

Natural Capital Financing for Peatland



All UK devolved governments made commitments to conserve peatlands. These commitments can only be met if natural capital finance becomes a reality. This note is prepared to raise awareness of the opportunities for financing peatland restoration and conservation, and to propose a framework for structuring such finance. This version of the note is being circulated following the seminar organised by the IUCN Peatland Programme, the Natural Capital Initiative (NCI) and the UK Network for Environmental Economists (UKNEE) on 13th September at the Royal Society for Biology. It will feed into the IUCN UK Peatland Programme's ongoing work.

Introduction

Natural capital finance and conservation financing describe investments to conserve the value of the natural environment for the long term. Globally, around US\$52 billion per year is currently invested in conservation financing, primarily from the public sector and charities (Credit Suisse et al., 2016)¹. Within the UK, Defra biodiversity spending, EU LIFE spending and NGO spending accounts for over £476 million per year (RSPB, 2018)². Peatland management and restoration has traditionally been an important recipient of such funding. Since 1994, EU LIFE has provided over £32 million in matched funding to repair and manage UK peatlands; and annual payments from the Rural Development funds for peatland management in the UK are in excess of £6 million per year³.

However, as the natural environment continues to degrade over time, there is a growing deficit in funding to maintain/improve its condition⁴. Within the UK, this gap in spending on land management to meet local conservation targets is estimated to be £1.8 billion per year (RSPB, 2018). Investment in peatland is a key part of this funding gap, where the restoration of the peatland habitat in the UK (i.e. not including

¹ See: Credit Suisse AG and McKinsey Center for Business and Environment (2016). Conservation Finance From Niche to Mainstream: The building of an institutional asset class. [online] Available at: [link](#).

² See: RSPB (2018). Bridging the finance gap: How do we increase financing for conservation? March 2018. [online] Available at: [link](#).

³ See: Keenleyside, C and Moxey, A (2011). Review of public funding of peatland management and restoration in the UK. [online] Available at: [link](#).

⁴ This follows the purpose behind the UNDP's Biodiversity Finance Initiative (BIOFIN). This note follows the taxonomy of the BIOFIN workbook. See: <http://www.biodiversityfinance.net/>.

maintenance) is estimated to need £500 million over the next 10 years (IUCN, 2016, pers. comms). The longer this investment is postponed, the greater the eventual cost of restoration will be.

Public and third sector sources are unlikely to provide sufficient additional funds. Therefore, private sector funding from businesses and investors has a key role to play, through the growing global potential of *green* finance. However, to date, there has been limited precedent on how this could be developed and applied - particularly in the case of peatland in the UK.

This briefing note is an introductory guide to natural capital financing with specific reference to peatlands. It summarises the two key parts of this type of financing: (1) developing a revenue-generating structure; and (2) organising the payments from (one or more) revenue source(s) into a financing *structure*.

Expanding from a revenue-generating to a financing structure

The primary requirement for a successful financing structure is its ability to **scale**, i.e. to raise sufficient funds to fill the funding gap through private sector investors. In order to attract sufficient and sustained funding, a (scale-able) revenue-generating structure (i.e. the system by which payments are received in return for natural capital benefits) is required.

The revenue-generating structure for peatlands begins with the returns from the restoration of peatland. To understand what these returns can be, we need to understand **what** the benefits are from the change to peatland; **who** benefits from these changes; and **how much** these 'beneficiaries' are willing to pay for these benefits. Although the focus of this discussion is on improvements, the issue of maintenance is also discussed later.

Peatlands naturally produce an array of (natural capital) *benefits*, also described as *ecosystem services*. An investment in peatland restoration could result in improvements in these benefits over time, including less carbon emitted; improvements in water quality due to reduced dissolved and particulate carbon (improving water colour); reductions in the risk of flooding due to reduced quantity and speed of water run-off; improvements in biodiversity within the peatland ecosystem⁵; and improvements in tourism, health and wellbeing opportunities. The specific mix and scale of benefits will depend on site characteristics and the scale of investment, while the timing of these benefits will be based on the biophysical processes of the natural capital assets. For example, carbon benefits are likely to occur in the first 5 years, while improvements in water colour will take longer. The monitoring of peatland restoration activities to date has developed the knowledge on how to forecast changes to carbon and there is government guidance⁶ and academic literature to provide some assurance on the impact on biodiversity and tourism, health and wellbeing. There is greater uncertainty on the magnitude and timing of the improvements to water colour and water runoff, even though pilot programmes initiated by water companies are producing some evidence on this.

