above all, a key limitation is the uncertain level of end demand for ecosystem services, including possible regulatory systems or markets relating to carbon or water quality trading. In most cases these systems are limited to pilot or localised schemes, limiting wider access to finance.

1.5 Sources of finance

Public sector funding remains the dominant source of support for PES schemes, particularly where these relate to agri-environmental goals, and PES are recognised as a useful tool to supplement regulation and drive environmental improvements through competition mechanisms in some cases. A key issue with regard to public funding is the generally constrained spending environment for many central and local governments. Since many PES schemes deliver a range of public goods, there may be strong incentives to ‘do more with less’ and build multiple ecosystems service benefits into management planning whilst exploring wider use of competitive tendering mechanisms.

The EU Natural Capital Financing Facility\(^\text{11}\) has been established to provide loans and equity investments in natural capital projects which support biodiversity and/or contribute to climate change adaptation.

adaptation. The total budget for the Investment Facility amounts to € 100 – 125 million for 2014-2017. The available funding under the NCFF is expected to allow financing some 9-12 projects over the 2015-2017 period with applications open on an ongoing basis. One of the four categories of projects that can be supported relates to Payments for Ecosystem Services: projects involving payments for the flows of benefits resulting from natural capital. They are based on the beneficiary pays principle: the beneficiary of an ecosystem service pays the provider for securing that service.

Private sector funding can be more attainable where PES outputs are clearly measurable – as in the case of water and carbon sequestration services. In the case of the former, incentives are both regulatory and commercial in nature – water companies and users can often secure their operations on a more cost-effective basis through the use of PES. Regulatory drivers include the EU Water Framework Directive, which provides a strong regulatory incentive to meet quality and quantity targets. Notably, many Member States have competitive funds in place to meet WFD targets. The incentives for investment in biocarbon at present largely relate to reputational drivers and decarbonisation targets under CSR reporting. Whilst ecological restoration works are rarely more cost-effective than other forms of decarbonising operations, these approaches also yield a range of reputational co-benefits that can be strong drivers for private sector investment.