

## **Scotland's Rural College (SRUC) Thriving Natural Capital Challenge Centre – Written evidence (NSD0040)**

The aim of SRUC's Thriving Natural Capital Challenge Centre is to research and build ecosystem markets to meet net-zero targets and reverse biodiversity decline. We will do this while supporting thriving rural communities through regenerative agriculture and conservation. Centre Director, Prof Mark Reed also sits on the Executive Board for the Peatland Code (which he helped develop originally) and is on teams developing a UK Farm Soil Carbon Code and a Saltmarsh Code. More at: <https://www.sruc.ac.uk/research/challenge-centres/thriving-natural-capital/>

This response focuses on question **3: *What frameworks already exist for the regulation and financing of nature-based solutions?***

### ***What can be learned from the implementation of the Woodland and Peatland Codes for the regulation and financing of nature-based solutions?***

The Woodland Carbon Code and Peatland Code have demonstrated the potential for robust standards to stimulate markets for nature-based solutions, and these are now being replicated through the development of similar standards for farm soil carbon, kelp, saltmarsh and rewilding through the Environment Agency's Natural Environment Investment Readiness Fund.

Demand for peatland carbon now exceeds the available supply of Peatland Code projects. Key supply-side issues include:

1. Lack of awareness among the land management community of opportunities to restore peatlands under the Code
2. Uncertainty from Government around future eligibility for agri-environment schemes
3. Complexity and red tape associated with developing projects for the Code
4. Too few advisors with project development skills to raise awareness and reduce complexity by developing projects on behalf of their clients
5. Length of contracts and fears that entering into a long-term commitment may depress land values, especially in high land value areas
6. Insufficiently attractive financial incentives available via the Code (based on PIUs) to overcome the above barriers to uptake
7. A limited number of skilled contractors available to do restoration works

Potential solutions:

- Clear messaging from UK Governments is needed about eligibility for future agri-environment schemes if land is entered into the Code (whether eligible or ineligible – certainty needed). Post-Brexit Agri-environment schemes should integrate the Peatland Code (and other ecosystem markets) into their application procedures, signposting specialist help where needed, to make the Code more accessible to landowners and simplify the integration of public funding with the Code. Ideally, there needs to be a consistent interface between publicly funded Agri-environment schemes and the Peatland Code across all four UK countries.

- A new more attractive funding model for Peatland Code projects that pays for capital works while letting landowners hold onto Peatland Carbon Units as they are verified, with a guaranteed (and attractive) floor price at which they can sell PCUs to Government if the carbon market can't pay higher
  - NatureScot discussing possibility of just such a Peatland Carbon Guarantee with Scottish Government, alongside a range of options to blend private with public funding
  - Defra/Natural England are exploring options for the Nature for Climate Fund to leverage private funding via the Peatland Code which could be similarly attractive, and are also considering a future Peatland Carbon Guarantee
- Once the financial opportunity is strong enough, it should be possible to mobilise the land advising community to raise awareness of Code opportunities and develop projects (training needed), and impact on land value likely to be positive. Potential for publicly funded project developers being considered in Scotland and England
- One potential solution to the supply challenge is to acquire land with the goal of restoring it through the Code. Some pension funds are looking at land acquisition for carbon, projecting strong returns for investors based on land and carbon values. Peatland sites may be more attractive than tree planting sites because entering them to the Code does not result in a loss of land value (unlike changing productive farmland to forest). However, feedback from local communities and professionals about the recent Brewdog acquisition in Scotland has been mixed, and there is already evidence (presented by Savills to the Scottish Land Commission's roundtable on land acquisition for carbon) that interest from natural capital buyers in upland estates is pushing land prices up.

### ***How should a hybrid public-private financing model be regulated?***

The answer to this question is based on research accepted for publication pending revisions in PLOS ONE. The final version of this paper is not publicly available, hence providing this response, but an earlier version of the paper is available as a pre-print (see References below).