The *beneficiaries* of these benefits include private organisations (e.g. a water company), individuals/communities (e.g. a town affected by flooding), or society as a whole (e.g. carbon regulation benefits for current and future generations). For some benefits, the beneficiaries are straightforward to identify (e.g. a water company for water quality improvements). Others can be harder to identify (e.g. those in future generations who value maintaining peatland biodiversity). Finally, a private individual could have both direct (e.g. from improvements to water) and indirect (e.g. through carbon and biodiversity) benefits from improvements in peatland. How much these beneficiaries are willing to pay for the benefits will depend on the

⁵ This service reflects how people value biodiversity for their own benefit. It is distinct from moral judgements on whether society should conserve biodiversity (e.g. based on other species rights to exist).

⁶ See: Defra (2012). Technical Paper: the metric for the biodiversity offsetting pilot in England. [online] Available at: [link](#)

beneficiary, the characteristics of the benefits (i.e. type, magnitude and timing), ease of transforming these benefits into payments and other factors such as regulation.

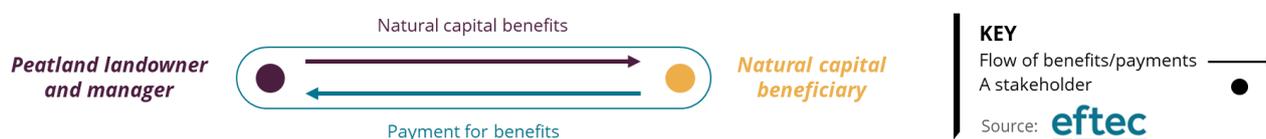
Examples for private organisations that are beneficiaries and could provide finance include:

- A water company directly benefits from cost savings to water treatment when improved peatlands can improve water colour.
- An organisation looking to reduce its carbon footprint could pay for carbon credits from a reduction in carbon emissions (through the voluntary carbon market).
- An infrastructure provider could pay for improvements in peatland biodiversity to compensate for damages elsewhere under a no net loss or net gain approach⁷
- An infrastructure provider could be incentivised to invest in peatland through their project financing. For example, financial institutions could set a lower interest rate in exchange for the infrastructure provider undertaking some restoration activities, and/or place covenants into loan agreement that require these activities be undertaken in the future.

The multiplicity of the benefits to individuals and community need to be reflected in the multiplicity of the sources of finance. For example, local government or the responsible environmental body⁸ could pay to secure reductions in flood risk and to reduce costs of investing in flood defences. Benefits to wider society, like climate change and biodiversity, take on more 'public good' characteristics, so national government payments and/or regulations would be needed.

As it is clear from the examples above, most of the benefits do not arise within a formal established market. Therefore, even when potential funding sources are identified, agreement will be needed on the magnitude, timing and certainty of delivery of both the natural capital benefits and the payment for these benefits. Uncertainties in the scale and timing of benefits can be mitigated by using assurance and third-party verification against commonly accepted standards and codes⁹, government regulation and/or through the use of trusted intermediaries (i.e. brokers). Where voluntary markets (e.g. for carbon) have been established, the market structure determines some of these.

Water companies in the UK have already invested in bespoke projects, including on peatland restoration and involving revenue-generating structures¹⁰. There is also a precedent for investment in carbon through land management with credits developed using the standard of the Woodland Carbon Code (over the last six years) and (more recently) the Peatland Code. As markets for these benefits are (currently) small and self-regulated, the benefits are often realised through upfront (bilateral) agreements between the beneficiaries and the peatland landowner/manager, where beneficiaries are willing to pay a defined amount for a prescribed benefit. A simplified visual outline of this relationship is presented in Figure 1 (below).



