



## Science and Technology Committee

### Corrected oral evidence: Nature-based solutions for climate change

Tuesday 26 October 2021

11.05 am

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Members present: Lord Patel (The Chair); Baroness Brown of Cambridge; Viscount Hanworth; Lord Holmes of Richmond; Lord Kakkar; Lord Krebs; Baroness Manningham-Buller; Lord Sarfraz; Baroness Sheehan; Baroness Walmsley; Baroness Warwick of Undercliffe; Lord Winston.

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Questions 85 - 93

#### Witnesses

Dr Mike Morecroft, Principal Specialist, Climate Change, Natural England; Richard Greenhous, Director of Forest Services, Forestry Commission; Melissa Swartz, Catchment Funding Senior Adviser, Environment Agency.

#### USE OF THE TRANSCRIPT

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## Examination of witnesses

Dr Mike Morecroft, Richard Greenhous and Melissa Swartz.

**The Chair:** Dr Morecroft, Mr Greenhous and Ms Swartz, thank you for joining us today. We most appreciate you making the time to help us with our inquiry in this session. My colleagues in turn will have some questions to ask you. We will see if we can get through that in the next hour.

Q85 **Baroness Sheehan:** Could I start by asking each of you to briefly describe the role that your public delivery body will play in supporting the deployment of nature-based solutions at scale? Do you think that you have everything you need to scale up to meet the government targets for both climate change and nature restoration? If there are any gaps in what you need, could you make some suggestions as to how they might be filled? Could I start with the perspective from Natural England, please?

**Dr Mike Morecroft:** We have a unique role as an adviser, delivery body, regulator and provider of scientific evidence. It is important that we see the whole concept of nature-based solutions within the wider perspective of how we manage the natural environment better, how it is conserved, enhanced and managed for the benefit of future generations, biodiversity and landscape protection, and access to the countryside.

This wide remit is an important background to what we do and nature-based solutions—NBS—sits quite well within it. NBS contributing to fully tackling the climate change challenge and wider environmental hazards is one of our five-year aims at the moment, alongside establishing a Nature Recovery Network and connecting people better to the environment.

What do we do on NBS? We deliver some nature-based solutions on the ground, including quite impressive examples of peatland restoration. In Cumbria, for example, Bolton Fell Moss, which was once a heavily extracted horticultural peat site, and Roudsea Moss are both managed as nature reserves now. We also work with partners, for example, on managed realignment schemes in places such as Steart, Alkborough and Wallasea, often working with the Environment Agency and local partners to create intertidal habitats there, which can be very good for climate change, adaptation and mitigation.

It is worth briefly touching on our scientific remit. Science is important to everything we do in underpinning it, and we develop the scientific evidence base. We published a report on carbon storage and sequestration by habitats in the last year, which has been very widely taken up already and informs decision-making. We are involved in the Nature for Climate Fund, particularly managing the peatland element of that as well as supporting the woodland creation side. We have a new pilot project on nature-based solutions at the landscape scale. We will probably come to that, so I will not elaborate too much further at this stage.

It is also important to say that 'local' really matters here. We have some really good local advisers who have built up relationships with farmers and land managers over the years. The local application to ensure the

best, most appropriate result in the right place—in terms of the carbon, the wider environmental benefits, and the needs of the communities in the area and, of course, those making their living from the land—often needs a lot of long-term commitment and engagement by skilled people on the ground.

The question is really quite dense, so forgive me for going on a little bit about how things might develop. One of the key things is carbon markets, and we are actively working to find our role there, which is probably in the enabling space to enable those to develop and play their part.

In terms of resources, we are certainly in a better place this year than we have been for many years with the budget, which is unquestionably a help. A long-term commitment—I have mentioned the phrase “long term” again—is important. These things take a long time to establish. Working with people on the ground takes a long time, so I would highlight the need for long-term stability and commitment in resources.

The final point in answer to this couple of questions is about building capacity to do work on nature-based solutions alongside the other work that we do. We have the right skills and people with the expertise, but we probably do not have enough of them. We need to build skills within the organisation through training. We also need to recruit more people with specialist knowledge, which we are doing, but this all takes time to develop. That is probably enough from me for now.

