



Environmental Audit Committee

Oral evidence: [Flooding: Cooperation across Government](#), HC 768

Wednesday 3 February 2016

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Members present: Peter Heaton-Jones (Chair), Mary Creagh, Geraint Davies, Margaret Greenwood, Mr Peter Lilley.

Questions 70 - 169

Witness: **George Monbiot**, Columnist, *The Guardian*, gave evidence.

Q70 Chair: Good afternoon, everybody. Can I start with an apology that we are running much later than we had expected, I am afraid? As you can imagine there have been plenty of other activities going on in the House today and that is why there are, I am afraid, rather fewer members here and I am merely a stand-in host for today. Apologies, Mr Monbiot, thank you very much indeed for waiting and thank you for coming to give evidence to us today. This is the second hearing of the Environmental Audit Committee's inquiry on Flooding: Co-operation across Government. Our first panellist today—we are delighted to have you here—George Monbiot, who on my piece of paper is described as a columnist for *The Guardian*. You are many other things but that is the title and we thank you for coming and helping us with our evidence today. We will go straight into the questions if we may, and can I start by asking, Mr Monbiot, how, in your view, has the Government's approach to land management in high flood-risk areas impacted on the further risk of flooding?

George Monbiot: I see it as being confused, contradictory and often directly damaging. There is an interaction between the Government policies and European Union policies, which perhaps we can come on to. But where Government is concerned, one of the most foolish interventions, in my view, has been the decision by Liz Truss, if she gets Parliamentary approval, to authorise the unregulated dredging of drains and small watercourses crossing farmers' lands. It may well be that in certain specific circumstances there is an argument for dredging, very limited in scope but in particular places, but the worst thing you can possibly do is to have an unregulated, uncontrolled dredging of watercourses around a catchment because it is likely to enhance flood peaks downstream, so that is one aspect.

She has also spoken about saving 1 million acres of farmland from flooding. While I can completely understand why farmers wish to have their land saved from flooding—it is a perfectly legitimate wish—there is very often a payoff between flooding agricultural land

and flooding the settlements downstream. If you are not storing the water on farmland, that water is more likely to be rushing downstream, hitting the nearest urban pinch point and severely testing the urban flood defences. You could find yourself costing the public hundreds of times more than if you were to pay farmers to flood their fields. But what makes this peculiar and surprising is that she is simultaneously talking about paying farmers to flood their fields and a number of other sensible management options in order to try to reduce flood peaks. There is real confusion and contradiction here, which I believe urgently needs to be resolved.

Q71 Chair: In your view, how should that be resolved or how could it be resolved?

George Monbiot: I believe we should start looking at catchments as a whole. We have tended to look at rivers as if they arise in the flood plains and to concentrate almost exclusively what happens within those flood plains. There is an entirely legitimate critique of some very foolish decisions in building homes on the flood plain but the built environment accounts for just 7% of the land area of England. The 93% we have tended to neglect when looking at where floods come from. The general principle should be rather than sitting at the bottom of the catchment where the towns are, hiding behind a flood barrier and praying to goodness that flood barrier is going to be high enough to withstand the wall of water when it comes rushing down the catchment, is to stop that wall of water from gathering in the first place. There are various natural flood-management techniques that can attenuate that wall of water, reduce the flood peak, desynchronise the arrival of water in the river so that you slow it down, bring down the peak and, hopefully, then give your flood defences at the bottom of the catchment a better chance of succeeding.

Q72 Chair: What would be your view on the view expressed by the Prime Minister that it is up to local groups, local authorities, to know their local areas better and for them to make those sorts of decisions, rather to impose one-size-fits-all strategies or policies from Whitehall?

George Monbiot: I think that has got many virtues. There needs to be some overriding framework of principles and some basic common sense applied from the top, from Government. But to the greatest extent possible, yes, we should be allowing communities to have their say on how catchments are managed. There is a problem at the local level in that you have your local flood authorities whose boundaries often cross catchments and so they don't necessarily have an interest or at least a means of influencing what is going on upstream. Perhaps we should be looking at the catchment almost as a political unit when it comes to flood management.

Chair: Very interesting, thank you.

Q73 Margaret Greenwood: Following on from your remarks, would you say that, ultimately, we should be protecting people's homes; should that be the priority rather than farmland?

