HOUSE OF LORDS

Science and Technology Committee

Corrected oral evidence: Nature-based solutions for climate change

Tuesday 2 November 2021

10 am

Watch the meeting

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

Evidence Session No. 9 Heard in Public Questions 94 - 105

Witnesses

Richard Bramley, Chair of the Environment Forum, National Farmers Union; Professor Selina Stead, Chief Scientific Adviser, Marine Management Organisation; Thomas Lancaster, Head of Land, Seas and Climate Policy, Royal Society for the Protection of Birds.

USE OF THE TRANSCRIPT

Examination of witnesses

Richard Bramley, Professor Selina Stead and Thomas Lancaster.

Q94 **The Chair:** Good morning to our expert witnesses today and also to our specialist adviser, Pete. Lord Holmes is the only member who is on Zoom today. Good morning to everybody, including members of the committee who are physically here, and thank you to our expert witnesses, Mr Bramley, Professor Stead and Mr Lancaster, for coming today to help us with this inquiry; we value the time you have given up and we hope to get lots of information from you. So, welcome, and thank you very much. We are now on a public broadcast, which is being recorded. I will let you know when it ends, in an hour's time.

If I might kick off with the first question, lots of organisations, including NFU, RSPB et cetera, and the Government, have plans to get to net zero. In your view, how do the plans fit into nature-based solutions? Who would like to start?

Richard Bramley: Thank you for inviting me to join you today. As an organisation, we set the ambition for farming to reach net zero by 2040. I sit on the net zero steering group, which initially has been trying to get to grips with what is a huge and extremely complex subject. There are an awful lot of things to consider, but we are very clear that this is an important role for all to undertake, and farming is definitely going to be a key player.

The initiatives are essentially based around three pillars. First, we have to look at ever improving our productivity, and that is about using less and impacting less in the process; the third pillar is about the increasing use of renewables in a bio-based economy; but it is the middle one in particular that comes to protection and sequestration of carbon, which is where nature-based solutions really start to fit in. I think it is important also to note from the outset that nature-based solutions are not in themselves going to solve the problem. The issue of climate change has been driven by human activity and particularly by our reliance on fossil fuels, but nature-based solutions are going to have an important role to play, and farmers, as managers of around 70% of the landscape, are obviously going to be a key player within that.

Professor Selina Stead: Good morning and thank you. The Marine Management Organisation considers nature-based solutions a way to mitigate climate change. It is also involved in marine plans and, in 2021, England for the first time has a comprehensive, integrated set of them, so we are enhancing nature-based solutions—and I add that it is important that they are affordable and practical.

We urge that marine plans consider three aspects. First, we consider nature-based solutions to safeguard and enhance biodiversity. Secondly, we are using the marine plans to enhance nature-based solutions that can help protect natural capital. Thirdly, we are using nature-based solutions to identify significant locations for habitat restoration. To build on the comment from our previous speaker, it is really important when

we are considering nature-based solutions that we also consider the impact on nature-based livelihoods because, when we are talking about sustainable interventions, we must remember to balance not just the environmental and the economic impacts but also the social ones.

Thomas Lancaster: I would echo Richard Bramley's point about nature-based solutions not being a silver bullet in getting us to net zero. Emissions reductions will remain the main means by which we need to do that and, absolutely, continuing to decarbonise our economy—to move away from fossil fuels—will remain something we need to continue focusing on. The nature-based solutions should be in addition to all those efforts, not instead of, and we cannot stress that enough. Having said that, obviously we at the RSPB are big fans of nature-based solutions, and we think they can play a really important role in helping get the UK towards net zero.

As much as anything, we need to think about starting off with better protections for existing carbon stores. We did some work and analysis a couple of years ago to look at the existing carbon stores within habitats such as peatlands and woodlands, and coastal habitats such as salt marshes, which contain carbon amounting to around four years' worth of total UK carbon emissions, and yet 66% of the carbon in those habitats was outside existing protected areas, and we know that our existing protected area network is not in a good condition anyway. From a nature-based solutions perspective, it is not just about restoring and creating new habitats; we also need to think much harder about how we protect our existing habitats and about how we can secure those carbon stores. From that starting point, not only the restoration of habitats like wetlands and the creation of habitats like woodlands, but thinking about sustainable agriculture and agriforestry and those other interventions that can be integrated into some existing land uses, are ways in which we can help get toward net zero, and nature-based solutions can play a really important part.