**Richard Greenhous:** The Forestry Commission is a government expert body on sustainable forest management. We are charged with expanding, protecting, improving and connecting trees, woodlands and forests largely in England, although some of our remit extends beyond that. For nature-based solutions, we are primarily involved in the planning and planting of high-quality woodland. We have our woodland creation planning grant to help with the good planning, and our England woodland creation offer to support the actual planting and growing of those new woodlands as a nature-based solution.

We also regulate that to make sure that everything meets the UK forestry standard so that we have the right trees planted in the right places for the right reasons. The England woodland creation offer we now have in place supports nature-based solutions even more by providing supplementary payments for woodlands that deliver extra public goods.

As Dr Morecroft was saying, there is a need then to work with the whole of the capacity of the sectors involved here, so we are doing just that. We are working with the whole supply chain as is necessary to accelerate delivery. For us, that is from seed supply through nurseries and the whole forestry sector to help to grow their capacity and skills as well as our own.

We have also established a new team to promote woodland creation and drive demand, so we are working on both the supply and demand sides. Our own agency, Forestry England, which manages the nations forests, is also directly engaged in delivering woodland creation on the ground

through its woodland partnership leasehold scheme to create and manage new woodland. We also have our research agency, Forest Research, that provides a lot of the evidence behind our woodland-based nature solutions deployment, so the modelling behind the Woodland Carbon Code and the development of the future woodland for water code.

Lastly, on what we do, it is not just about woodland creation. We are also working with Natural England and Defra to make sure that we have a good framework in place for removing poor-quality plantations from peat where that is the right thing to do, in order to protect the carbon store and contribute to other public goods such as flood resilience. Do we have what we need to do all this? I hope you will recognise that I have described that we are doing an awful lot.

If I answered this question a couple of years ago, I would have said, "No, we don't have enough", but the nature for climate fund has been transformational for us in the unprecedented investment it is providing and to meet unprecedented aspirations to drive up woodland creation. That has given us the capital required to work ourselves and with delivery partners to ramp up woodland creation rates and ensure that we regulate it well. As Dr Morecroft said, we need that to be sustained for the long term so that we provide that certainty that the sector wants and that we need in order to keep driving up woodland creation as a nature-based solution for the longer term.

**Baroness Sheehan:** Melissa Swartz, would you like to say your part and, I hope, fill in the gaps that have been left by the other two witnesses?

**Melissa Swartz:** At the Environment Agency, we recognise the need for nature-based solutions. We advocate their use through our multifaceted roles as a regulator, for example in the way we influence the water industry's investment into nature, as an operator through our maintenance and building of the flood and coastal risk management programme, and as an adviser where we work in partnership with others to enable the delivery of nature-based solutions.

It is fantastic now that the visibility of nature-based solutions has improved and people are starting to understand their multiple benefits, not just environmentally but the socioeconomic benefits that they bring to people. With the project that we are working on together, we are hoping to build on that foundation and develop some approaches that we can use to mainstream and scale up nature-based solutions across the country, largely through blended funding from different policy areas—agriculture, flood, water and some nature-recovery areas of work.

By looking at the landscape scale, we can better understand how these different nature-based solutions can provide multiple benefits for us, how they work together as a system and how we can then use that to get those multiple benefits. In going forward, for the Environment Agency, we need to scale up our existing catchment-based approach. It is a very place-based approach, but we need to scale it up to work across bigger areas. Blended funding can give us an opportunity to do that because it

will allow us to work across policy areas to fund and implement nature-based solutions at a greater scale.

We need to find ways of demonstrating how we can do this, and how we organise ourselves and build these new skills. We need to evolve our regulatory frameworks to support that. This is something we have proposed for the recent spending review and, if successful, should help us evolve our regulatory method while maintaining a regulatory baseline so we can support these new environmental markets that are in development, which many of the previous witnesses have spoken about.

We would look to support a central hub of knowledge exchange or a centre of excellence for nature-based solutions. The consortium of people working on the natural environment investment readiness fund is looking at that, and I think that was also a spending review proposal. That would be an excellent resource for building skills on the implementation and development of standards for nature-based solutions.

**Q86** **Baroness Walmsley:** I have a quick follow-up question for Mr Greenhous, please. We have heard about the availability of resources, people, skills and so on. Can you say something about the availability of trees? I understand that we are trying to grow more of our own trees to avoid importing diseases. Is that putting a great pressure on our own horticultural industry? Is there anything the Government could do to support them if that is the case?

