



## Science and Technology Committee

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

Tuesday 19 October 2021

11 am

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

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Questions 65 - 73

### Witnesses

Helen Avery, Head of Nature Programmes, Green Finance Institute; David Young, Lawyer and Partner, Wheatley Young Partners; James Mansfield, Co-Founder and Managing Director, Finance Earth.

### USE OF THE TRANSCRIPT

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## Examination of witnesses

Helen Avery, David Young and James Mansfield.

**The Chair:** Good morning, everyone. Thank you very much, Helen Avery, David Young and James Mansfield, for joining us this morning. We appreciate it very much. We are on broadcast, so lots of people might be listening to all of us, but thank you for joining us today. We are most grateful to you.

Q65 **Baroness Manningham-Buller:** Thank you very much to our witnesses for being here. The committee realises that a fairly small percentage of the funding of nature-based solutions comes from private investors. I would like to start this session by asking our witnesses what the barriers to this are. The committee has thought of a number of them, but we would like to hear your views on the main barriers to greater investment from the private sector.

**Helen Avery:** It is lovely to be here. I am head of nature programmes at the Green Finance Institute. There are a number of barriers that we could spend many hours going through, such as financial and regulatory, and there is a lack of awareness. We have two things happening. We can mobilise all the investment capital out there towards “do no harm for nature”, but we also have to invest in nature recovery and NBS right now.

The first is more about systemic risk, and we lack that conversation about NBS at the moment. It is not really clear what our aims are. If you tackle the first, “Do no harm to nature”, that would help companies to invest naturally in nature-positive solutions and to be inclined to invest in NBS, but we are not talking about that at the moment. Obviously the Taskforce on Nature-related Financial Disclosures may change some of that as it comes to fruition.

As an example, France has already put in regulation that requires financial institutions to disclose their impact on nature. That would be a real help. Also, at the moment, I feel like we are talking very much about net zero and mitigation and not about adaptation. There is a lack of encouragement and enthusiasm to invest in NBS. It does not really feel like it is embedded in.

There are many things that are helpful, such as the natural environment investment readiness fund and the BNIF, that will support investment in nature. Generally, my view is that we need to embed this story of NBS and why NBS and adaptation are important, as part of a larger story of resilience. We have not done that yet.

**Baroness Manningham-Buller:** Whose responsibility is it to do that?

**Helen Avery:** It is up to us all, but it would be helpful if there was more discussion about “nature positive”. I know the Government have come out and talked about nature positive, but it feels like perhaps we have not talked about the path towards it or sent enough signals that adaptation is important. We are very focused on net zero and not including nature

positive in the conversation. It is not the best way of putting it, but a bit of marketing on why NBS is important for systemic risk needs to be done. That was made clear in the Dasgupta review and it is following that through across the various stakeholders.

**Baroness Manningham-Buller:** Would one of other witnesses, perhaps Mr Mansfield, like to say what he thinks are the barriers to greater investment from the private sector?

**James Mansfield:** I am managing director at Finance Earth. We are a specialist investment adviser and fund manager working in exactly this area, helping institutional investors and environmental NGOs working through this exact question. On the ground, fundamentally we see a lack of revenue streams and certainty in those revenue streams. Even within today's almost voluntary market, we are seeing transactions starting to occur. The UK has a lot of opportunity to learn from the international markets, where there are much more sizeable transactions happening.

When we start to unpick those barriers as to why the revenue streams do not always flow, or at the scale we need them to, we see that it is exactly as Helen was alluding to. There is a really important need to build this into the DNA of corporations so they can understand their supply chain, the systemic risk and the current externalities they are not pricing into their business models. Once you start to build that into their structures, there starts to be this genuine demand for the services that nature-based solutions can supply.

The voluntary carbon market is arguably the most developed form of nature-based solution business model to date. Even within the last few years, despite the impacts of Covid-19, the overall demand for the voluntary carbon-offsetting market has grown exponentially. Indeed, we are seeing major significant interest and demand from investors looking for opportunities to invest into this marketplace.

That quickly moves on to the next barrier, which is about scale and access to pipeline. The other key fundamental is that the business models and the supply chain that sits around creating nature-based solutions are very nascent. There is a genuine lack of understanding within the developer community as to how to create nature-based solutions. There is a lot of misalignment around what is even a nature-based solution. There is also a general lack of standards. When you start to look at that from an investor's perspective, where you want known outcomes and ideally you have proxies to what performance will look like, those start to become really fundamental barriers for how you can invest and mobilise capital into those markets.