⁷ WSP (2016). Biodiversity Net Gain. [online] Available at: [link](#). Alternatively, development could occur on a site which includes peatland (e.g. wind farm construction), but this represents a different stage of the mitigation hierarchy and restoration would be a part of the on-site measures for no net loss/net gain.

⁸ In the respective UK countries: Northern Ireland Environment Agency (NIEA), Scottish Environment Protection Agency (SEPA), Environment Agency (EA), Natural Resources Wales (NRW).

⁹ These standards must still be flexible enough to allow for local contexts in their implementation.

¹⁰ For example: United Utilities - SCaMP; Yorkshire Water - Pennine Peat LIFE project; Scottish Water – project at Sandy Loch; South West Water - Mires on the Moors project

Figure 1: (Simplified) Revenue-Generating Structure

However, one of the issues with scaling the current revenue-generating structures is that they focus on one specific set of outcomes (i.e. the benefits). Given the uncertainty in the magnitude and timing of the different natural capital benefits, it is better to have multiple benefits to control (i.e. to 'hedge') the risks of uncertainties from individual benefits. This need for a **mix of benefits** is also what limits the appeal of this type of project financing to private sector investors¹¹.

There are some examples that have extended the revenue-generating structure beyond direct beneficiaries to investors, including one or more benefits in novel financing mechanisms. A financing mechanism refers to the way in which funding is collected from a (third-party) investor who provides the upfront investment for restoration and/or maintenance costs, which then feeds into the rest of the revenue-generating structure. The three broad types of mechanisms are¹²:

1. **Grants** – Encompasses transfers made in cash, goods or services for which no repayment is required, meaning no risk and no return for investors.
2. **Debt** - An obligation to make a future re-payment in exchange for an upfront investment. Investors expect repayment of their investment and may require some interest (or coupons).
3. **Equity** - The acquisition of ownership rights (company or financial asset) in exchange for a payment. Investors expect some dividends as repayments and/or capital gains (i.e. the difference between purchase and sale price) on sale of their rights (or shares).

Figure 2 is the simplest form of a financing structure, which extends the revenue-generating structure in Figure 1 to include a financing mechanism funded by an investor. If there were more than one mechanism, these could be organised into a single managed fund.

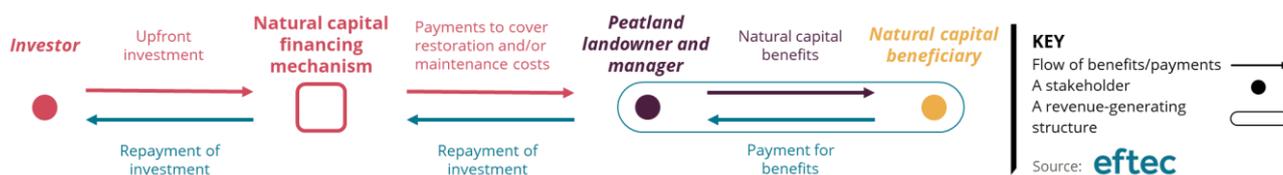


Figure 2: Extending the Revenue-Generating Structure – a Simple Financing Structure

Examples of this type of work include the Katingan Project¹³, which is considering the use of carbon credits and social impacts in the Indonesian Rainforest; Blue Forest Conservation¹⁴, which is aiming to fund forest restoration, through returns from benefits to the watershed and suppression of forest fires in California through combined debt and equity financing; and the DC Water Environmental Impact Bond, a pay for performance bond to reduce combined sewer overflows from green infrastructure investment in Washington DC¹⁵.

However, these approaches (so far) only focus on the low hanging fruit of natural capital benefits (carbon, water quality) and where direct beneficiaries are easily accessible (e.g. through markets). However, for conservation finance to succeed, funding needs to be at **different scales across the spectrum** of ecosystem

¹¹ There are a number of factors that reduce the appeal of this type of project-financing investment, which largely centres around this matching an investor’s risk return profile. The next section expands on this further.

¹² These are the key mechanisms, based on the UNDP Biodiversity Finance Initiative (BIOFIN) taxonomy (*ibid*).

¹³ See: <http://www.katinganproject.com/about-us>.