**Richard Greenhous:** Yes, we need to ensure that this is got right in order to be able to accelerate woodland creation at the rates required, so, yes, we need enough seed and plant supply. I have been pleased to see how the nurseries have been growing in recent years, responding to the additional demand that there is. That should continue as the greater confidence builds and demand increases.

The biosecurity point that you alighted on is really important. That is why we, Defra and the Animal and Plant Health Agency are supporting the Plant Healthy standard to ensure that we have biosecure nurseries and supply where things can be grown and sourced domestically. That is great.

We also think it is right to source some seed from more southerly provenances for resilience purposes but must do so in a biosecure way. We have been working with the Scottish Government to provide support for additional investment in nurseries to grow their capacity. We will continue to work with the nurseries as closely as we can to ensure that they and we together can grow the supply and demand in concert with each other.

**Q87** **Lord Winston:** The question I have, which follows on quite well, is about government plans, policies and strategies. Which do you feel are most relevant in supporting nature-based solutions and, of course, could they be better co-ordinated?

**Melissa Swartz:** Water management, whether it is for quality, supply or flood risk, is largely dependent on land management. People will feel the

impact of climate change through water, whether that is through water shortages or through the impact of having their homes and land flooded. Nature-based solutions focus on using land management techniques, and, as you know, those for carbon sequestration provide lots of other benefits, most of which improve water management.

The team I work in is looking at blended funding approaches that can help drive the integration of nature-based solutions across the different policy areas—for example, the national flood and coastal erosion risk management strategy, the draft river basin management plans, and the draft water industry natural environment programme, all of which incorporate or are looking to deliver the goals of the 25-year environment plan, as well as the new environmental land management schemes being developed by Defra.

All these include an emphasis on nature-based solutions and taking a natural-capital approach. In developing a way to blend funding across these policy areas, we can increase the scale at which nature-based solutions can be implemented, therefore increasing the other benefits that they can deliver. So, yes, they can be better co-ordinated, and that is what we are looking to do with this project.

**Dr Mike Morecroft:** There are a lot of policies and initiatives that are relevant here. In some ways, picking out one or two is a bit invidious, but I will do it anyway. There is a big opportunity with the new Local Nature Recovery Strategies and the wider framework of the Nature Recovery Network to take a more strategic approach to what we do where. It is hard with multiple landowners, managers and stakeholders involved, so something that can be driven locally with a more strategic approach and NBS built in could be a really positive way forward.

I said it in my last answer, but the local does really matter. Doing the right thing in the right place in the right way with everyone on board is absolutely key to this. One size does not fit all, so some way of having not just a national join-up but a local join-up is important.

I wanted to raise at some point, and I think this is a good point to do it, that there is clearly a big link here with our international policy in meeting the UNFCCC commitments, the Paris Agreement and so on. There are international trade and agriculture issues: the last thing we want to do is to displace a lot of our emissions elsewhere. As well as working for Natural England, I am an IPCC Co-ordinating Lead Author. It is really important globally that we protect our near-natural high-carbon ecosystems. Ensuring that join-up with our international policy and protecting our production of timber and food really matters alongside all these other domestic policies.

**Richard Greenhous:** It is rather the nature of nature-based solutions that they can contribute to quite so many policies, so we should not be surprised by that. So, yes, the co-ordination therefore matters. To take one example, the fact that the England trees action plan and the England peat action plan were published alongside each other is really important, because there are synergies and tensions between them. We work both with Defra and across government to make sure that the policies work

together, and we work together on the ground. That is a core part of our business, so we work really closely with Natural England, the Environment Agency, Defra and others all the time to make that work in practice so that we maximise those synergies and address those tensions well.

**Q88 Lord Winston:** I have another question, which is basically about the nature of the climate change fund and whether it is really pointed in the right direction to get the maximum benefit and supporting nature-based solutions appropriately at scale, given the scale of associated targets. We have been very interested in peatland, for example, and other witnesses, as you know, have mentioned soil and woodland restoration. Dr Morecroft might want to continue on that question.

**Dr Mike Morecroft:** It is fair to say that the Nature for Climate Fund is a game-changer. It is a really important step forward. I quite agree with Richard on that and we are working really hard to join up the peatland and forest elements. We also have a role with woodlands as well, particularly woodlands where forestry production is a lower priority, but for nature's sake matters. Some of our semi-natural native woodlands can also be excellent carbon sinks and stores.