George Monbiot: That is certainly what makes economic sense. That is not to say there should be no protection of farmland but when there is a straightforward choice, as in many cases there is, between storing water on the flood plain where it is safe to do so—in other words, we are almost entirely talking about agricultural land—or letting that water rush

down to people's homes, then it makes economic sense and humanitarian sense to be storing it.

I am very struck by one thing: I was walking in Cumbria relatively recently and there I noted that almost all the inbye land—the low-lying land around the rivers—was being defended by embankments. This land, of course, is of value to farmers but land on which a few sheep and cattle are being kept. Those defences are unquestionably exacerbating the flood risk for settlements downstream. The choice seemed to me to be so simple, a few sheep and cattle that could be kept in barns over the winter, for example, or those communities downstream. How is that a difficult choice to make?

Q74 Geraint Davies: I want to ask you what you felt about Dieter Helm's comments about breaking up the Environment Agency. But before you answer that, on this last point, are you saying that what we should strategically be doing is withdrawing defences from rural farmland, so by implication it is flooded and, therefore, there is less pressure or are you saying we should have some sort of complex compensatory system of paying farmers because we are not defending them?

George Monbiot: Farmers should definitely be compensated for storing that water on their land and I would suggest that is a lot cheaper than allowing houses to flood downstream. But it is not just a question of passively allowing that land to flood. There are various interventions that you can bring about on that land that make it better at holding back the water. There was some modelling done, for instance, on the River Cary in Somerset that showed that if you take just 2% of the catchment and plant riparian woodland, woodland across the flood plain, its hydraulic roughness—the degree to which it basically trips up the water and holds it back—would reduce the river flow by 50% and the speed of the flow by 50%, increase the capacity of flood retention by 71% and hold back the flood peak by 140 minutes.

Geraint Davies: In other words, what you are saying is not that we simply stop protecting rural land because it is channelling the water down but something more than that; you are saying we actively control catchments in a way that engineers the storage of upstream water.

George Monbiot: That is right, exactly, exactly and you can do that to a large extent, although not entirely by any means, through the strategic use of vegetation.

Q75 Geraint Davies: Dieter Helm, as I mentioned, is saying that the Environment Agency should be broken up or become solely involved with flood-risk management, as opposed to a broader environmental regulator. Do you have any views on that?

George Monbiot: I read Dieter's testimony and I think it has got some virtues. There was a panicked response in both the two most recent flood events, this year and two years ago, where the Environment Agency would suddenly announce that all its resources were being diverted to flooding, leaving pollution, the protection of wildlife and a whole load of other issues unaddressed during that time. But there is also a sense that when massive cuts are levied against an agency like that, whether it is divided up or whether it is intact, it loses much of its capacity to respond to a whole range of issues. Whether this is a structural problem or whether this is a funding problem, it is hard to divide those two issues.

Q76 Geraint Davies: You would not take the view that the alternative to sharper focus is a more holistic approach—in the case of Wales, the Countryside Commission for Wales and the Forestry Commission have been merged with the Environment Agency Wales—the things you are talking about are land-use management and sustainable development being integrated into hard defences. So you do not think we should do, virtually, the opposite to what Dieter Helm is saying, for those reasons, do you?

George Monbiot: I have not seen a comparison of the performance of NRW versus the Environment Agency. But I do think it is necessary to have a national agency to lay down principles, as long as there is local autonomy about how those principles are best applied. One thing that is very clear is you can't have a one-size-fits-all approach that is going to work for every catchment.

Q77 Geraint Davies: Do you think there is a conflict between protecting people and protecting the environment? If there is, do you think it would be sensible to just give one hat to one narrowly focused organisation, the Environment Agency, so that contradiction becomes worse and not better possibly?

George Monbiot: I was dismayed to see the Environment Agency suggest there was a conflict after David Cameron had said the same thing. I don't believe there is at all. I feel that the interventions, which are great for wildlife, such as rewilding, such as bringing back woodland in this extremely bare nation—the European average forest cover is 37%, ours is 13%—and such as allowing rivers to meander once more, allowing hydraulic roughness in the flood plain, which mostly means flood plain forests, and woody dams in rivers, are all tremendously good for wildlife, but they also protect the human beings downstream. In my view, far from there being a conflict, the two issues are complementary. On the structural political issue, I don't have much to say on that.

Q78 Chair: You mentioned the example of the Cary in Somerset where the riparian woodland would have had a fairly substantial effect on reducing the through flow, how typical would that be? Would that be able to be applied to other catchments?