**David Young:** I am a senior fellow with the Broadway Initiative. We look in particular at the policy and regulatory frameworks to establish high-integrity environmental markets across the UK. I would very much agree with everything that Jamie and Helen have said about revenues, scale and the fact that we need to see net zero in the round, alongside nature recovery.

Professor Dasgupta hit the nail on the head when he said that the major problem facing biodiversity is widespread institutional failure. The regulatory barriers and the misalignment between economic and environmental regulation, combined with a lack of a coherent policy framework for how we bring markets for nature together, are the biggest problems that we face.

**Baroness Manningham-Buller:** Can any of you produce any examples for the committee of nature-based solutions, financed privately, that have delivered good revenue streams at this early stage in what we are talking about?

**James Mansfield:** I am happy to and I am sure the others will jump in. In 2019, we were lucky enough to be working with the RSPB to create one of the first debt finance habitat banks in England, effectively using a mitigation payment. There was a private developer creating a series of housing developments. The Catch-22, from their business model perspective, is that, without this habitat-banking model, they would have had to create a single, one-off payment that would obviously impact the finances of their development. We were able to create a habitat bank and then the payments could effectively be paid over time to create an income stream into the financing of that habitat bank.

There are also some fantastic examples from the Wildlife Trusts on the south coast, where they have effectively created a nitrate offset product. They have worked with Natural England to agree a proxy for the benefit of transferring agricultural land, where there is a certain level of run-off impacting the water quality. Banking the benefit of transitioning that land into conservation, and selling that benefit to developers to enable them to get housing permission, creates the income stream that is possible.

There are a lot of enterprise models around nature-based solutions that are often overlooked. Often, we look for ecosystem service models where we sell the ecosystem service directly. There are models around the leisure and tourism industry that are really important to look at as well. I am happy to elaborate.

Q66 **Baroness Sheehan:** My question follows on quite well from the previous question. I would really like to address some of the major concerns that investors raise when it comes to investing in nature-based solution projects. Can you list a couple of them? Then I would like to turn later to how these can be addressed by government. Could I start with Mr Mansfield? I appreciate the prominence you have given to SDG 13 in the background there.

**James Mansfield:** In a nutshell, we see three top barriers for investors. As I mentioned earlier, one is confidence in revenues, particularly the long-term view of revenue streams. The fact that a lot of nature-based solution assets are long term in their project lifetime is not in itself a barrier. It is about making sure that the income streams that sit alongside that are also long term and predictable.

The next key barrier that we see is visibility of pipeline, seeing the source of deals, but also how readily transactable those deals are. Often, even

when we have investment-ready opportunities, there is actually a lot of complexity in getting those investments ready and to the point you can actually transact.

Connected to that is the confidence in supply chains. It is about helping to create those pipelines but ultimately delivering the creation of those nature-based solutions as well. Particularly in the wake of Brexit, we are seeing genuine supply-chain challenges with how we deploy some of these projects, even with the capital sat there, because a lot of these nature-based solutions are in the rural environment. As much as that is a fantastic opportunity for our rural economy, there are major resourcing issues at the moment with how we go about providing the peatland restoration programmes and having people planting trees. These are major issues.

**David Young:** Overall, there is an issue with lack of scale. Some of these investment funds are looking for investments in excess of £100 million. Many of these projects are a few million pounds at best, so there is a need for aggregation and bringing together the portfolios of projects that can be aggregated and then invested in at scale. That is an important issue.

I alluded earlier to the regulatory risk. Regulatory and policy uncertainty is a very major deterrent at the moment, in both the supply chain that Jamie was referring to and the cost and complexity of project development on the ground. Some projects take many years to just get through the approvals process, the accreditation process, even to get to the starting line. That is, I think, where Jamie is referring to the issue of pipeline visibility.

The last issue is what we would call liquidity. It is not easy to buy and sell nature-based solutions, or indeed the environmental services from them. As you have heard, these markets for credits, for carbon and other environmental services, are quite nascent. There is a real need to accelerate their development, so that it is a more readily accessible market for those who wish to participate.

**Baroness Sheehan:** That is really interesting. Can I ask Helen Avery whether she has anything to add to that? It is a very interesting list already.

**Helen Avery:** Yes, that is quite comprehensive. There are only a couple of things I would add. One is that there is a slight concern about the reputational risk of what you are investing in. Is it the right investment for the right place? I do not think anyone wants to be caught in that trap right now of putting in a bunch of trees and being told later that you ruined a whole bunch of livelihoods. That is a concern. I would not say it is as big a concern as the scale and returns, which are obviously key.

The other one is simply confidence in the delivery of the outcome, so can it deliver what it is going to deliver? I know that is of concern for water companies in particular.