Does it do enough? No. It is a step on the way. When you look at what we need to do to achieve net zero by 2050, there is a long way to go. It is a good and necessary step. It is gaining momentum. My colleagues working on the peatland scheme are really taking that forward and we are encouraged by the uptake as well. It is a refrain I may come back to, but we need a long-term plan. We need long-term investments beyond the current Nature for Climate Fund. We need it to feed through into, and learn lessons for the new environmental land management schemes, including Landscape Recovery and Local Nature Recovery. It is a step on the way, but it is certainly not the end.

**Lord Winston:** Could our other two witnesses answer briefly? It seems to me to be, on paper, quite a large sum of money. I suppose the question is whether it is directed most effectively. Melissa Swartz might like to answer that.

**Melissa Swartz:** When it comes to the nature for climate fund, I would have to defer to my colleagues because I am not all that familiar with the design of the scheme, so apologies from me.

**Richard Greenhous:** It is certainly pointed in the right direction, but, as Mike has already said, it is the first step of many more. I mentioned in my introduction quite a few of the reasons why what we are doing is pointing in the right direction—the whole supply chain, the incentives and the planning. I should also draw attention to how the nature for climate fund is supporting a much wider range of partners in putting nature-based solutions forward.

You heard from the National Trust earlier. There are the Woodland Trust, Community Forests and new local woodland creation partnerships such as those in Northumberland and Cornwall, so there is a whole load of additional capacity being built across the country to really drive this

forward. There is a certain element of 1,000 flowers blooming at this stage, but that is necessary to achieve what is an unprecedented ambition on the woodland creation side. There is to be a trebling of woodland creation rates during this Parliament to a level that is higher than has been achieved in England that we know of by historical record.

The other big shift, which I touched on earlier, is from a demand-led approach to a proactive one of going out, promoting and creating demand, and working with landowners who ultimately make the decisions. Lastly, the other reason I am assured that we are heading in the right direction is that we are working really closely with the sector and wider stakeholders. They have helped us develop our offer and we will keep working with them to keep improving it to make sure it stays right.

**Lord Winston:** Would you like to comment on the Woodland Carbon Code?

**Richard Greenhous:** Yes. I am really proud that the Forestry Commission established the Woodland Carbon Code back in 2011, and it is internationally recognised. It is a really robust voluntary carbon standard and it ensures that what is claimed with regard to the carbon sequestration alongside the wider public goods is then delivered. We continue to advocate that people take it up. We have seen a pretty big ramping up in just recent months, which should not be a great surprise given the additional support that is going in.

We have been really careful to ensure that the new incentives we have designed are really compatible with it. If someone is able to get a better offer through the Woodland Carbon Code, they can substitute that for what they would have been paid for through our England woodland creation offer. We are really trying to work with it and to design our systems to achieve that other ambition here: if we are to keep ramping up woodland creation at the rates required, we need to draw in more and more private investment. It is absolutely right that you have a big slug of public money to get the ball rolling on this, but one of the marks of success in the long term will be to draw in a larger proportion of private funding. The Woodland Carbon Code is really at the forefront of that.

Q89 **Baroness Walmsley:** When it comes to integrating nature-based solutions with existing policies such as on the environment, biodiversity and agriculture, you have talked about the overlaps and co-benefits, but are there conflicts that need to be addressed? How could they be resolved? I can imagine that there is a conflict between producing more of our own food and rewilding parts of our agricultural land, and perhaps in woodland between producing timber as a crop and encouraging biodiversity. Those are just a couple of examples. I am sure you can give others. How can we resolve them?

**Richard Greenhous:** On your last point first, it is really important to remember that we currently import 80% of the timber that we use and that is second only to China, so there is an environmental and carbon benefit in ensuring that we have a good domestic timber supply.

Productive woodland has lots of the other co-benefits too, including biodiversity, so they are not in direct conflict with each other.

Obviously, some woodland types have greater benefits for nature than others. About 90% of what has been planted over the last 30 years has been native broadleaf woodland. We do not see a major shift away from that at the moment, but we know that, to ramp up the woodland creation rates to what we need them to be, we need to be embracing all kinds of woodland creation.