Reed et al. (in press) highlighted a number of potential areas of conflict between public funding for natural capital and privately funded ecosystem markets. These included the potential for public funds to outcompete private funds (e.g., where public schemes offer more attractive terms including shorter contract lengths and simpler or more familiar application processes), that would otherwise have enabled the market to deliver the public good. The research also identified considerable uncertainty over future public schemes as the UK develops and trials post-Brexit policy over a relatively long time-frame, which could freeze the market, with potential sellers withholding projects until they know whether they will get a better price or terms under existing private schemes versus future public schemes.

A lack of integration between public and private schemes may also impact supply of projects to the private sector where those supplying projects consider the terms of public funding preferable to those available from private schemes.

However, as summarised in Table 1, it may be possible for grant payments under future public schemes to be designed to leverage private investment. The options described in Table 1 show how public funding might be designed in future to incentivise participation in privately funded payment for ecosystem services schemes, enabling the market to deliver significantly more public goods than it currently provides, while reserving public funding to address market failures and avoid distributional justice concerns about inequitable benefits arising from an entirely market-driven system.

Several of these approaches may work best in combination. For example, funds delineation (Table 1) prioritises projects for the market that are able to deliver the most in-demand ecosystem services at the lowest price (often climate mitigation benefits), reserving public funds to pay for projects that are more expensive per tonne of carbon, but that offer other important ecosystem services that have a high value to society e.g. biodiversity or recreational benefits. A cost-benefit matrix (Table 1) or decision support tools such as the tool developed by Artz et al. (2013) for Scottish peatlands, could be used to identify sites most likely to deliver cost-effective GHG emission reductions based on the level and type of degradation, and factors likely to influence the cost of restoration, such as accessibility. At the same time, this tool could be used to delineate sites that would be more expensive to restore, but where there may also be important biodiversity and water quality benefits, reserving these sites for investors more interested in these outcomes, and prioritising public funding to sites and/or ecosystem services that the market fails to deliver. Where schemes do not allow overseas investment, the climate mitigation benefits of these privately funded projects count towards domestic net zero targets. However, where overseas investment is permitted, a balance has to be struck between the need to use public funding to meet net zero targets (and so designing public funding schemes to compete with private markets for the most cost-effective sites) versus prioritising sites where market failure is most likely to result in a lack of funding for public goods from nature. Funds delineation is relatively straightforward to implement (compared to many of the other options discussed below), but there is a danger that making room for private markets in this way doesn't leverage additional private finance in some of the ways that other approaches can. Having said this, funds delineation is likely to stimulate some additional private investment by removing the option of public funding for the sites that are most attractive to the market, ensuring public schemes do not compete with private schemes, and increasing the number of projects that are therefore offered to the market.

In contrast, carbon trigger funds and match funding (Table 1) provide a much stronger leveraging of private finance, directly stimulated by public investment. In the case of trigger funds, a proportion of public funding for projects is held back, and only released if a certain level of private investment can be secured within a particular time frame (typically after a project start date). The likelihood of securing private funding is then one of the selection criteria for public funding of these projects, ranging from signed contracts and letters of intent to the plans and track record of the project developer or an intermediary they are working with to bring in private investment. Carbon trigger funds are complex to administer, and a proportion of projects won't ever actually get the private

funding they seek. These projects won't draw down the second instalment of their grant, leaving the public funder with projects that don't reach their public good potential or private finance leveraging. However, if designed appropriately (e.g. restoring or planting up part of a site, rather than doing ground work across a whole site ready to investment that never materialises), projects may be able to deliver some benefits with public funding if they fail to get private investment. Because these are more likely to be in sites that deliver cost-effective climate benefits (to attract private investors), running a carbon trigger fund to stimulate private investment in the most attractive sites alongside funds delineation may provide governments with an attractive combination of leveraging power whilst considering issues of equity and distribution of benefits.