George Monbiot: There is a great lack of data at the moment. One of the big problems is that hydraulic modelling is not being obliged to take into account land use and land-use changes. It has been very much a question of, do these hard defences work better than those hard defences? There are some real data gaps. It is clear that catchments perform in different ways, it depends on the steepness and roll type, the soil type and the rest of it. But, by and large, the more you are impeding that water and slowing it down at crucial sections of the catchment, the safer it will be downstream.

Chair: Although the details might be different the principle will hold through throughout the catchments.

George Monbiot: In Holland they have a principle called acceptable uncertainty when dealing with rivers and when it comes to issues like Room for the River, their programme there, or the Sand Engine programme, they say, "We don't know everything. We don't yet have the whole story. We are going to do these largescale projects that we believe are going to be very useful, they are no-regrets projects anyway because they are not doing any great harm and they are not all that expensive but they will also function, in effect, as

experiments at the same time”. Perhaps there needs to be a bit of loosening up here so that we can take the same approach.

Chair: We are well used to acceptable uncertainties on this Committee, so we feel right at home.

Q79 Margaret Greenwood: Dieter Helm told the Committee that it is fundamentally misconceived to think of flooding as an issue where you have to choose between protecting the people and protecting the environment. Do you agree? I think you have partially answered that question.

George Monbiot: Yes, I very strongly agree with that. Unless we are defending the living world on all sorts of levels, we, in the long term, undermine our own prosperity, perhaps eventually our own survival. But it is especially acute when it comes to flooding issues because project after project can demonstrate that doing what works for wildlife and what works for habitats can also work extremely well for human beings. This idea that there is a choice to be made between protecting people and protecting wildlife, in no subject does that idea break down more clearly than on the issue of flooding.

Q80 Margaret Greenwood: You argue that when faced with heavy rainfall we have to choose either to flood agricultural land or cities and towns. Is that not also a false dichotomy?

George Monbiot: The water has to go somewhere. We are talking about vast amounts of water coming down the catchment. After I lived in mid-Wales for five years I discovered that it tends not to be true that the rain falls mostly on the plain, it falls mostly in the hills. Unless you can hold it back or even if you can hold it back for some time, it is going to gather eventually down on the flood plains. The river in most cases can take 1%, 2% of the water that is covering the catchment. You are not going to be able to use the river for storage. If you are dredging the river—unless in very particular, peculiar circumstances—you are likely to make the problems downstream greater. At some point you have to hold that water and store it, if you are to reduce the flood peak, reduce the rate of flow, and slow everything down to give the barriers at the bottom of the catchment a chance to work. That means that water has to go somewhere. Unless you are being strategic about it, unless you are holding it back, it is going to come down and overwhelm those flood defences.

I was much struck, just before the floods this year hit in Cumbria and Yorkshire, when I happened to get e-mails from two of my readers, one of which said, “Look at what they have done to the River Eden and the embankments all along the agricultural land. This is a formula for disaster”. Another said, “Look at what they have done to the River Foss, just upstream from York, where they are protecting the agricultural land, this too is going to be a formula for disaster”. I have seldom in my 30 years as an environmental journalist come across a clearer link between prediction and immediate consequences than that.

Q81 Mr Peter Lilley: What effect do you think EU policy has had on the UK’s ability to ensure its resilience against flooding?

George Monbiot: Thank you for that. This is crucially important and I am glad you brought it up.

There are a number of what I see as perverse uses of public money, which reduce our resilience to flooding and increase the likelihood of dangerous levels of floods. One of these is the permanent ineligible features rule attached to the basic payment scheme. The basic payment scheme is 88% of the money allocated under farm subsidies. It is money for owning land, in effect. You do not have to produce a single ear of wheat or a single lamb chop, you just have it for owning the land. But that land has to be kept in what is called agricultural condition. It must look as if agriculture can take place there, whether or not any agriculture is happening. To be in agricultural condition it must not contain permanent ineligible features. That is what they call the stuff that I call wildlife habitats. Those features include dense scrub, wood, rivers wider than a certain very narrow band, ponds, reed beds, bunds across the fields. They include just about every single feature that slows the flow of water downstream.