Lord Krebs: I apologise for arriving a few moments late. Could I ask just two short questions? One is to the witness from the Marine Management Organisation and is about bottom trawling. Many, 95%, of UK marine protected areas permit bottom trawling, which disturbs carbon stocks. How do you envisage balancing the requirements of fishermen with the requirements of nature-based solutions for carbon storage?

Then for the NFU, I have a very brief question. You seem in your evidence to be more in favour of land sharing than land sparing, although Professor Balmford's analysis at Cambridge University suggests that land sparing may be a more effective way of storing carbon.

Richard Bramley: The task that we face in managing lands has a lot of asks to it. Obviously, the production of food is very critical. A broad approach to the land-sharing idea—where we both enhance or at least maintain our productivity using ever less resources while, at the same time, addressing improvements in the quality of the natural landscape—is what you would term a win-win situation.

There are, however, going to be areas where land sparing will come in, and I think most farms have an area of land—speaking for myself, I have such an area—that is not utilised for production. This probably comes back to the overall point that every farm is slightly different and every farmer has a different landscape that they are working with—they might be producing different products—and there is no "one size fits all" approach. As a rule, we are looking at ever more demands on our landscape, and we need to be very smart in how we deal with that, working with nature to produce foods, maintain biodiversity, protect air, soil and water, and address the issue of mitigating, as much as we can, the released carbon that we have had since the Industrial Revolution. So it is primarily about how we can do more, better, and that will not necessarily mean abandoning land and then finding ourselves reaching elsewhere in the world for our food source.

Lord Krebs: Could Professor Stead very briefly answer the question about bottom trawling and carbon storage? Are they compatible?

Professor Selina Stead: I would say that, where there is an opportunity, we should be looking for innovative finance that can help the industry move away from some of the current methods to using those that have less of an impact on the sediments. The Marine Management Organisation is responsible for the licensing of fishing vessels. We tend to manage one sector, per se, rather than looking at, say, offsetting from low trophic aquaculture, which can have additional benefits. I would be very happy to provide examples afterwards, rather than take more time here. Thank you for that really important question, which the MMO is working closely with the industry to address.

Q95 **Baroness Manningham-Buller:** Good morning. I would like to start my question by asking Mr Bramley and then Mr Lancaster whether they think that the Government's policies for change in land used to reach net zero are practical and realistic.

Richard Bramley: We are getting quite concerned about the mixed messages that we see coming from the Government when it comes to addressing the strategy of net zero. As has been pointed out already, we have to understand that farms are businesses as well as land managers. We have a situation in farming at the moment where there is a huge amount of economic pressure, which has been ongoing for quite some time, and that economic pressure has also led to pressures when it comes to availability of staff. Also, the competitive nature of food production has been exacerbated by us reaching out for trade deals with countries that we are going to struggle to compete with. So we cannot lose sight of the economic constraints that we are working on in farming.

What Government are trying to achieve is something that we are struggling with. We are certainly very clear that we are not going to be able to achieve our ambition for net zero on our own; it is going to need a buy-in throughout the food chain, and the Government are going to be very important facilitators of that.

Thomas Lancaster: There is certainly a lot to welcome in the Government's rhetoric around nature-based solutions and the role that they envisage them playing in net zero, but also wider nature recovery. There is, however, a disconnect between the rhetoric and the reality in terms of the investment and action that is being taken on that front in the here and now. For example, 87% of peatlands, which are our most important terrestrial carbon store, are degraded at the moment and are a significant source of CO_2 and greenhouse gas emissions—about 5% of the UK's total. Although the recent government Nature for Climate Fund and the additional investment into it from the recent spending review are welcome, they are not in any way, shape or form sufficient to restore that peatland or even to start the process fast enough to meet the Climate Change Committee's balanced pathway to net zero assumption of restoring 100% of upland peat and of 60% of lowland peat being restored or in sustainable use by 2045.