**Baroness Sheehan:** I want to pick up on two things. The first is reputational risk. To what extent is the lack of a scientific certainty

around carbon accounting for nature-based solutions a major factor in that? Is that something that your sector can overcome? Secondly, could I return to the role played by government in addressing some of these issues, for example scale and confidence in supply chains?

**David Young:** At the moment, in law in the UK, the standard of scientific certainty in many instances is set at the “beyond reasonable doubt” level. Given the need to take action, indeed urgent action, the question is whether that standard be “on the balance of probabilities”, particularly given the level of risk buffers that you heard from Dr Snowden earlier are already built into these systems. Should “beyond reasonable doubt” be the right standard?

As an investor said recently at the Natural Capital Finance & Investment Conference, perhaps nature-based solutions should be presumed innocent. It is the balance between precaution and proportion. At the moment, regulation is strongly oriented to precaution. We obviously need to have the credibility of the verified outcomes—that is not in doubt—but the question is whether you need to have perfect certainty. A key principle of ecological sustainable development is that lack of full scientific certainty should not be a barrier to action.

**James Mansfield:** Practically, from our experience in helping to create some of these carbon codes for new nature-based solution carbon assets, such as saltmarsh, and even looking at carbon kelp benefits, some of the real barriers that we see are helping to align the various opinions and scientific views within the scientific community.

I totally agree that there is a need and a role for government to facilitate that and to help bring together different scientific opinions, in short succession, to reach a common ground. As we are discovering, trying to align different academic views on the benefits is very time-consuming and complex. Multiple nature-based solution opportunities are stuck in that technical proving stage, where at the moment there is no dedicated programme to unlock them.

To the other part of your question on solutions, there are a lot of opportunities that the Government can help to resolve through the use of floor price mechanisms. There are some really great examples from the renewable energy sector. Also, there is the Woodland Carbon Guarantee as a floor price mechanism, which provides that confidence and certainty. Really powerfully from a public spending perspective, it also provides an element of optionality in the costs to government. We think those types of mechanisms should be employed across a whole range of nature-based solutions.

There are also a lot of opportunities for co-benefits and looking at the other additional opportunities that nature-based solutions can bring. Often, those co-benefits are not priced in effectively. That is partly to do with technical rigour and where you can demonstrate what outcomes you are achieving. The demand for those co-benefits in the markets is often very limited, so the commercial rationale for proving them is quite challenging.

Where there are powerful and, certainly from a public benefit perspective, valuable co-benefits, I believe that the outcome payment mechanism or a top-up payment mechanism could be really practical to help facilitate much more of these co-benefit projects. That would also be a really neat tool to enable government to look at how to incentivise particular co-benefits in a range of areas.

On the supply chain, to a certain degree, as you start to build long-term confidence in the underlying business models, the market can fix those over time. Again, the renewable energy sector is a really good example where, if you make the revenue stream robust enough, the supply chain will turn on around that opportunity.

In my opinion, in order of priority, if we fix revenue, the whole rest of the market will turn on around those key components.

**Q67 Lord Holmes of Richmond:** Good morning, everyone. Thank you to our witnesses for taking the time this morning. How well do you think existing schemes, such as the woodland and peatland carbon codes, are working to support private sector investments at present?

**Helen Avery:** Jamie would be in a better position to talk about this, given some of the funds they are working on. My understanding is that they are working well but that demand is outstripping supply at the moment. It is back to this point about not having enough project pipeline coming through, - we need upskilling and technical assistance to get some of those projects going. That would be one issue.

Specifically on peatland, there is a bit of a challenge from a bit of uncertainty that could discourage investors at the moment. Can you keep using peatland credits as offsets, because peatland is emissions avoidance and not necessarily sequestration? That is causing a little confusion and might slow down the peatland side in future. My understanding from speaking with them at the moment is that they have more investor demand than they have supply.

**James Mansfield:** I totally agree with what Helen has just said. Overall, the two voluntary codes that we have operating in the UK, the woodland and the peatland codes, are doing a brilliant job and starting to show the art of the possible. A lot of the limitation is not to do with them as codes. It is more to do with the lack of supporting infrastructure that sits around them and the role of how you govern voluntary codes.

We have seen projects that are being funded with some of these codes where, because of their structure, they forward sell the carbon through something called a pending issuance unit. Because they forward sold that carbon benefit, those projects effectively have no future income to support their operating costs into the future. That is absolutely fine as long as you are building up a sufficient endowment or effectively saving some of that capital to ensure the project is maintained into the future. Because these are voluntary codes, there are no specific rules or even guidance on what that best practice looks like to ensure that the governance of that structure is making sufficient financial plans for the future to ensure those carbon projects continue to deliver benefit.