So the net effect of the public funding of agriculture, of this vast amount of money that we are pouring into it, €55 billion across the EU, over £3 billion in Britain, is to remove the very features that both harbour wildlife and offer us downstream protection. This is one of the most perverse instances of subsidy rules in any industry I have yet come across.

Q82 Mr Peter Lilley: That is in the EU rule as well and not the British Government Environment Agency over-interpreting?

George Monbiot: I have checked this to the greatest extent possible. I have had contradictory responses but the overwhelming consensus is there is not a lot we can do about this. This is European rules. There is a review of greening coming up this summer and there might be some opportunity to challenge it, but at the moment it looks as if this is hard and fast. The Rural Payments Agency says farmers have to report any features that amount to more than 0.01 hectare—which is an area between me and the wall, squared—and those features will be classed as being outside the agricultural envelope and therefore ineligible for funding. So farmers have this very powerful incentive to erase those features from the land. From what I can see, it is not the Rural Payments Agency over-interpreting. It is the Rural Payments Agency quite faithfully repeating the regulations that have arrived from Brussels.

Q83 Mr Peter Lilley: The NFU, I am told, has responded to your analysis by saying that farmers are motivated to maintain and improve environmental conditions, and a large area of land has been brought into positive environmental management. Are there alternative EU schemes that counterbalance what you are doing there?

George Monbiot: Twelve per cent of the money comes under the heading of Pillar 2, which is the supposedly greening pillar including higher level stewardship, for example. In some places it is true that that money does have positive impacts. They are very limited in scope and the rules insist that they should be very limited in scope. They are very small areas that you can dedicate in many places to HLS.

In other areas, I believe that higher level stewardship is causing more harm than good. For example, there are many places in the uplands where if farmers were not being encouraged to carry on doing what they are doing they might instead be allowing the land to revert to woodland, for example, which would be better for wildlife and would also be better for floods downstream. But instead higher level stewardship by adding extra money to the

money that they are being paid for keeping the land more or less bare and saying, “Do not make it quite as bare but more or less keep it bare” is having the perverse effect of creating greater environmental damage than would otherwise happen under a different regime: either a different subsidy regime or a no-subsidy regime.

Q84 Mr Peter Lilley: You have particularly put the blame, as far as EU regulation is concerned, on them promoting grazing, mowing, burning, draining, canalisation and dredging, but others have also blamed the EU regulation, or at least the British Government’s Environment Agency’s application of those directives and have argued that the green agenda made flooding worse. Perhaps you are arguing both things and others are merely arguing one thing.

George Monbiot: It depends which aspect.

Mr Peter Lilley: If you can interpret my question—

George Monbiot: Yes. I think you are specifically talking about the Somerset Levels and the areas where the water table was deliberately raised by conservationists. Is that correct? Is that the main focus of your interest?

Mr Peter Lilley: I believe so.

George Monbiot: Claims were made by Richard North and by Christopher Booker that raising water levels in part of the Somerset Levels contributed to or indeed caused the floods that took place two years ago. Partly in response to those claims, a report was commissioned by the consortium of Somerset Drainage Boards, which then asked the Centre for Ecology and Hydrology to look into this. They discovered that the total impact of those schemes was a 0.6% contribution to floods of that magnitude, which they describe as a very small effect. It is an effect but it is in effect negligible.

I am more concerned about the impact of these policies, including in some cases a perverse effect of higher level stewardship right across the watershed and the way in which they prevent the regeneration of woodland and other deep vegetation, which would help to hold back flood waters.

Q85 Mr Peter Lilley: On the issue of dredging, you have said that rivers take 2% of the water; what happens to the other 98%?

George Monbiot: It is in the soil if the soil is there. If the soil is not compacted it is hopefully being held back on the flood plain. In most places some of the farmland does flood.

Q86 Mr Peter Lilley: But presumably it leaves the flooded land?

George Monbiot: It slowly leaves. The whole idea is about speed. All that water is eventually going to end up in the sea; a very small portion will evaporate but the great majority will end up in the sea. It is a question of the speed with which it goes down towards the sea. The key aim here is to desynchronise the flood peaks. So you have loads of small streams draining into your river. If all that water is coming down into the river at

the same time it is going to create this wall of water, which is then exceedingly dangerous for the people downstream.

If you can desynchronise those floods with different interventions along those streams, you are much less likely to have those dangerous flood peaks hitting your towns and villages. That means allowing those streams to respond differently but also all of them in their different ways to hold back and slow that water.