A lot of the way we address the tensions that are there comes down to the national policies and then how we deliver them on the ground. To take two examples, we worked very closely with Natural England to agree a decision framework on how we deal with afforestation and peat. That ensures that we are not planting woodland on peat where we should not be. We are working further towards a decision-making framework on where we should restock existing forests on peatland, or not, so we will have that clarified as well.

To take another one, there are areas with ground-nesting birds where it is not appropriate to create woodland. Therefore, we are refreshing our decision-making framework on that with Natural England too. That work is going really well, so that we really can ensure that we are planting the right trees in the right places to achieve the benefits that nature-based solutions can provide in the round—not just carbon, not just nature, not just access, but, where we can achieve multiple, we should.

**Dr Mike Morecroft:** It is important to hold on to the concept of nature-based solutions as a joined-up solution. If you look at most generally accepted definitions of a nature-based solution, such as that of the IUCN—the International Union for Conservation of Nature—it is all about tackling societal problems in ways that support biodiversity and the needs of people, so it is about looking for the win-win solutions. We live on a small island. There are lots of competing demands for the land – and the sea. I would say we should not forget about the sea: that is important in this discussion too. We will always get those tensions and that competition for land.

We need to do more about targeting to do the right thing in the right place. We need to build that local advice and expertise, and enable land managers and sea managers (if we can call them that), to make those decisions. Some of it is about quite small-scale opportunities. I am a great believer in the large-scale approach, but let us not dismiss the possibilities of integrating hedgerows on farmland and perhaps taking the unproductive corner of a field that is prone to waterlogging in many parts of the country, that is not uncommon. You can find the spaces where you can make space for nature with benefits for carbon as well without necessarily jeopardising food production and so on.

We need to bring the human dimension in. The planning system becomes important—the potential for reform and what goes on in the peri-urban space around our towns and cities. There can be good opportunities there to meet the needs of local people—and urban people as well as rural ones—as a result of the benefits that we derive from nature, again by

targeting nature-based solutions with multiple benefits to the right places.

**Melissa Swartz:** If we can implement nature-based solutions by managing our land as a system and taking a systems approach to our environmental management, that will help us to deliver the multiple outcomes that they can provide and meet some of the nature and climate targets that we are seeking to achieve. It was pointed out in the question that there are incentives that pull in different directions. That is right; there are. Food production can be seen to be in conflict with climate change, adaptation and biodiversity, but we need to ensure that our policies and our incentives are aligned so that they are working together rather than in conflict.

We need incentives for non-public-sector bodies, so private businesses, to prioritise long-term investment into environmental outcomes, such as the Task Force on Climate-Related Financial Disclosures—the TCFD—and the proposed task force on nature-related financial disclosures. We need ways to get people to recognise the benefit that they have derived from nature through their businesses.

Some of the first-round projects from the natural environment investment readiness fund are looking not so much at that but at how we can stack and bundle the benefits that come across to derive revenue streams from these. In aligning our policies and these incentives, we need to ensure that nature-based solutions are in suitable locations.

We have limited land and water, as Dr Morecroft has already said, and we need to ensure that we are using collaborative approaches that can deliver the best solutions. That means that we need to work better with our stakeholders and across the public bodies, including the local authorities, and not just seek out the typical external stakeholders that we would normally work with but engage better with local communities and ensure that they are on board. This includes not only landowners and land managers but the people who live around those places. That will help us do the right thing in the right place.

Q90 **Lord Krebs:** My question is directed primarily to Mike Morecroft, but the other two witnesses may wish to add. I wanted to ask about the uncertainties that remain in relation to carbon sequestration and storage in different habitats in attempting to achieve nature-based solutions. What work is being done to reduce these uncertainties? Are there any specific research projects that really ought to be carried out to reduce the uncertainties in nature-based solutions?

**Dr Mike Morecroft:** This was something we looked at in some detail in the course of reviewing carbon storage and sequestration by different habitats in England. There are some good examples of a strong evidence base. Production forestry is quite well studied. Peatland is an increasingly robust evidence base, but there are a lot of gaps for almost all other habitat types.

A key one is the marine and coastal habitats, what is sometimes called blue carbon. There is some evidence that both saltmarsh and seagrass

are really good ways of soaking up carbon. There are relatively few studies, particularly from the UK or even north-west Europe, so we find things being quoted about seagrass based on one study on the other side of the Atlantic, which is helpful, but there is still a lot to do to really quantify that better.