¹⁴ See: <http://www.blueforestconservation.com/#aboutus>.

¹⁵ See: https://www.epa.gov/sites/production/files/2017-04/documents/dc_waters_environmental_impact_bond_a_first_of_its_kind_final2.pdf

services (i.e. whether ready for the market or public good¹⁶) and not only include improvements but also maintenance to prevent the degradation of peatland (Box 1).

Box 1: Funding maintenance of peatland

Historically, changing economic and regulatory incentives meant that peatland landowners and managers drained land for other uses as peatland no longer provided an independent source of income. Nevertheless there were many land owners and managers across the UK who continued to manage and restore peatland based on an inherent responsibility to manage the land considerately. It is now important to create a financing framework that recognises the benefits of both the improvement and maintenance of peatland; engages landowners and managers and rewards the historic and current effort to maintain peatlands in a way that produces benefits for all.

In summary, the key requirements for a natural capital financing structure is that it should be one that: (1) can be **scaled**; (2) includes a **mix of benefits**; and (3) can (simultaneously) invest in multiple areas of land that produce benefits **at different scales, across the spectrum** of ecosystem services.

A framework for structuring financing for peatland

A framework that meets the above requirements is presented in Figure 3.

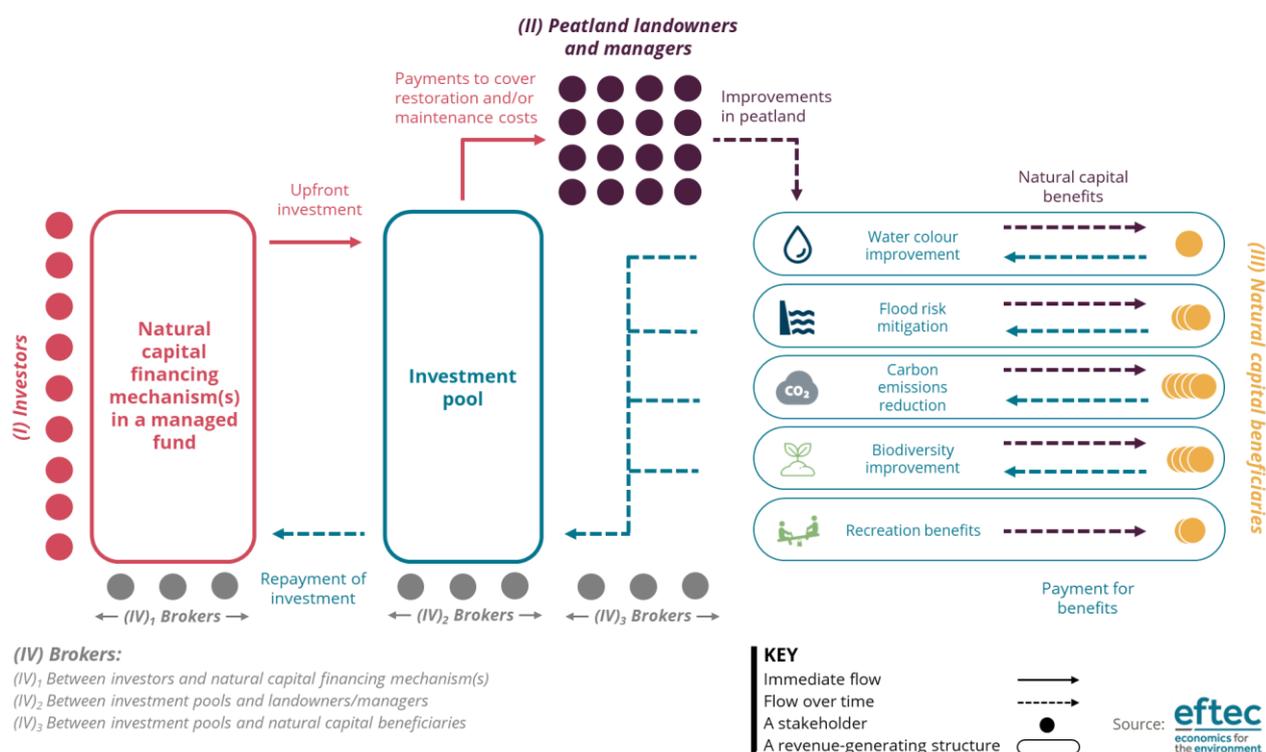


Figure 3: (Simplified) Natural Capital Financing Structure

Notes: Diagrammatically, all of the stakeholders in each group of actors (I-IV) is represented equally. In reality, they would vary by size (e.g. investment), type (e.g. farmers, companies, NGOs), interest in engagement etc.