What we really need to see, if we are to get to the sort of level of ambition that the CCC envisages, is significant investment now from Government. We need to see nature-based solutions placed on a similar footing to other areas of infrastructure. There is £27 billion allocated to road building, and all investment in nature-based solutions pales in comparison with investment in grey infrastructure—both ongoing and envisaged—and that is just not tenable if we are to meet the scale of ambition that the Government say they are signed up to.

We need also to improve regulatory action. If you take upland peat, there was a recent announcement of a ban on burning it, but that applies only to deep peat in protected areas. If we are to meet the CCC's ambition to restore 100% of upland peat, given the role that that can play in not just storing and sequestering carbon but recovering nature, mitigating flood risk and improving water quality, we need to take simple legislative action to ban damaging activities that we know are already hindering our ability to deliver nature-based solutions in the here and now.

Baroness Manningham-Buller: I think the answer from both of you is that this is not going to happen without some fairly significant legislative change and investment change and a refocusing of effort. Does that summarise what you are both saying?

Thomas Lancaster: Yes, that is a fair summary from my perspective.

Baroness Manningham-Buller: Professor Stead, do you want to add anything to your two co-panellists' points?

Professor Selina Stead: When we are looking at the targets, it is really important that the policies look at linking not only coastal and marine areas in particular, but also the different sectors. I have noted that the targets are not necessarily appropriate to particular sectors' upscaling or expansion rates, so I feel that is an area that needs closer attention.

Q96 **Lord Kakkar:** I wonder whether I could address this question specifically to Professor Stead. It is about the maturity of the evidence base and policy base for nature-based solutions on the marine side at the moment.

We have heard that on the marine side it may be less mature than in other areas. As a result, at what stage do you feel stakeholder engagement is in this particular field, and who are the stakeholders? With regard to marine-based solutions in particular—we have heard about this already in this session—what is the awareness and the level of engagement of, for instance, those responsible for marine planning, those engaged in fisheries and large-scale fishing and those responsible for the regulation of the highly protected marine areas that have now been established?

Professor Selina Stead: One of the biggest advances is the development of the marine plans that cover the whole coast of England. I should also say that we are responsible for working with the overseas territories and should remember that there are lots of lessons to be learned from a lot of the planning legislation that is used around the world. I just wanted to put that as context.

In terms of where we are with stakeholder engagement, there are three components to the plans that rely on stakeholders. There is identifying who the stakeholders are. To me, to get effective engagement, you need to ensure that you have representative stakeholders from public, private and third sectors, as well as civic society. I would also say that looking at evidence is not just about looking at empirical, natural, physical science evidence; we need also to ensure we are taking greater account of both social and economic information. We are still not always able to capture some of the cultural and heritage knowledge, and that is really important for planning. I would emphasise these recent marine coastal plans because we at the MMO are very proud of having achieved that—a first for England. It is a real challenge to go across different government policy areas. That join-up between the different areas and between different sectors is key.

I gave that as background, and I will just give some specific examples of the areas that you asked about. There are now interactive maps for all the coastal areas around England, which allow, for the first time, local authorities, businesses and local people to see different habitats, species and activities. However, who has priority access to and use of natural resources often comes down to political will; therefore, ensuring stakeholders have a voice and the trade-offs for different uses of marine resources are considered is really important for inclusive decision-making.

May I give some examples of nature-based solutions and blue carbon? If one wants to invest in habitat restoration of seagrass, one has to consider who and what that is displacing, and how. If it is displacing fishers or activities such as offshore wind, we need to look more at coexistence and colocation of different activities.

You also mentioned fisheries. We need to have a greater link-up between future climate-smart fisheries management and technology. For example, we know that cleaner technology for fishing vessels requires a longer design and a different hull shape and that licensing is based on the length of the vessel. It is really important that we have linked-up management

and policy, and the Marine Management Organisation is about sustainable management intervention. We link the operation of technology and legislation.