Grasslands are very important. We have a lot of grassland in the UK. There are very few studies, remarkably few really, particularly in semi-natural grasslands, on sequestration rates.

A generic point across almost all habitats is that soil is often not studied to depth. A lot of the data that we draw on are at a 15 centimetre depth of soil. Soil is much deeper than that in many places.

Even on trees and woodlands, native woodlands and species woodlands are often less well studied, particularly if they are established by natural colonisation, than their commercial counterparts are.

There is a lot to be done. It is important to say that we have enough evidence to say there is lots of potential and we really ought to be doing nature-based solutions for climate change, but there is still a lot to do to fill the gaps in those areas.

One approach that we are trying to develop in our nature-based solutions for climate change at the landscape scale project with the Forestry Commission, the Environment Agency and Kew, which will start to take us down that line, is doing more practical applied research where we make an intervention on the ground—create a woodland, plant a hedgerow or restore a grassland—and monitor to see what happens. That monitoring and evaluation is missing with a lot of interventions on the land. I will pause at that point and let others come in.

**Richard Greenhous:** Building on what Mike has said, we have been working with Natural England and our Forest Research agency to try to fill a number of those evidence gaps. The nature for climate fund has supported that. Just to state something obvious, you can get quick results from where you have existing primary data, but some of the primary data we need inevitably takes decades to produce, so we will need to continue to work with the evidence we have as that builds over the coming decades.

Despite the gaps in the evidence, there is a very strong evidence base existing for the role that appropriately planned and delivered, and growing woodlands can contribute by way of a nature-based solution. I do not see a barrier there. What the extra evidence can help us do is design even better woodlands for the future so that they really deliver the benefits in the round as we want them to.

Q91 **Lord Krebs:** I refer back to the previous question about the integration of nature-based solutions with other policies such as biodiversity. Richard, to take the example of forestry, how good is the evidence base that would enable you to judge, when you are planting trees, the best strategy for rapid sequestration of carbon combined with biodiversity benefits? One hears the criticism that, if you grow dense stands of Sitka

spruce, you might rapidly sequester carbon but not deliver any biodiversity benefits worth their salt. How do you balance those? Do you have a good evidence base to achieve that?

**Richard Greenhous:** Yes. Productive forestry types are the one with the strongest evidence base on the carbon, because people have been interested in timber volumes for a long time there. Native woodlands are where you have the strongest evidence on biodiversity, so there are definitely gaps that continue to be filled on both fronts.

I suppose that we have designed our incentives to ensure that, where we have evidence that a place would deliver more for a public good, be that biodiversity or access, to go in a different direction, we pay more for it. That is based on the evidence we have now so that we will get more public goods for the incentives that we provide. There will always be room to further improve the evidence base on all of these, so we will keep filling the gaps and that will enable us to take better decisions in future.

I would challenge, again, the idea implied in your question that productive forestry does not deliver biodiversity benefits. Undoubtedly, a native broadleaf woodland would deliver more biodiversity benefits, but there are benefits to be had from other woodland types. The reality is that there is no such thing as a 100% Sitka spruce plantation that could be planted any more. The UK forestry standard, for some time now, has not allowed that to happen, so well-designed woodlands are absolutely what we want, whether they are productive or not. We have a good enough evidence base to make good decisions. Let us keep strengthening that to make even better ones in future.

**Lord Krebs:** Melissa, would you like to add anything very briefly—just a sentence, please—because we are running out of time?

**Melissa Swartz:** Very briefly, data and evidence on the co-benefits that nature-based solutions deliver will help build confidence in them and drive potential payments via voluntary markets. I will leave it at that.

Q92 **Baroness Warwick of Undercliffe:** I wonder if we could look at the £12.5 million pilot scheme for nature-based solutions at the landscape level. Could each of you briefly describe the role of your particular public delivery body in this project and how you hope it will feed into future nature-based solutions projects? I wonder if you could look at the barriers for scaling up nature-based solutions to the levels required for climate and nature restoration targets. How do you feel that government policy and your own delivery bodies can support this scale-up?