¹⁶ See a summary of work by eftec and the Northern Upland Chain: <http://www.nuclnp.org.uk/wp-content/uploads/2016/01/NUCLNP-Natural-Capital-Investment-Plan-for-Peatland.pdf>.

- The flow of money from an upfront investment by investors into one or more natural capital financing mechanism(s) under a single managed fund.
- This money enters into an investment pool for disbursement to land owners/managers as revenue to meet the costs of maintenance and/or restoration actions¹⁷.
- These actions result in improvements (net gain or avoided loss) in the benefits provided by the peatland.
- As the benefits are realised, relevant beneficiaries make payments for these benefits within each revenue-generating structure. These payments also enter back into the investment pool.
- Over time, the pool of funds is used to repay the investors through the natural capital financing mechanism(s) in the managed fund.
- This virtuous cycle continues with further investment, improvement, repayment until the managed fund is eventually *wound-down/matures*.

This structure combines (or ‘stacks’) the benefits to attract a larger ‘pool’ of financing and hence could bridge the conservation gap and meet the key requirements identified. It can be **scaled**, given that the financing mechanism(s) are not limited by size and could grow as large as investors’ willingness to invest. Investors’ willingness is, at least partly, dependent on timely repayment from the **mix of benefits**, which are largely defined by the site characteristics of the peatlands. The proposed structure can ‘stack’ different benefits, which improves the possibility to hedge *some* of the risks related to the magnitude and timing of individual benefits. For example, if (actual) improvements to water colour do not reach projected levels due to above average rainfall in a given period, given that the carbon credits are unlikely to be affected, the latter could be used to prevent a default in payments. And, finally, there is the opportunity to invest in peatland producing benefits at **different scales across the spectrum** of ecosystem services (e.g. services relating to tourism, health and wellbeing as well as water colour improvement). The following section provides a more detailed outline of each of the four actors within this structure (I – IV in Figure 3).

(I) The term ‘investors’ refers to a huge spectrum of individuals and entities, each of which have different financial goals and motivations (Figure 4). On the right end of the spectrum, some philanthropic investors are willing to accept a full loss of capital in return for the possibility of achieving the benefits from natural capital – these are the smallest group of investors based on available funds for investment (i.e. assets under management). The UK government’s interest in ‘public money for public goods’ is most closely aligned to this, but the government could operate anywhere on this spectrum. On the other end of the spectrum are the larger, more traditional, investors like pension funds and (active) fund managers. They can only invest in ‘large’ investments (at least £ millions), require an above market return, and are averse to the relatively high risk (expected, at least initially) from natural capital financing¹⁸. In between, we have a growing niche of impact-driven investors that are willing to tolerate the higher risks in return for (at least) some financial return and maintaining their original investment (capital). Important to also note is that, in general, the *more* traditional the investor (i.e. further away from philanthropy) the more funds they have available (both as individual investors and as a group), but the larger the required minimum size of investment.

Investor type	Traditional	Responsible	Sustainable	Impact-driven			Philanthropy
Financial Goals	Deliver competitive risk-adjusted returns			Tolerate higher risk	Tolerate below market returns	Partial capital preservation	Accept full loss of capital

Notes: Adapted from *Growing from Growing a Culture of Social Impact Investing* in the UK (Advisory Group to look at mainstreaming a culture of social impact investment and savings in the UK, November 2017).

Figure 4: Spectrum of investors

¹⁷ Food production is not quantified as a separate benefit as (for example) sustainable grazing is considered a part of the management regime of the site.

¹⁸ More generally this relates to the ‘fiduciary duty’ of these types of (institutional) investors. It is a legal requirement that limits these investment decisions.