Exactly as Helen said, will there still be demand for these codes? At the moment, we are seeing massive demand, which is outstripping supply. That points to two areas. One is that there needs to be a lot more landowner engagement, helping educate landowners about where these opportunities are. Often, it is very easy for us to look purely at the financial and commercial aspects, but a lot of this is about actually engaging with landowners and land managers to help show them the art of the possible and explain how these models work on the ground. There is a real need for that in order to ensure that the take-up of these models happens.

Exactly as Helen said, there is also this real need for being clear about what role offsets have and what quality buyers look like. Particularly as a social enterprise organisation, we have a very strong view that, where offsets are being used, particularly from a climate perspective, they need robust decarbonisation plans. That is, again, part of the market infrastructure that, at the moment, does not really exist. There are voluntary rules around that, but building more regulation and being much clearer about what the net-zero pathway looks like and where legitimate offsetting sits within that will help to accelerate the growth of these models and remove that ambiguity over what is quality offsetting and what is not appropriate offsetting.

**David Young:** As far as they go, the—[*Inaudible.*—]—interrelationship between the emerging codes and the Woodland Carbon Code. The key point is that we are talking about two ecosystems and one environmental service. Nature-based solutions have the potential to deliver such a broad range of environmental benefits, whether it is water quality improvement, flood mitigation or amenity and recreation. Those are not being valued.

As we know, that means they get bundled with the carbon credit, but those values are not being reflected in the prices. There is a degree of freeriding, and that freeriding is not incentivising landowners to make the changes. We see a supply constraint for the very precise reason that the co-benefits are not properly valued and the carbon price alone is insufficient to bring enough supply into the market.

The key challenge is how we expand this suite of standards and codes to cover the full range of benefits for nature-based solutions and find market mechanisms to integrate those benefits. I would draw the committee's attention to the work of the University of Exeter, which is looking very closely at some very clever economics that can be brought to bear on this solution of how you price nature-based projects and allow all the individual services to be sold separately, in other words to be stacked properly to reflect their true value.

**Q68 Baroness Brown of Cambridge:** We have just had a session with the specialists on the carbon codes, which you may have listened to. I suppose I had the impression from them that quite a few pending issuance units were not actually being sold. That is a slightly different view. You are saying that the demand is far outstripping supply, and I thought they were suggesting that actually not all the units are yet being

sold. I do not know whether perhaps James Mansfield can give us some understanding of that slightly different view.

**James Mansfield:** I am happy to. There are two primary mechanisms that you can use to create revenue through these structures. One is by selling this pending issuance unit, which is effectively the forecasted carbon benefit. That allows you to access those future incomes today or at the point that you are selling those pending issuance units. The owner of those pending issuance units then basically sits on those units and, over time, typically every five years, sometimes every 10 years, the projects are then verified.

At the point they are verified, the pending issuance units effectively convert to these verified units and they are then proven. They have moved from ex ante into what we call ex-post carbon credits. There are two approaches that we are seeing project developers and investors taking. You can look to sell that pending issuance unit entirely into the future. Indeed, from the demand perspective, that is where we are seeing a lot of demand for that pending issuance unit model, where they forward sell that carbon.

There are also projects where we are seeing developers that own the projects, instead of selling the pending issuance unit, waiting over time and selling only once the carbon has been verified, so they sell every five or 10 years to release that, or they just hold on to the carbon themselves and use that as their own offset. Effectively, they have become the off-setter. They are the different models that we are seeing at the moment.

**Baroness Brown of Cambridge:** My question was that the carbon code people gave us the impression that, at that early stage, the pending issuance unit, the demand was not outstripping supply. Indeed, there were unsold units.

**James Mansfield:** On the code, I could well believe that we are still seeing underlying pending issuance units not being sold. We are seeing the most demand for project creation where they own entire projects. That is slightly different from taking a slice of that pending issuance unit, which I believe is what they were referring to.

Q69 **Baroness Brown of Cambridge:** If we want the supply chain and we need to be paying landowners to make the changes that are needed, they need that money up front to make the change. Clearly, we need something to stimulate this market in the pending issuance units. That perhaps leads on to my question. Do we need more incentives in the system to encourage the private sector investment? How could the incentives we have be improved? Is this one of the areas perhaps where we need to improve those incentives?