**Dr Mike Morecroft:** Natural England has led the development of this project, but we are working very closely with Melissa and colleagues at the EA, and some of Richard's colleagues at the Forestry Commission. Also, I must give due credit to Royal Botanic Gardens, Kew. They are not with us, but they are also very involved with some of the more detailed mechanistic studies within it. We are working closely with colleagues in Defra and BEIS, because it is a Shared Outcomes Fund project. Shared Outcomes Fund is a Treasury fund for piloting new approaches that

benefit the shared outcomes of more than one government department. Clearly, climate change and nature-based solutions cut across Defra, BEIS and much else beside.

I have hinted at this as we have been going along. It is about trialling approaches. We talk about how we can do the right thing in the right place locally. We are going to test this out. We are going to establish four particular pilot study areas, plus the area around Wakehurst, which is Kew's wild botanic garden, its field site, in Sussex. These four areas of England are very different. We will look to see how we can best work with local partners such as farmers, NGOs or local authorities to introduce nature-based solutions for climate change and work out what works best in terms of what goes where.

The evidence development component is a big one, so we will measure carbon and greenhouse gas emissions. As well as leading the project, Natural England is particularly taking a role with the comparative assessment of different habitats, filling in some of the gaps I talked about that came out from our review of carbon storage and sequestration by habitat, so it is a good way of filling that gap, but also in the wider sense. What works in terms of socioeconomic factors? What makes people want to do this? I will hand over to Melissa in a moment, because one of the key elements of the project overall is the blending of public and private finance, seeing how we can best use money from government sources together with money from other private sources.

Before I do that, though, while I am speaking, perhaps I will touch on the other questions you asked about the scaling up. That is really relevant here, because to scale up you need to take an integrated view of land use. You need to plan quite a fine granularity of what is the right thing in the right place and what will enable people to do that. It is really important that we set a culture of monitoring, evaluation and testing what works. We should not kid ourselves; this is not easy. To learn to do it better, we need to monitor, evaluate and learn the lessons.

Those are some of the barriers, but they are also some of the ways in which we scale up. I will pause there. I would suggest that we go to Melissa to pick up on some of the blended finance elements, but equally I am happy for you to come back.

**Melissa Swartz:** In addition to the blended finance side of things, the Environment Agency, as part of this project, is looking at how we can build on what the Dasgupta review has suggested, which is a polycentric approach to environmental management. We would like to provide an example, through this project, of how public delivery bodies can work with each other and external stakeholders to enable the deployment of nature-based solutions at scale. How do we bring people together collaboratively in a way that is democratic, so that nobody is feeling shut out of the process but that enables the blending of funding across the different policy areas as well as bringing those opportunities for private investment through those voluntary offset markets?

If we can work at the landscape scale, it means that we can better understand how those nature-based solutions can work together as a

system with those multiple benefits. It also means that we can build that bigger collaborative platform for action that will help us to build on those existing policy areas. For example, we can bring in local nature recovery strategies, local authorities, ENGOs and local communities. There are some examples of this already, such as the Nature Conservancy's water fund and Commonland's 4 Returns approach, which I will not get into the detail of here. If you would like more information, I am happy to provide that.

I am not sure if you would like to hear more about scaling up or barriers. For me, answering the barrier question may be more interesting.

**Baroness Warwick of Undercliffe:** Please go ahead.

**Melissa Swartz:** Some people would say that regulation is a barrier, especially to developing voluntary markets. I would counter that a clear regulatory baseline can provide the foundation upon which that market could be developed, confidence to people taking part in the market, and a safeguard that a minimum environmental standard is being met. It gives us that foundation layer on which that voluntary market can be built, almost like a red line for any emerging market that we need to make sure.

At the end of all this, those markets will help us bring private investment into environmental outcomes, but we need to ensure that the priority at the centre of those markets is environmental outcomes rather than profit. We can minimise these potential barriers, I think, also through engagement. We cannot underestimate how critical that step is. We need to make sure that people are with us as we are developing these markets and policies, and trying to blend them together.

We cannot just engage with our usual stakeholders, but we need to engage with the communities at large. This has the potential to change what our landscapes look like, and we need to make sure that people are involved in this and that they can then capitalise on the socioeconomic benefits it can bring. Regulation and engagement are the two things that we can do to help facilitate this.