These financial goals also (broadly) map onto the applicability of different financing mechanisms outlined previously: grants, debt and equity.

There is, of course, variation within these broad groups of financing mechanisms. These are characterised by the technical features of the mechanism (e.g. the length/ 'term' of a bond), the underlying repayment mechanism (i.e. the revenue-generating structure) and the potential to 'price in' uncertainties into the required rate of return. While complex, it is possible to match the characteristics of the natural capital benefits (in terms of magnitude, timings and uncertainty) with the characteristics of the financial mechanisms. For example, public goods may be packaged within grants or only mentioned as a non-monetised impact in a bond (debt repayment). The proposed financing structure offers the possibility to stack multiple mechanisms (as well as benefits), matching each mechanism within the fund to an investor's goals and 'risk-return profile'. This is the basis of a blended financing system, which has been noted in the UK government's 25 Year Plan¹⁹. For example, the government could provide support for restoration activities within the mix of benefits and/or help alter the risk profile of the investment by offering guarantees for non-performance/ undelivered outcomes (i.e. acting as a source of 'first loss' capital). Interviews with investment experts conducted by Oliver Wyman for RSPB²⁰ suggest that there is an appetite in the investor community to invest in financing natural capital, but they do not currently see enough viable projects at scale to begin investing.

This is where **(II)** landowners/managers and **(III)** natural capital beneficiaries have a key role to play by helping the development, application and scaling-up of the revenue-generating structures (Figure 1).

(IV) The different brokers play a crucial role between each of the actors²¹. For example, they can help other actors make sense of the different information and data they are unfamiliar with. They can help mitigate some of the risks associated with the lags in delivery (of payment, natural capital benefits, monitoring reports etc.), as investors, landowners/managers and beneficiaries operate at different timescales. They can also fulfil the role of assurance and project management.

Finally, operating around this structure are external stakeholders like government agencies, NGOs, academics and consultancies who all have roles to play to develop the evidence base around the natural capital benefits and investments as well as to help set the agenda on natural capital financing.

Looking ahead

A number of activities are currently pushing the natural capital financing agenda forward. Recent reports released internationally (such as the European-level Action Plan for Sustainable Finance²²) and in the UK (e.g. the Green Finance Taskforce report²³) have directly targeted long term reforms required to enable green financing. Although a lot of the focus has been on green bonds, the recent backlash on the *greenwashing* of bond issuances has pushed the need for action, such as a more defined taxonomy and a consistent monitoring and appraisal methodology.

The proposed investment framework is framed in terms of natural capital and natural capital accounting as a monitoring and appraisal method so that a consistent approach can be applied for these types of investments from the start. Using the full accounting framework, as is being adopted nationally and regionally within Europe, focuses the analysis on the condition and extent of the natural capital. Framing the investment returns

¹⁹ See: Defra (2018). A Green Future: Our 25 Year Plan to Improve the Environment. [online]. Available at: [link](#).

²⁰ RSPB (2018). *Ibid*.

²¹ In the case of the first project registered under the Peatland code, Forest Carbon has taken on the role between the landowners and beneficiaries.

²² See announcement of: 'Commission's Action Plan for a greener and cleaner economy' on 3rd August 2018 ([link](#)).

²³ Green Finance Taskforce (2018). Accelerating Green Finance. March. [online] Available at: [link](#).

solely in terms of ecosystem services produced would focus unduly on the flows of benefits and miss changes in the underlying condition and extent of the asset.

The EU's LIFE programme funding has attempted to kick start this new wave of green financing through the Natural Capital Financing Facility (managed by the European Investment Bank) but has (to date) only discharged €33 million (over three financing facility projects)²⁴ out of an earmarked €100 – 125 million for 2014-2017²⁵. The UK has a unique opportunity to become a hub for the first major wave of natural capital financing projects, basing its investment decisions and monitoring the progress of restoration through its tradition of evidence-based reporting (like natural capital accounting) to provide land managers/owners and investors with a clear and transparent system of reporting in a familiar format.