**James Mansfield:** As I mentioned earlier, a floor price mechanism, as we have seen with the Woodland Carbon Guarantee, is really powerful in mobilising the creation of projects. It gives that certainty of the future price of those carbon benefits. That is a really powerful mechanism. While we can still benefit from an element of capital grants up front to facilitate

that, the more confidence we can give on the future carbon pricing, the more private investment will be mobilised to create these projects.

Over time, that will stimulate landowners to engage in this market as they effectively can be paid a share of that benefit. They can be paid up-front payments, very similar to the renewable energy sector that we saw, and share in project returns. That becomes a much more attractive proposition than at the moment, where there is a lot of uncertainty about the future income for some of these projects.

From a landowners' perspective, there is a real trade-off, because one opportunity does not necessarily give them the income that they will effectively forgo. If they are planting woodland, for example, that is a very long-term commitment for that piece of land. Giving that long-term certainty and confidence on income is a major need there. There is good learning from the floor price mechanisms we have seen.

**Baroness Brown of Cambridge:** Helen, people have mentioned other things, such as the French requirement to disclose impact on nature, policy certainty and regulatory certainty. Are there other incentives that need to be in place?

**Helen Avery:** Yes. I do not know if I would call it an incentive, but I suppose it is one. One of the examples I think about is the US Army Corps of Engineers. Three or four years ago, it was required to start including nature-based solutions within any projects that it does. Now there is a whole engineering with nature movement across the US. That would really incentivise a switch.

There could be consideration of extending the UK ETS to include NBS offsets, a bit like the cap and trade in California. That is definitely worth looking at. You mentioned France. That would certainly incentivise businesses to look a bit harder at where they are doing harm and start investing in nature-positive solutions, if not nature-based solutions themselves. Those are key.

If the voluntary offset market were more robust and we had a bit more certainty and trust in it, that could inspire a lot more investment. Then you could start to see perhaps tax relief for nature-based solution offsets and things like that. We are at the beginning of this journey, but there is a lot of potential out there for things that could be done, certainly drawing on international experience.

**Baroness Brown of Cambridge:** Would it help if the codes were made mandatory?

**Helen Avery:** I am not sure I can answer that. I do not think so.

**David Young:** I might help with that. The key point about the codes is that they are merely efficient mechanisms for measuring, tracing and tracking the delivery of the carbon credits. They are not necessarily designed as a mechanism for regulation or compliance.

I was going to pick up on Jamie's point about a price guarantee. An alternative mechanism is to provide some form of demand guarantee. In the renewables sector, we have seen the power of the renewables

obligation to drive private investment. The advantage of that is that it does not put so much pressure on the public purse. So there is an obligation on the electricity sector to decarbonise.

We could think creatively about obligations in our sectors, the water sector and the food sector, to invest in nature recovery and nature-based solutions in a quite practical on-ground way, along with fiscal incentives such as tax relief, as Helen mentioned, to smooth the path. A demand driver is also a very effective mechanism of incentivising private investment.

**Baroness Brown of Cambridge:** You were talking earlier about how we include the value of co-benefits. Presumably one of the challenges there is that who benefits from the co-benefits is quite often rather different from who needs the carbon credits. Do you have a suggestion for a structure or mechanism by which the co-benefits might be monetised, if you like?

**David Young:** I think the issues of bundling and stacking have been considered by the committee. One of the critical things that you are trying to ensure is additionality—in other words, that the environmental benefits are real. It is crucial to the credibility. By bundling the projects on the supply side, buying wetlands, woodlands and hectares of nature reserve, you keep all those benefits together and can be confident that they can be sold only the once. It does not mean that you cannot stack those benefits on the demand side and sell the different benefits to different buyers.

I mentioned the University of Exeter earlier. It has been looking at how both buyers and sellers can share from the benefits of co-operation in that way. One of the problems that we have in other environmental markets around the world is the role of brokers and intermediaries, who quite often consume all the value that is created. The model that Exeter is producing is about sharing the value to ensure that the landowners get a fair return and the buyers of the credits are not paying over the odds for it.

There are mechanisms and they are being trialled in the real world, particularly in bringing together nutrient reduction and biodiversity. Wessex Water and the EnTrade team are doing some work with an innovative platform for allowing multiple benefits to be sold through a single market.

Q70 **Baroness Walmsley:** We have talked a lot about building confidence and trust, but clearly the Government think there is still a need to take steps to derisk investment in nature-based solutions, in order perhaps to build that comfort in some hesitant potential investors. For example, there is the natural environment investment readiness fund—quite a mouthful. It creates pilot projects for nature-based solutions. Do you think those actions are effective? Are they enough? Do you have any other ideas about what could be done to help derisk NBS investments from the private sector perspective? Helen, you are nodding. You obviously think that something can be done.