**Richard Greenhous:** Going back to the pilot and the Forestry Commission's role, there are two main parts to that. Where woodland is part of the mix, we will advise on doing that well and how people can access the existing carbon markets in doing so. The second aspect then is about how other habitats and public goods for which new markets are being created can draw on all that experience we have from the Woodland Carbon Code. It took three years to develop. We have a decade of running it now.

For me, a critical point here is ensuring that those new standards that are developed are as robust as the Woodland Carbon Code because, without that robust element to it, it could undermine everything else. Really, that robustness is what gives market participants confidence that what they are buying is real. Yes, we will always want to make these things as easy to access as we can but never at the cost of their robustness.

In terms of barriers to scaling up, I mentioned the whole supply chain previously. Confidence and certainty are so important, hence my comments a moment ago, so we are working very hard with Defra and our delivery partners on how we maximise certainty and clarity both now and in the longer term.

Going back to earlier debates on the environmental land management scheme, we are really keen to use this pilot and what we are doing with the England woodland creation offer to lay the ground for that so that there is growing continuity and certainty from now right through the introduction of ELM and the longer term. Most particularly, if people want to commit to long-term permanent land use change, they need that long-term certainty, so that is something we need to keep working at.

**Q93** **Baroness Brown of Cambridge:** Let me start by declaring an interest as chair of the adaptation committee of the Committee on Climate Change. I would like to direct my questions at Melissa Swartz, please. How do we ensure the value of co-benefits for nature-based solutions, obviously not just the carbon, which we were mostly talking about? How do we ensure that they are properly reflected in any payment scheme? Is the natural capital accounting approach sufficiently robust for this? If I can add a rider to that, are we making as much use as we should be of nature-based solutions for flooding and water quality? If not, what should we be doing about it?

**Melissa Swartz:** Where do I start? Natural capital accounting is a great tool to help us understand where we can target interventions. It is a great way of generally allowing us to show the value of multiple benefits. We need more data and evidence. If we want people to adopt this more widely as a business-as-usual approach rather than relying on hard engineering outcomes, whether that is a water company's flood risk management, we need to be able to provide that additional data and evidence to show the multiple benefits. People know that they do in a general sense, but we do need a bit more evidence and data around that. I think that will help.

I recently talked with some water company representatives who were talking about the fact that they used a wetland approach for some sewage treatment works and the efficacy of it impressed everybody within their company. The data and evidence they got from implementing that one scheme gave their asset managers and operations managers much more confidence in trying similar schemes elsewhere. We cannot underestimate the value of that.

**Baroness Brown of Cambridge:** Is there enough support for those large-scale demonstrations and experiments?

**Melissa Swartz:** I think we are getting there. This shared outcomes fund is a huge boost. One of the benefits of this project is that it is a three-year project, so it is not restricted to the annual funding cycle, which makes things more difficult, to be honest. Also, with the blended funding approach, we can find ways of using things like the Wyre natural flood management approach in the north-west. They developed a special

purpose vehicle that allowed them to collate the funding into that and use that to fund the natural flood management, such as wetland creation, woodland and grassland creation.

I think we are getting there, and having natural flood management and other nature-based solutions drivers written into policies helps, so having that in our flood risk management plan helps. If we can influence the water companies to include that through the draft WINEP and WISER methodologies, that will also be a huge boost. I hope that answered all your questions.

**Dr Mike Morecroft:** Not all valuation is financial, and understanding the value that people put on particular places and habitats is also important. We should not lose that wider sense of the value of nature in developing tradeable mechanisms. We should also say that one of the most important things is to look for co-benefits with climate change adaptation. We have talked mainly about mitigation, but reducing risks and ensuring that any nature-based solutions are robust to a future climate will be critical.

**Richard Greenhous:** Forestry England, our agency that manages the nation's forests, has been using natural capital accounts for a few years. Certainly, it really helps to make better decisions. It is far from full, it is far from perfect, but it is a really useful tool and must be seen as such. Lastly, I would reinforce the point that Mike has just made about the importance of the right decisions for climate change resilience and adaptation in what we do for our woodlands and across nature, as well as doing what we can to mitigate.

**The Chair:** Can I thank all three of you for making time today to talk to us? It has been most helpful. We will get a transcript of today's deliberations and, please, if there are any corrections needed, let us know. If there is any further information you want to send us, we will most welcome it and it will be used as evidence for the committee. For today, thank you very much indeed. I very much appreciate you making time to see us and it has been most informative, so goodbye and thank you.