Now the dredging of those small streams—which Liz Truss wants to deregulate, which in my view is a refined form of madness—speeds the water down into the river and is much more likely to give you your high, fast flood peaks, which is where the danger lies.

Q87 Mr Peter Lilley: Why then have people traditionally dredged rivers and even required the riparian owners to dredge rivers?

George Monbiot: The primary purpose of dredging in this country has always been drainage and navigation. Those have been the two primary purposes. We have latched on to dredging as being a solution to flooding. In many cases we have done so irrationally. There are a few very specific circumstances where it is going to make sense, but they tend to be limited in scope and dredging has a whole lot of issues, which can make the situations much worse for people. It destabilises banks, especially when you are removing the trees growing along the banks, which you often have to do when you are creating revetments for your dredging, and that can mean that the soil then collapses into the river, causing much more silt in the river than there was before. The river then tries to find its level and it cuts back, it cuts forward, it undermines bridges, undermines weirs, can create a lot of problems downstream. Far more sensible is to stop the silt reaching the rivers in the first place.

Silt is simply what we call soil when it is in the water. When it is soil and on the land it is a good thing, when it is silt and in the river it is a bad thing, so let us keep that soil on the land. In the Somerset Levels, one of the key interventions has to stop this great flow of soil down the hills into the rivers, which I witnessed myself when I went there. At the height of the floods two years ago I could see the soil being washed down these vertically ploughed maize fields, straight into this great lake, which had been created out of the Somerset Levels. At the same time, there were great calls for the dredging of that silt.

In some places, maybe in the Somerset Levels, that had become necessary but to do that without preventing the flow of soil down the hills is like trying to bail out the bath when the tap is still running.

Q88 Mr Peter Lilley: One final question about this per cent, and I found in my life that 50% of the occasions that people used “per cent” I cannot understand what they are talking about. You said 2% goes down the rivers but 100% eventually goes down the rivers so what is the 2% of?

George Monbiot: At any one time a river, and I am not saying it is precisely 2% in all cases, but at any one time a river is going to be carrying a very small amount of the water that is hitting the whole catchment. That capacity, you might be able to increase it a tiny bit by dredging. It might be 2%, maybe you could raise it to 3%, but you are not going to make a major contribution to flood storage by those means. A major contribution to flood

storage is going to be on the flood plain and we must do everything we can through hydraulic roughness, through bunds, through various issues like that, to hold it back where we can safely do so, reconnecting the river to the flood plain so that that water is then released slowly—at its rate of 2% of all the water in the catchment or whatever it might be—by little increments down the river rather than in a great rush.

Q89 Mary Creagh: I just want to ask a supplementary about the environmental stewardship schemes, both entry and higher level schemes. The objectives of these schemes include specifically flood management. One of the things for which farmers can get points at entry level area is trees. Woodland is encouraged. Are you saying that Natural England, when they are going round with their forms totting up the points, are failing to enforce the flood management part of that scheme?

George Monbiot: No, not at all. You are quite right, those features definitely exist but the aggregate effect in many of the uplands is to keep sheep on the land when there would not otherwise be sheep on the land. Sheep on the land seems to have a link to flooding downstream. There are certain catchments—and I am not looking at this as a generalised issue—where I feel it would be appropriate to have the re-wooding of those lands rather than what higher level stewardship delivers, which is a few little tiny pockets of trees and woodland but basically maintaining the continued farmed landscape.

Q90 Mary Creagh: But you also said that soil comes off the land because of traditional farming practices associated with arable. So you are saying sheep on the uplands potentially leads to flooding, maize on the Somerset Levels leads to flooding. How do we know which one causes which? Is it just from your observations or has there been any scientific connection? I mean apart from you going out walking.

George Monbiot: We can look, for instance, at the Pontbren study in Mid Wales. Again, it was just on a small scale so we have to use computer models to look at what the bigger effects might be. The scientists from Imperial College and the Centre for Ecology and Hydrology who studied that said that if the rewooding of the hills in the catchment took place across the catchment, you would likely reduce your flood peaks by 36%. The reason for that was that they found that the infiltration rate on sheep pasture was extremely low; the infiltration rate under woodland was 67 times higher. Of course, that water will eventually come out of the soil, but again it is a question of slowing it down.