One of the challenges of funds delineation is identifying which sites should be prioritised for public versus private funding, and carbon trigger funds are likely to prioritise projects on the basis of their ability to leverage private funding, rather than the efficiency with which they can deliver carbon and other benefits. The carbon guarantee (Table 1) is more likely to identify the most cost-effective sites for private buyers because it relies on a reverse auction to prioritise sites to be supported by the guarantee. It has the potential to mobilise private capital to finance restoration in the long term, replacing the year-to-year public grant system, whilst giving confidence to both project developers and investors. The mechanism has so far been tested through the Woodland Carbon Guarantee in England, but it has the potential to be replicated in other ecosystem markets especially in national carbon markets or where independent standards exist, such as the four peatland standards reviewed by Reed et al. (in press). While the Woodland Carbon Guarantee typically relied on public funding to subsidise tree planting, future guarantee mechanisms could raise private capital to pay for capital works. For projects that require significant funding up front, for example to plant trees/hedgerows or do restoration works, there are currently two main options (which may be used in separately or combination). First, projects can use public grant funding, requiring the majority of project costs to be paid by the public and limiting the capacity for private funding to be leveraged. Second, some schemes allow projects to forward-sell "pending issuance units" once projects have been validated, prior to verification, at a significantly lower price than they would expect to achieve for verified units at a later date, to cover up-front project costs. However, this is a major disincentive for project developers who receive a fixed price for their carbon up front, which could have been worth significantly more had they been able to retain the units for future sale. However, the carbon guarantee mechanism opens an alternative funding mechanism for paying up-front project costs. If financing is agreed with impact investors with the terms made known to project developers prior to a reverse auction, these repayments (with interest) can be incorporated into bids, creating a floor price that enables projects to repay their finance, in addition to covering their own costs and profit. Investors may even provide commitments contingent on successfully accessing a guarantee. This then means that the carbon guarantee mechanism leverages both carbon finance and impact investment, giving the private sector confidence to invest in projects, knowing that project developers will be able to repay investment with a return by selling carbon units at the floor price via the guarantee if carbon markets are not able to sustain higher prices. If carbon markets are able to pay more than the floor price, then

investors are repaid, and project developers retain any additional profits. There is a possibility under certain conditions that public funds (reserved in case the guarantee mechanism is triggered) are never used, and ecosystem services are delivered entirely via private funding, enabling public funding to be re-invested in future rounds. Conventionally, guarantees are offered at a project level.

Finally, it is possible to envisage the blending of public finance with multiple, co-ordinated private schemes. Funds delineation might reserve specific landscapes for private investment using a cost-benefit matrix, with carbon trigger funds, a match funding principle or guarantee mechanisms to leverage carbon finance, to pay for woodland creation, peatland and saltmarsh restoration or regenerative agriculture interventions that sequester and store soil carbon. Where interventions are too expensive to be paid via carbon finance alone, payments for biodiversity might be layered on top of the carbon finance to make projects financially feasible. If co-ordinated at a landscape scale by an entity such as LENSs, it may be possible to aggregate demand for layered, fungible services such as carbon and biodiversity, with non-fungible services such as water quality and animal welfare (defined as a public good in UK law) for buyers seeking to reduce risks to their business from climate change or other drivers of change. At the same time, some land within the same landscape may be eligible for entry to agri-environment schemes to pay for interventions that deliver services not included in private schemes.

**Table 1:** Mechanisms for integrating public and private peatland payments for ecosystem services in the UK (from Reed et al., in press).

Description	Strengths	Weaknesses
<b>1. Funds delineation</b> – using public investment to fund a discrete menu of ‘value-added’ components within a package of nature-based solutions		
The concept here is to break out and use public funds for practical scheme components that are ancillary to privately funded ecosystem function delivery, and for which there is a clear public benefit justification. Designed-in and delivered from the start, these would ideally be spatially defined and discrete within a site.	<ul style="list-style-type: none"> <li>• Clear ‘lines of sight’ between sources of funding and outcomes, help with transparency.</li> <li>• Helps boost scale and viability of projects.</li> <li>• Funds multifunctionality.</li> </ul>	<ul style="list-style-type: none"> <li>• May not realise the full potential for ‘leverage’ presented by more fully integrated payments and action.</li> <li>• Potential for funds to be mis-allocated – for example funding public access infrastructure that realistically will only be used for site management.</li> </ul>
<b>2. Trigger funds</b> – setting up government funding that only ‘triggers’ when a certain level of private sector funding is achieved		
‘Trigger funds’ would be government funds (directed at carbon, and / or other site outcomes) that would only be released once a certain level of private payments was reached. A single universal percentage level could be used, or stepped trigger levels could be used based on site prioritisation (ideally determined regionally)	<ul style="list-style-type: none"> <li>• Allows Governments to co-fund ecosystem functions, without ‘squeezing out’ private sector finance.</li> <li>• The effect of private finance triggering public funds could assist in demonstrating additionality.</li> </ul>	<ul style="list-style-type: none"> <li>• Set too low, trigger levels may have the effect of capping the level of private sector funding.</li> <li>• Trigger funds would create organisational complexity</li> </ul>