I think that the last point you asked me about, highly protected marine areas, is really important when we are looking at protection. My experience of working in the UK and overseas is that one has to be careful that you do not displace the activity to other areas of the seabed or to the oceans. And that is where you need all the different sectors' representations when we are looking at which habitats or species are protected, and where. I hope that addresses your question.

Q97 **Lord Kakkar:** It does indeed; thank you very much. Lord Chairman, may I come back with a supplementary? Professor Stead, you rightly mention—many congratulations on having established this—the comprehensive integrated marine plans across the country. Having done that work and established these comprehensive integrated plans, to be applied in the way that you discuss, do you believe that there is now the benefit of sufficient resource and capacity for engagement in order to achieve the objectives that you have outlined?

Professor Selina Stead: The simple answer is no. If I may put my academic hat on, when planning in coastal and marine—I worked in a land economy department for five years previously—you cannot see the impacts. The training and capacity-building is not at a mature stage. The UK is famous around the world for its systems approaches to management and to intervention. However, we have not invested significantly enough in digital transformation of our modelling to make this happen and to take advantage of, for example, the Alan Turing Institute's AI deep machine learning, at the pace it needs to happen at. For example, Canada spent 200 million to develop an ocean institute to improve co-ordination between government, academia and industry, and I think the UK needs to catch up if we are to maintain our excellence in the field of marine and coastal management and nature-based solutions.

Q98 **Baroness Walmsley:** I was very interested to hear about the interactive map that lets people know where the protected areas are. Can you tell us, given recent events, how one goes about monitoring and enforcement of the protection of these areas, and do you have the resources to do that?

Professor Selina Stead: The Marine Management Organisation has worked very closely with the Navy for some of its more offshore enforcement activities and we are now using drones and different types of modern technology; however, the resources are limited. Shipping for days at sea is very expensive. We should be working very closely with industry to get the support through self-regulation and voluntary codes. My research on rule-breaking and compliance is very much that, if you get the effective engagement and setting up of policies, regulations and management features from the start, you are much more likely to have greater support and it is much more likely for there to be whistleblowing at those who are not compliant. In summary, we certainly need greater

investment to stay ahead on technology in order to allow us to do the compliance and some of the analysis and monitoring, and I think we could also put more effort into self-regulation and softer governance mechanisms.

Q99 **Viscount Hanworth:** I am seeking definitions of protected areas and highly protected areas. If bottom trawling is permitted in protected areas, what are they being protected from?

Professor Selina Stead: I am happy to come in briefly. I think we can mitigate bottom trawling, which is a highly contentious issue, by offsetting carbon using certain types of aquaculture that have benefits in carbon capture. We should be providing transitional support to enable the industry to move towards using sustainable approaches to fishing. That would certainly be my recommendation. I think this is where creative financing, linked with policies, licensing and the operation of management will make a huge difference.

Viscount Hanworth: Can I try again? What is being protected and what is being highly protected? Tom Lancaster, can you give us a sense of how effective the protections are and what is being disbarred?

Thomas Lancaster: We certainly have long-standing concerns about the effectiveness of marine protected areas, given the level of ongoing activity that is permitted in them at the moment and, as Professor Stead mentioned, the lack of resource that exists to enforce the protections that those areas are subject to.

From a blue carbon perspective, there is a lot to do to ensure that the MPAs and the marine conservation zone network are sufficient when it comes to protecting marine carbon stores. I think some recent work found that 51.9% of the organic carbon stores in the English North Sea are in the current protected area network, but when you think about it, obviously that leaves a lot outside the MPA network. The fact that bottom trawling and other damaging activity are permitted within the MPA network in many instances means that the current carbon store within that particular area is hugely vulnerable to disturbance, which disrupts the processes whereby carbon is drawn down through the column and into the seabed. I think it is estimated that up to 1.2 megatonnes of carbon are added annually to the sediment in the North Sea, but the disturbance that the seabed is subject to means that that carbon is not being laid down reliably, if you like, and is not being stored and added to over time. So at the moment we are just not utilising the protected area network to ensure that blue carbon is playing the role that it otherwise could within our overall efforts to get toward net zero. That is a huge issue to address as we think about how we can improve the protected area network, not just through highly protected areas but through improvements to how we manage all protected areas in the marine environment.