The climate change discussion is also an important force pushing this agenda. According to a 2017 joint research study by NGOs and researchers from across the US and Europe, investment in improvements in land use (i.e. natural climate solutions) have an important role to play in meeting the Paris Agreement goal²⁶. Within the UK, there has been some action to invest in this (e.g. by the Scottish government and Defra). However, stronger impetus on climate change mitigation will develop when the UK's carbon budget begins to account for peatland emissions through the Land use, land-use change, and forestry (LULUCF) sector in 2020. This means government is obliged to take action within the next 16 months, paving the way for the development of financing mechanisms.

Actions

There are a number of key actions that the IUCN UK Peatland Programme will be working to achieve over the next couple of years to help facilitate the development of this financing structure:

- **Enable the development of a steady stream of projects** – A pipeline of projects will be required to ensure sufficient scale of investment, in order to attract investors, and to ensure that the restoration activities are carefully marketed with robust monitoring of impacts/ benefits integrated from the start. This will include engagement with both small and large landowners, as well as landscape scale partnerships.
- **Apply the Peatland Code in projects** – Commonly accepted standards (such as the Code) are important indicators of good practice, replacing the need to audit individual projects, and thereby help investors to meet the assurance expectations for their investments.
- **Build up the evidence base** – Gathering information on the required level of restoration, the expected benefits and the beneficiaries of improvements to peatlands from restoration (i.e. hydrology, atmosphere, soil etc.) would help reduce uncertainties in the delivery of benefits.
- **Communicate the experience** – Engaging in the development of: (1) The communication of current activities - The material from project closure conferences (required by multiple funding sources) need to better communicate the impacts of investment; and (2) The implementation of natural capital accounting as a reporting tool - Natural capital accounting provides investors a consistent means of monitoring and evaluating *green* finance. Given the use of this methodology by UK landowners/managers, beneficiaries and national governments, there is already a growing number of examples for peatlands²⁷. It will also be

²⁴ See project financed by the Natural Capital Financing Facility ([link](#)).

²⁵ See European Commission page on LIFE financial instruments: Natural Capital Financing Facility ([link](#)).

²⁶ See: Griscom et al. (2017). Natural climate solutions. [online] Available at: [link](#).

²⁷ For example, national level scoping accounts ([link](#)); the Northern Upland Chain investment case ([link](#)); and inclusion in landowner's accounts like the Duchy of Cornwall ([link](#)), for a water company (forthcoming) and Scottish Land and Estates (forthcoming).

important to complement this communication of experience with a broader call to action on peatland restoration.

- **Engage with government to develop the financing structure** – The UK and national governments have an important role to play in continuing to support public investment of peatland restoration and management. Beyond this, they have a growing role to play in supporting more innovative natural capital financing mechanisms, whether this is through a guarantee of the initial investment for investors, providing direct funding/investment or creating markets to realise the benefits²⁸.
- **Speak with investors** – There is a general need for the environmental community to engage with investors, to help them understand the complexities/uncertainties of green (whether 'light green' or 'dark green'²⁹) investments. In turn, the environmental community needs to understand what makes a project 'investible'. This engagement could come from involvement through sectoral (e.g. through corporates involved in nature-based solutions) and cross sectoral (e.g. the work of the BSI Committee on Assessing and Valuing Natural Capital and various ISO 14000+ standards on sustainable finance and economic valuation).

Among the investors, philanthropic and impact-focused investors are likely to be the first to invest in this type of financing structure³⁰. Within this group, it will be important to identify key 'champions' to help them understand the role of multiple benefits from peatland restoration, are willing to take on some of the inherent risks of this developing market and hold a long-term position within these investments.

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²⁸ For example, in the post-Brexit landscape, the current discussion for Pillar II investment appears to be moving towards a payment for environmental impacts, which could help feed towards the natural capital benefits payments. Even where markets have begun to form, as with the voluntary carbon market, a more formal system could reduce transaction costs and encourage supply and demand.

²⁹ 'Light green' refers to investors/investment strategies that have a relaxed criteria (or commitment) around environmental impacts when selecting investments, while 'dark green' investors/strategies are more defined (and committed) around environmental requirements.

³⁰ Although this will limit the initial size of projects, it will help set the precedent for development to scale.