**Helen Avery:** Yes. The natural environment investment readiness fund, which is indeed a mouthful, so I will call it the NEIRF, is a really positive step. I know that the BNIF—the big nature impact fund—that is being developed on the back of that will also play a really big part. They provide evidence of what works, and we really need that at the moment. It starts to build that investor confidence once they can see actual projects out there that are working.

Not only that, but it builds confidence in the projects and landowners themselves, because these projects take a really long time to put together. Once you can see that there is private investment at the end, it will inspire you to do more. I am really supportive of those funds.

What more could be done? In addition to those, I would love to see something similar to Big Society Capital, for example, or the EIB's natural capital financing facility, which has had questionable success if I am fair—it was a little ahead of its time - but essentially it is a facility that acts a bit like an investment bank for nature. It can provide concessionary loans, act as a co-investor and provide technical assistance. You start to build in a lot more investor confidence for one, but you could start to co-invest alongside the private sector, which would be really useful. It is something to look into.

It is not dissimilar to Big Society Capital on that front. That would be what I would like to see. It could be part of the National infrastructure bank, but I believe the National Infrastructure Bank has different ambitions.

**Baroness Walmsley:** Mr Mansfield, do you think the existing pilot schemes will be sufficient to develop enough projects in order to satisfy the demand that you have been telling us about?

**James Mansfield:** While the NEIRF, as Helen says, is a fantastic initiative and is long overdue, in terms of what is needed, the overall size of the programme is much smaller than the demand from the private investment market. The private capital that is looking for these types of opportunities is in the billions now; it is getting to that scale. I suspect that the first round of these NEIRF opportunities—it will be really interesting to see how many of those are successful—will likely be in the tens of millions on an aggregate level. It would be fantastic if it got to over £100 million, but I suspect that it is in that quantum.

My understanding is that the NEIRF as an overall programme that has been committed today is £10 million. If we compare that to the equivalent programmes in the social investment market, where the UK really pioneered and became a global leader in a lot of the techniques around using investment readiness programmes, hundreds of millions were put into that market, which is now worth over £5 billion in the UK as a marketplace. There is a seismic increase in that type of funding to facilitate the creation of opportunities, but it is absolutely essential to helping get that market going.

I totally agree with what Helen is saying. There is a real need for the equivalent of a Big Society Capital wholesale-type funder in the market.

The key thing we have seen, and the international market offers a lot of good learning in this space, is that that needs to be concessionary finance. There is already a lot of private capital that will come in on commercial terms, but it needs an element of concessionary finance to enable and unlock those types of opportunities.

We have seen in the international space that a lot of that concessionary funding is not just at the project level. Often, it is at the fund level. It comes in at an intermediary level, where you can clearly aggregate and create portfolios. As David was saying earlier, there is this real question of scale that we see across nature-based solutions. Given the nature of nature, I expect that scale will always be challenging. Hence, that is why aggregation will always play such a fundamental role, particularly for the UK landscape, where it quite often will not be appropriate to create super-scale projects. We will end up with patchwork quilt approaches, but then use financial vehicles to aggregate those opportunities.

**Baroness Walmsley:** Are you saying that there is a lot of potential investment out there, but the barrier is the speed at which the projects can be established and developed? If that is the case, is there a role for the Government in helping all the stakeholders in this picture collaborate—the landowners, the investors and the scientists?

**David Young:** Absolutely. There is a very important role for government. One thing to mention is that pilot projects are ultimately effective if they can remove or lead to the removal of institutional or regulatory barriers. If they are just simply about sharing of knowledge, often each project has to go through the same barriers each time. It is terribly important that we make the institutional changes and provide the regulatory frameworks to make it easier for projects in the future. These NEIRF projects are blazing a trail, but they are not sufficient on their own.

Three of our organisations have been working on a project called Financing UK Nature Recovery. That has laid out a comprehensive framework for the things that need to be done by both government and the private sector in order to put all the building blocks in place for these markets and, importantly, to make sure that they are undertaken in a co-ordinated way.

Some of the roles that I think Dr Snowden referred to earlier are best undertaken by government, or at least sanctioned and authorised by government—the transparency, accountability, accreditation and approval of standards. All those things, perhaps with a light touch, need government involvement. We have seen the consequences of a more laissez faire market in the voluntary carbon sector. Mark Carney has now had to come in, 20 years on, and try to put a bit more rigour and discipline into those markets. We are at the beginning of the markets for nature, and it is really important that we put these frameworks in from the outset, so that in 20 years' time we do not have to find another Mark Carney to fix the problem.