Viscount Hanworth: Perhaps you could guide us to where these terms are defined. I am at a loss because I do not know where to look in order

to find what protections have been enacted and where the lacunae are.

Thomas Lancaster: We could certainly come back with more information on that and the reasons why, if that would be useful.

Viscount Hanworth: Could you, please, because I have not found proper definitions?

Q100 **Baroness Sheehan:** Can I follow up on the marine environment? Professor Stead, I wonder whether you could tell us how important the Crown Estate is as a stakeholder in the marine environment, for nature-based solutions, and what level of engagement the MMO has with the Crown Estate. I am afraid this committee was unable to get any engagement with it.

Professor Selina Stead: The Crown Estate is interesting, in its role as both a landlord and a regulator. The MMO, as part of its licensing obligation, interacts with the Crown Estate, particularly given its ownership of the seabed. Certainly, within licensing, interaction with the Crown Estate is part of our procedures in consultation and as part of our stakeholder engagement. We are working more closely with the Crown Estate and with other organisations, so that we can review and evaluate some of our management interventions and work closely with Defra colleagues to review our policies, which is an ongoing development in our relationships.

Baroness Sheehan: So it is a major landowner of the marine environment.

Professor Selina Stead: Yes, it is—of the seabed.

Q101 **Baroness Sheehan:** Mr Lancaster, what are the major barriers or concerns that are preventing land managers and marine stakeholders—I will come on to Professor Stead later—from supporting nature-based solutions and how can these be addressed?

Thomas Lancaster: I think there is a range of them. At the moment, a particularly acute one is an issue around policy certainty. Particularly in a land management and agriculture context, we are in a bit of a policy no man's land in some respects, in that we have largely moved away from common agricultural policy schemes, but the new policies that are designed to come in under Defra's future farming and countryside programme, such as the new environmental land management scheme and a range of other future farming schemes, are not yet operational at scale and are not envisaged to be until 2024. Lots of farmers and land managers, when they are looking at whether they should engage with the nature-based solutions agenda and the broader sustainable land management agenda, can be forgiven for hesitating and thinking, "Well, should I go now, or should I wait to understand what the best returns are going to be for me? If I go into this scheme that's currently available, will I get paid less than if I were to wait for a scheme that might be available in two or three years' time?" That is a huge issue in moving forward with

the deployment of nature-based solutions and more sustainable land management at scale in this Parliament, if you like.

Funding remains an issue. We have the commitment to maintain the overall envelope of spending for farm support, in its broadest possible sense, to the end of this Parliament, but when you are thinking about things like taking land out of production to create new woodlands or new wetlands, that is not a great deal of assurance, given that you are making, in effect, a permanent land use change. How that land use change is going to be funded in the long term is a huge issue for land managers.

A third barrier that I would add, in the terrestrial environment, is around advisory capacity of, particularly, agencies such as Natural England and the Forestry Commission. We know that when these schemes have worked well in the past it is because there have been boots on the ground from those bodies to help farmers and land managers to navigate the schemes, and in effect to be the shop window for those schemes and to sell farmers the merits and benefits of them. If we do not have trusted advisers in place doing that job, farmers are having to navigate much of this alone, in effect, or without the necessary support.

Q102 **Baroness Sheehan:** Tom Lancaster, before I ask the same question of Richard Bramley, could you just talk a little about whether land managers have access to people with enough skills to do what they want to do with nature-based solutions?

Thomas Lancaster: I do not think they do, picking up on my last point. There are lots of really knowledgeable and skilled advisers out there, and I think there absolutely is a logic to expecting farmers and land managers to invest in some of that advice themselves, up to a point, but we also need neutral actors from the likes of Natural England to be in place. Over the past 10 years, we have seen a significant hollowing out of that agency capacity, particularly when it comes to those people on the ground whom farmers know and trust. If you speak to most farmers, they will say they have not seen anyone from Natural England for a long time and that all the people they used to know are not there anymore.