<b>3. Establishing fund-matching / co-investment as a default principle</b>		
An extension of 'trigger funds' in that it establishes a wider default that public funds should only be issued on the basis that a level of private sector funds are already in place for a package of nature-based solutions.	<ul style="list-style-type: none"> <li>• 'Signalling' to build confidence within the marketplace – avoiding both demand and supply side players being caught in an 'opportunity cost dilemma'.</li> </ul>	<ul style="list-style-type: none"> <li>• Risk that public-benefit oriented projects, where there is little private sector demand, will be disadvantaged.</li> </ul>
<b>4. Using a transparent cost-benefit matrix to target public sector funds</b>		
Public funds would be adjusted according to a matrix of public benefit versus private finance potential. Stepped, or differential, rates of funding would need to be guided by a transparent set of tests.	<ul style="list-style-type: none"> <li>• Creates 'smarter' funding, 'stepping up' funds for more difficult, or public-good oriented schemes or locations.</li> <li>• Provides a 'safety net' to fund valuable projects for which there is no private market</li> </ul>	<ul style="list-style-type: none"> <li>• Adds complexity, and requires a defensible and widely applicable set of tests.</li> </ul>
<b>5. Creating integrated systems for public-private implementation</b>		
This is an organisational task; to enable public and private funding mechanisms to interact. It means overcoming mismatches in organisation scales, timelines, terminology, definitions, and metrics. Integration could happen in various ways but is scale dependent; a funding synergy in East Anglia won't be the same as one in Cumbria. Our recommendation is that public funding shapes itself around emerging private sector markets.	<ul style="list-style-type: none"> <li>• System integration (or at least alignment) will be critical to avoiding public sector funds neutralising potential private sector investment.</li> </ul>	<ul style="list-style-type: none"> <li>• Depending on the level of integration, it could increase bureaucracy, and reduce the agility of private sector delivery.</li> </ul>
<b>6. Carbon guarantee mechanisms</b>		
Public funds can be used to provide guarantee mechanisms for PES markets that can help de-risk projects and funds for private investors. For efficient use of public funds, guarantees can be awarded via reverse auction mechanisms to allow projects or funds to compete with each other, thus optimising value for money. Guarantees effectively act as an option to sell carbon units in the future for project developers and/or funds, if the market cannot offer a more attractive price. This certainty over future income streams can unlock impact investment in addition to carbon finance, and incentivises developers to put forward projects because they are able to retain carbon units for sale at higher prices than they	<ul style="list-style-type: none"> <li>• Avoids risk of crowding out private sector as it provides a potential revenue stream rather than just capital</li> <li>• Value for money can be achieved through reverse auction mechanisms</li> <li>• Criteria for auctions can be used to direct support into targeted subsectors and regions</li> <li>• Ultimately if markets offer better prices, the guarantees may not be exercised thus freeing up public funds</li> <li>• Proven to be effective in unlocking private capital in the UK in renewable</li> </ul>	<ul style="list-style-type: none"> <li>• Requires long-term public-sector commitments</li> <li>• Does not explicitly deal with supply chain issues. While growing the market will help supply chains to develop, they may still require additional public support.</li> </ul>

<p>can achieve by pre-selling pending issuance units prior to verification.</p>	<p>energy and woodland creation markets</p> <ul style="list-style-type: none"> <li>• Opportunity to create a profit capture mechanism to capture a proportion of market upside performance to recover capital for the public sector.</li> </ul>	
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10 September 2021

### References

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