Q71 **Viscount Hanworth:** I am still unclear regarding the nexus of the supply of projects and the demand generated by those seeking to acquire carbon

offsets or carbon credits. There are risks in these projects. Do both parties bear the risk? If so, how is it apportioned? Moreover, is there a role for speculative financial investors?

**James Mansfield:** I will take that in reverse order as a question. We are absolutely seeing speculation as one of the primary drivers for investors looking to get into carbon credit-generating nature-based solutions, as well as meeting their own needs for carbon offsetting.

Your point of the nexus as to where risk lies for a project—the seller of the carbon credit versus the buyer—depends on that principle of the pending issuance unit. If you buy all the carbon through the pending issuance unit, you have effectively taken over that future commitment or promise, from a carbon perspective, and paid someone up front for that right. Ultimately, by buying that pending issuance unit you have then also taken on the future risk that that project fails for whatever reason.

At the moment, the market is starting to mature and we are starting to look at contracts that sit around that to try to manage and govern those relationships more, but in particular this is an area where we see that there are genuine risks. It is really important to have a close understanding of project life cycles and what the costs actually look like over the project life cycles. That will directly feed back into whether you are using this pending issuance unit mechanism or selling through verified carbon only, so basically selling every five years or so, once you have actually verified.

Interestingly, in the international market, almost all carbon that is sold is verified, so it is this ex-post type of carbon. In the international market, we do not really have the equivalent of a pending issuance unit. There are just not the same structures. People look into buying into long-term carbon commitments purely through contractual mechanisms. Effectively, that manages and polices that relationship with what happens if the project falls over. They do not assign all the risk in the same way.

It is quite nuanced. As this market is starting to mature and grow, it is important that we have an open dialogue in the sector to really understand what is appropriate in risk transfer and who really is carrying the risk. At the moment, we still have not had failures in this market.

**Viscount Hanworth:** Presumably the pending units are sold at a substantial discount in order to make them attractive. Is that discount well determined, or is it up in the air?

**James Mansfield:** You are absolutely right. In theory, there is a discount to market. Because this is not a highly liquid marketplace with public declared pricing, that pricing differential is ambiguous. We have internal views over what that pricing differential is and we believe there is a material pricing differential. There simply has not been the volume of verified carbon publicly sold that gives us a view on what that real number is at the moment. You are absolutely right that, in theory, there is one.

**Viscount Hanworth:** It is still a very thin market.

**David Young:** Futures prices are a very important feature of mature markets. The difficulty we have at the moment is that these markets are embryonic and not entirely transparent in terms of standards and the quality of the credits that are coming from them. Speculation on the future prices is a good thing in sending long-term price signals for these services, but we need to think very carefully about how markets are designed to ensure that it does not just become a platform for speculation but is actually a mechanism for sending those future price signals properly. The lack of transparency around those prices at the moment is part of the challenge. Speculation has a role to play, but it has to be managed within a robust market design.

**James Mansfield:** David made the really important point there that, at the moment, the governance and the determination of what a quality project looks like is very ambiguous still, because these are voluntary codes. There is quite a broad spectrum of quality of underlying projects, in both their biodiversity and their co-benefits. Because of that, it is still very difficult to compare assets with each other. That also makes that question of speculation for future pricing more tricky, because there is this other unknown: "Am I looking at the same product? Am I looking at the same commodity?" At the moment, it is very difficult to make that distinction.

**Viscount Hanworth:** I am sure it is.

Q72 **Lord Winston:** Could you provide examples of private investments or public/private investments in nature-based solutions that you have seen that you feel we could learn from? The other thing is whether you might give some attention to initiatives in other countries. One thing that really interests me is that the climate is changing all the time and organisms adapt to that climate. That must make this rather a tricky area to invest in. It would be interesting to know about other countries in particular, outside the UK.

**Helen Avery:** I have been thinking about a couple that could be replicable for the UK. They might not answer your latter question. I mentioned the EIB's natural capital finance facility. It provided technical assistance and equity investment into SLM fund in Ireland, which is a €30 million sustainable forestry fund that does continuous cover forestry.

That has been really successful from a private investment perspective, as well as building in recreational benefits through the forestry land. It has bought old farmland - grants were given to farmers to plant trees, and those farmers realised that they were not timber specialists, did not know how to maintain those trees and therefore wanted to sell that land. This particular fund has bought up these patchworks of land and turned them into continuous cover forestry. That is a really successful example. We could look at something similar within the UK.

The other example is GreenCollar, which is carbon farming in Australia. It is a little like the Woodland Carbon Guarantee, sort of, but it is for soil carbon. It has been buying soil carbon from farmers with a guaranteed

buyer as the Government, but it can also be sold to individuals or companies looking to offset. That is quite an interesting model.