When it comes to helping farmers through this agricultural transition that we have just embarked upon and trying to get them to embrace the nature-based solutions agenda—let's face it, this is an ambitious agenda—we are expecting a lot of farmers to make some significant land use change and, to do that, you will need a lot more capacity than we currently have in those public-sector bodies. Otherwise, we are just not going to get to the scale of activity that we need to need to get to.

Baroness Sheehan: I am conscious of time but, Richard Bramley, could you fill in the gaps in terms of land use? Then I will move on to Professor Stead to talk about the marine environment.

Richard Bramley: Tom has picked up on a lot of the key points. I am one of the farmers in question whom these policies are directed at. I would like to think that I am relatively switched on, and I have to say

that I find it a real minefield and do not have a clue how this is going to take shape. The NFU as a body has been giving our input for the past five years, as have I at every opportunity, and this is really very concerning. The previous support system through the CAP was not designed by farmers, but farmers have been dealt that card. That has become very integrated in a lot of businesses but will be declining from this year.

The first iterations of ELMS have just come through, in the sustainable farming incentive pilot, which I am involved with, and I had to call in somebody to help see me through that, because it is not straightforward and it has a lot of gaps in it as well. A lot of the prescriptions do not necessarily address what we are trying to do but, as it is a pilot, it is going to be very useful to be involved in trying to help shape it.

I think the key point for me—Tom touched on this—is just the sheer complexity of what is coming; this is not getting simpler. If you ask any farmer, "What's the thing that you would love to have more control over?" the answer they would probably give you is, "The weather", because that has the biggest impact on everything they do and how their farm performs. The weather is changing, which is driven by climate change, and we are having to build in ever more resilience at a time when we have ever more uncertainty. This comes back to the mixed messages that we are seeing from Government that I touched upon earlier.

Also, there is the general narrative. If you look at a lot of reports in the media, what is the one thing that is put forward that you can do to address climate change? It is all directed at meat consumption—going plant based. Everything that I produce on this farm is aimed at the human market, yet there is a co-product alongside everything that I produce that needs to go through livestock in order to get the best out of that produce. That narrative really has to change.

When you sit looking at it from a farmer's perspective, you feel very embattled, like somehow everything is on your shoulders, and we need to find some way to be free of that. We need to start to enthuse farmers and excite them about the possibilities and then enable them, at the same time, to start to release that potential, because the potential out there is huge. There are a lot of farmers who are very willing to engage with this and are already on that course.

It is going to be a combination of things, but certainly the complexity is something that is very concerning, and finding people to help farmers work through that is going to be another challenge.

Baroness Sheehan: Professor Stead, would you like to respond to my earlier question on barriers?

Professor Selina Stead: I will keep it brief. I will focus on two barriers: one is language and the second is ownership. On language, I find that "nature-based solutions" is like a buzzword to many sectors and to many people: it is not relatable; they do not really know about it; it is quite a nebulous concept. Twelve years of working on the North Eastern Inshore Fisheries and Conservation Authority taught me a lot about language and

relating to the target audience. The second barrier, on ownership, is that there are risks, particularly when we are looking at investment or interventions, because the sea and oceans is a common resource, and being able to give new investors greater assurance about risk in terms of investing activities in the marine environment is another important area.

I could expand but, in view of the time, I will keep to just those two points and would be very happy to provide supplementary information after this session.

Q103 **Lord Krebs**: This is a question that perhaps either Richard or Thomas could answer. We heard in an earlier evidence session about carbon credits, the woodland carbon code and that comparable codes for soils and marine environments are being developed. I just wonder, in terms of financing, whether you see that these carbon credits validated under schemes like the woodland carbon code are a suitable incentive. Would farmers invest in carbon capture through a market on carbon credits?