Q91 Mary Creagh: So there is data available? Because at the beginning you were saying there is not a lot of data and the hydrologists only tend to measure the flow of the river between concrete walls in cities, but obviously you are saying the Centre for Ecology and Hydrology has done—is it just this one small-scale analysis or are there any other analyses? You said there is a big data gap. Is that one little bit of data that we have and the rest is a big gap?

George Monbiot: That is one of a very few studies and we need a lot more.

Mary Creagh: Okay, thank you. That is helpful.

Q92 Chair: Thank you very much. Can I ask—as I think we are drawing to a close—a final question then? We have talked about a number of different measures. What further

measures to manage the landscape and to manage the future increased risk of flooding do you think the Government or other authorities should be looking at?

George Monbiot: There has been some success with woody dams in rivers, allowing woody debris to accumulate in parts of rivers. The Belford scheme, the Loddington scheme, the Holnicote scheme in Exmoor, all seem to have had some significant success in slowing down the flow of water. All those need maintenance, but there is a way of doing it without maintenance and which eventually costs nothing whatsoever and appears to be far more effective, which is the reintroduction of beavers. This might sound like an eccentric proposal to put before the Committee, but I was recently looking at the Mid Devon beaver trial where just one pair of beavers had created 13 dams and were holding back, I believe, 8,000 litres of water and had greatly changed the hydrology of the small stream on which they were working. Of course, beavers can build their dams in the wrong places, which can cause floods, but it turns out that if you start them off by building a little wicker dam, they will then build their next dam around that. You can direct them and they beaver away extremely effectively doing the work that we would otherwise have to do. There is now some very interesting work coming out of the University of Exeter, Richard Brazier et al, showing that beavers can have a significant impact in attenuating flood flows downstream.

Q93 Chair: Can beavers live successfully across the country or are there certain habitats where they would not be able to be introduced?

George Monbiot: They need a bit of woodland and they do all sorts of interesting things with that woodland that tend to increase the hydraulic roughness of the flood plain, but as long as they have woods they can live anywhere in Britain, and they did. There are plenty of place names that still record their prior existence here.

Q94 Geraint Davies: The general strategy, whether it is beavers or whether it is human intervention, is for greater upstream storage through damming, be it through beavers or otherwise. By implication, with more global warming and all the rest of it, we will have much larger amounts of storage over much bigger areas of land above towns and that is how we should plan ahead. Is that what you are saying?

George Monbiot: I would summarise it as slowing the flow. That means not just storage but it means slowing the flow off the hills in the first place and often reed beds, wood cover, all sorts of gully reforestation, for instance, can do that, all the things that incidentally are, in effect, banned as permanent ineligible features under the common agricultural policy. You slow it coming off the hills in the first place, then slow down the rivers through allowing them to meander, to braid, to form islands. Trees growing on those islands are also extremely useful. They dump a lot of their load that way. You slow down the flood peak and then as the water comes down towards the flood plain holding back as much of that water as possible on the fields. It is all a question of staggering the release of water.

Q95 Geraint Davies: A lot of this could be done irrespective of the EU, couldn't it? Then, separate from that, you are proposing we should make specific representations for changing EU law to make it more flexible and in keeping with nature?

George Monbiot: It costs you a lot more to do it if you are having to fight the EU regulations at the same time because farmers are having to forgo money they would otherwise receive if they are to implement some of these natural flood management measures. We are having to spend money twice, once on paying them to keep the land bare and then on paying them to put back some of the features that they have just been told to remove.

Chair: Thank you very much indeed. Mary, you wanted to come in.

Q96 Mary Creagh: I just had one very quick follow-up on the beavers. What do the anglers make of the beavers? I do not know what beavers eat because I do not know much about them. Presumably, they eat a ton of fish. The second thing is if you are reintroducing a species and it is a male/female pair, what do you do to stop the offspring then mating with each other? So, what happens next?

George Monbiot: The first thing is beavers are entirely herbivorous. C. S. Lewis has a lot to answer for because his beavers in Narnia eat fish, but elsewhere, out of Narnia, on this earth, they eat only vegetation. They create habitats for a whole load of other species, including fish. I have been having a few rows with the Angling Trust about this because in my view quite perversely they seem to be against beavers, whereas in many other parts of the world anglers love beavers because they create the pools where trout get a lot bigger, where the salmon breed, they create the riffle sections where the gravel lies, where the redds are that the fish make their nests in. There is a whole series of ways in which beavers improve the fishing, so that argument I think will continue for a while.