The other thing I think about a lot is stormwater retention credits. That has really inspired a lot of private investment in the US. I do not know how it would chime with biodiversity net gain that is coming through in the UK, but it is certainly worth exploring, especially given the flooding issues that we have in urban areas. I will leave it there and let others speak, just for time's sake, but I am happy to follow up.

**David Young:** I might continue with the Australian examples, if I may. The reef credit scheme is a particularly exciting initiative focused on the protection of the Great Barrier Reef. It is a voluntary scheme and is basically paying landowners to reduce the nutrient inflows that are damaging the reef on a very large scale. It is successful in the fact that it has attracted very large private and public sector funding, from both HSBC and the Queensland Government. It is also significantly innovative, in that it has established a separate company limited by guarantee to oversee the operation of the marketplace, so providing that transparency, certainty and independence.

The second example is the Australian carbon credit units, which were set up by the Carbon Credits (Carbon Farming Initiative) Act in Australia. That is a very good example of the Government playing a key role in structuring and designing the market, establishing who the market participants are, how they are able to participate, the standards and the contracts. In other words, it is taking out all the cost of market development and allowing the landowners and the buyers of the credits to focus on the transaction.

**Lord Winston:** James Mansfield, do you have others to add?

**James Mansfield:** Yes, I have a couple. There is a lot of really exciting work happening across west Africa, particularly with the land degradation neutrality fund, which Defra invested into. It is investing in sustainable forestry programmes where it is effectively cross-selling sustainable timber models but also carbon income streams. What is really exciting, and we see it across a lot of the international models, is that it is not just about blending at the project level but about using public concessionary finance at the fund level to help manage portfolio risk.

To your point on climate, the Washington DC impact bond, which Quantified Ventures helped create with Goldman Sachs, is about investing in a series of green infrastructure to reduce surface flooding and urban flooding across Washington, and to transfer a proportion of the performance risk of those green infrastructure projects to investors. This whole market is also about the tools not just to invest but to help transfer some of this performance risk to investors and to allow investors to have exposure to those opportunities in order to prove models before they can then be financed in more traditional routes.

An area that is really close to my heart is the blue economy and the sustainable blue economy. The UK has a lot of opportunity here. There are some really fantastic examples in Belize of blue financing structures

and marine protected areas, building financing governance vehicles that not only aggregate lots of community-scale opportunities— tourism-type structures—but allow access to licensing fees for a protected area and help consolidate that, which can then be financed against.

The private investor working in that particular example is the sustainable ocean fund from Althelia. That has a credit offering from the USAID that provides a guarantee on default rate. That also helps to further enhance the attractiveness of investing in that model.

**Lord Winston:** That was very helpful. Thank you very much indeed.

Q73 **Baroness Sheehan:** I wanted to ask about one of the concerns of investors that we have not spoken about: liquidity. I am wondering whether participation in emission trading schemes would help with that.

**James Mansfield:** For me, liquidity will arrive once we get to scale. In many ways, it is a function of the overall supply and demand that we are seeing in the market. Because a lot of these nature-based solutions opportunities are effectively being run through voluntary codes and voluntary demand profiles, there is a very limited amount of demand in the market. We are simply not near the scale of being in a position where we can create liquidity.

The other aspect of liquidity is that we need standards and standardisation across the market, so people can start to buy and sell products and services, and can assess them in a comparable way. As we discussed earlier, there is still a really wide spectrum of quality. Being able to distinguish between projects is still quite ambiguous, so there is a need to start to standardise what these different services look like and what quality really means. That will also start to help with being able to create more supply and demand and, ultimately, move towards a more liquid market. As we start to access the investment capital that is sat there looking for these types of opportunities, I believe that we will start to see more liquidity.

**David Young:** I agree with that. I would only add, and we touched on it a bit earlier, that there is a range. We must not treat finance or investment as a homogenous thing. There are different risk appetites and different types of investors. A mature market will start to segment into the parts of the supply chain that match risk and return. That will be a very important factor to contribute to liquidity, to allow people to buy projects in the early stage of development, and then to sell them or sell credits from them and exit the market in a relatively smooth way. It is about having markets that are designed to recognise the different risk and return profiles investors have and allow for exit at different points in the supply chain.

**The Chair:** Thank you, Helen, David and James, for coming today. We most appreciate you helping with our sessions. We learned a lot about finance, so thank you very much. You will get a transcript of today's session. If you feel that any correction is required, please let us know. If you have any further information, we will be happy to have it. For today, thank you very much and goodbye.