Richard Bramley: Payment regarding carbon is a very hot topic at the moment. One of the things that we have identified through the steering group has been some fairly fundamental challenges when it comes to measuring carbon. There are a lot of carbon calculators out there that farmers can utilise, and there are varying degrees of understanding of them within the farming community, which we have found through conducting a tests and trials scheme on which we have been working with Defra. This has highlighted that these calculators are a very good starting point, in that they help farmers to identify how they can make improvements but, when it comes to being able to measure carbon, we still have quite a challenge.

Carbon storage needs to be long term, but there is a movement out there that views carbon as the next money-making opportunity, and I think we need to be very careful and mindful of that. Certainly, the shifts that will be needed on farm are going to require investment, and that is going to have to come from somewhere. Payment through carbon credits is going to be one such source, and that could be through either government or private funding—there are a lot of companies that are interested—but I am also very mindful of the role that offsetting plays in this and the question of whether we are just masking over the bigger changes that are going to be needed. We have to be very careful, with all the other issues that farmers are dealing with, that they do not—for want of a better word—get hoodwinked into selling carbon that they then have "lost", in inverted commas. I think it is important to get investment on to farms to support them in improving their carbon footprints and in their drive to net zero, but we have to be very mindful that this is a new arena and there should be some scope to help farmers deal with that.

Q104 **Baroness Walmsley:** Before I ask my question, I declare my interest as a former chair and current supporter of Botanic Gardens Conservation International. Its work on trees is particularly relevant to this inquiry.

I would like to take Mr Bramley back to his "minefield" of the ELMS—the

environmental land management schemes. We have heard very clearly from you, Mr Bramley, about some of the problems with them, but if your fairy godmother gave you three wishes, how would you like to see them designed? Perhaps in doing so, you might also address the embryonic soil carbon code, from the point of view of stakeholders such as you and other land managers, and the types of practices that it should cover or the regulations that should be involved there. I will come to Mr Lancaster after you have dealt with it, Mr Bramley.

Richard Bramley: Thank you very much for granting my three wishes. I think that the whole basis for future policy has been around the payment for public goods principle. It has been very clear to me that many farmers have a very important role, alongside producing food, in delivering public goods. Sometimes that has been through environmental schemes, sometimes it has been voluntary and sometimes it has been through getting involved and supporting initiatives such as the Campaign for the Farmed Environment, which is now Championing the Farmed Environment—it had a little bit of a morph a few years back. They are all really positive things.

One of the things that I think has been missing to date is identifying, from the starting point of individual farms, what public goods you are already delivering and what value they have. I think that would be very useful. With the sustainable farming incentive, we have sort of leapt straight into what, for all intents and purposes, looks like another stewardship scheme. Once we have identified where a farm sits now, you can start to look at where the shortfalls and the areas where you could really start to improve are, bearing in mind the individuality of every farm. They are all going to have a different approach, so having something that is top down when it comes to the policy that is being built can also create problems in that you can miss opportunities, whereas a bottom-up approach from a farm level would be a really good starting point, because you would start to help farmers to become more engaged in what is on offer, and that leads to them getting a better understanding and then you can build on the opportunities. So that would probably be a good starting point.

I think that, given where we are, a second thing is whether we have in mind a single point where all these different initiatives can coalesce, so that by the time the information is being discussed or being read at the kitchen table—for example, when you are having your breakfast after a three-hour milking session, or after a long day on the combine—it is relatively easy to understand and pick your way through that minefield. That would be another thing that would be really useful.

Then it comes down to positivity. Farming is absolutely critical in the production of food to sustain everyone in this country. We have a really important role to play, and I think that building on that, taking some of the negativity out of it and really enthusing people about possibilities would be very good.

As for the soil carbon code, again, there is an awful lot of good already being done. The metrics are individual to all different soil types and,

often, to all different cropping systems as well. Some cropping systems might not be as favourable but they are growing produce that we need—I am thinking here of root crop vegetables, for which we rely on imports.

We have to be careful that we do not disincentivise what is ultimately the aim of farming, which is the production of food, within any code that is created. A code will need to be flexible and practical and to recognise the day-to-day challenges in crop and land management, without hanging the ability to be flexible. Because at this time of year I am establishing and harvesting crops, I know first hand that I have to make decisions—"I would prefer to do this, but I can't in the circumstances, because that's going to impact on that, so I need to do that, which isn't preferable but it's going to be better in the long run"—on an almost daily basis. It is very difficult to get that to fit into any "one size fits all" code. It relies on education and on the personal understanding that a farmer has of their particular patch. So I suggest there would need to be some flexibility within the code, and a recognition that it is not always straightforward and that one year or one season is different to another.

Baroness Walmsley: Before I go to Mr Lancaster, did I detect that your bottom-up solution to ELMS would require more advisory services from Natural England?

Richard Bramley: It is inevitable, unless there is going to be a complete remodelling, that there will need to be good advisory support that is working in the interests of both the farmer and the environment, because those two things go hand in hand.

Baroness Walmsley: Mr Lancaster, would you like to give us your view about how to design a good ELMS?

Thomas Lancaster: Going back to your three wishes, from my perspective, our three are that ELMS is effective, practical and deliverable, and we think of that as a bit of a holy trinity for ELMS and something that, to be honest, has probably never been achieved before. Just to elaborate slightly, we think of that as being effective for the natural environment, practical for farmers and deliverable for government. We have had instances where a scheme has been two but maybe not three of those. Entry-level stewardship was very practical for farmers and it was very easy for government to deliver, but it was not awfully effective for the natural environment, and all the evaluation and work that went into that scheme found that was the case. Its counterpart, higher-level stewardship, was really effective for the natural environment and I think that farmers who went into it found it to be practical and, with enough investment in agency capacity from Natural England, it was deliverable, too; however, we only ever got to about 15% of farmland with that scheme, and that is just not enough when thinking about the scale of uptake that we will need for a scheme like that, if we are to meet species recovery targets that are now coming through in the Environment Bill and if we are, as we are talking about in this inquiry, to deploy nature-based solutions at the sort of scale that we need in order to get to net zero. So that is our organising framework, if you like, in

thinking about how ELMS can be designed to be effective, practical and deliverable.

We absolutely agree with Richard's point about the need for, in particular, the more tailored and targeted aspects of ELMS to be bottom up and flexible on the ground. Schemes that are too rigid and inflexible are not going to be met with the sort of enthusiasm that we need farmers and land managers to meet them with, and they are not going to be capable of being tailored in order to recognise fundamentally that the natural environment is a complex and dynamic system that does react well to a "one size fits all" prescription. Again, I go back to my point that to do that you need the advisory capacity and the facilitation on the ground to be able to input expert advice and ecological expertise so that, if you are thinking about, for example, a species-rich grassland, the stocking density and the other management that goes into it are appropriate and farmers have the support to be able to deliver that management effectively.

Q105 **Baroness Walmsley:** Talking about complex and dynamic systems, the RSPB manages quite a lot of land. Do you have a view about the soil carbon code and how it might affect you?

Thomas Lancaster: We are generally supportive of the woodland and peatland carbon codes, as they are running at the moment. The peatland carbon code is probably most relevant to the RSPB, thinking about soil. Also, peat is our most carbon-rich soil. From a broader perspective, I think we would have some concerns about how permanent the carbon that might be stored through a soil carbon code would be, given how vulnerable soil is to disturbance. My understanding of the evidence is that you get carbon sequestration in soils, but that tops out after about 20 years or so. So I think we have some caution about how effective a soil carbon code could be, and we would want to see some fairly stringent safeguards, so that the soil carbon that the money was invested in was going to remain in the ground rather than just be ploughed up after 10, 15 or 20 years, which is obviously a big risk when you are talking about something that is subject to so easily being disturbed.

The Chair: I think our time is up. Thank you very much indeed, Mr Bramley, Professor Stead and Mr Lancaster; it has been a most interesting session—very informative. If you have any more thoughts about some of the questions asked, or any other thoughts, please feel free to write in, and we will use that as evidence. We appreciate that. But for today, thank you very much for coming; I am very appreciative of your time.