You raise an important and pertinent question. There has to be a minimum population size if that size is going to be viable. In fact, there is a programme down in Devon being run by Derek Gow to try to bring as much genetic diversity into Britain's beavers as possible to make sure that they will be able to survive here in the long run as a result of that.

Chair: Devon is, as always, leading the way, as I always like to point out. Mr Monbiot, thank you very much indeed. We are very grateful for your time. Apologies again that we were late starting, I am afraid, but we found it extremely interesting, so thank you very much.

George Monbiot: Many thanks.

Examination of Witnesses

Witnesses: **Sir James Bevan**, Chief Executive, Environment Agency, and **John Curtin**, acting Executive Director, Flood and Coastal Risk Management, Environment Agency, gave evidence.

Q97 Chair: This is the second session of this afternoon. Before we come on to the gentlemen who are before us, I have a short statement to read.

The next witness was due to be Dr Richard North. Since the Committee issued its invitation to Dr North, the Committee has had drawn to its attention allegations of offensive

remarks previously made online by Dr North. Under the circumstances, the Committee has decided on balance not to go ahead with the evidence session today, but we have said we would be prepared to consider written evidence from Dr North.

We will move on to what was meant to be our third but is now our second panel. Good afternoon and thank you very much indeed for coming. We have before us from the Environment Agency Sir James Bevan, Chief Executive, and John Curtin, acting Executive Director of Flood and Coastal Risk Management. Am I right in both respects?

Sir James Bevan: You are.

Chair: We are grateful for your presence this afternoon and thank you very much indeed. We will move straight on to the questions if we may.

I want to first make reference to comments by Professor Dieter Helm. Professor Helm says there is a recognisable pattern in the response to flooding crises. There is immediate help, then a review, and then, as he put it, sticking plasters are then applied. I want to ask if you recognise that description, Sir James.

Sir James Bevan: It does not feel like that, Chairman, to me. I have only been Chief Executive for eight weeks or so, but my sense is, first, if you talk to people who went through the December flood—and I have done, I have been up to all the areas and talked to householders, to businesses—the first thing that everybody says is that this is different, that something different and big has happened and that we need to reflect on what that means.

I think the second thing I would say is that it feels that, certainly within the Environment Agency and across Government and in local authorities and talking to MPs and others in local communities, there is a general recognition that we need to step back and reflect on what those extreme weather events mean for the way that we manage flood risk in future. We now have a process going forward. Oliver Letwin is leading a national flood resilience review, which I am sure you will want to talk about, which is designed specifically to think big and long term about the consequences of what looks like more extreme weather over the next several decades.

John Curtin: Yes, I would agree with Sir James. The cycle of reviews is we have a long strategic plan for flood risk and have done for a number of years and when that meets events, you do reflect and see whether that is still the right plan. I think that is a perfectly valid approach.

Q98 Chair: I suppose the point that Professor Helm makes is that there does not seem to be much long-term planning, it is very reactive rather than proactive.

Sir James Bevan: I think there is already a series of long-term plans. The Environment Agency developed in 2009 and refreshed in 2014 its long-term investment scenarios. They look forward from now until 2065 at the flood risks that we are likely to face over the coming decades, factoring in what we know about climate change and seeking to ask what that means in terms of how we manage that flood risk. That is a pretty strategic and long-term approach. We have a six-year investment programme designed to improve flood protection for 300,000 houses over the next four to five years. That is putting a lot of

money over an agreed fairly lengthy period into investment in new flood defences and, as you know, the Government has committed that it will also protect in real terms the money that we spend over the next four years in terms of maintaining our flood defences. From my background in Government, that is quite a long-term commitment and I think that is very helpful in terms of our strategic planning.

Q99 Chair: You mentioned Somerset and there is a partnership model that is being developed in response to the Somerset Levels floods. Do you see that as a model for longer-term flood resilience that could work elsewhere?

Sir James Bevan: Yes, I do. One of the things that I am keen to do and that I know the Secretary of State, Liz Truss, is keen to do is empower local communities to make local choices about how they manage their flood risk. These are the people who have to live with that risk and I think they need to have a major say in elaborating how we deal with it. You will find, for example, as I did in December, that there are many communities who do not want a very high flood wall running through their village. They live in that village because it is beautiful and they do not want it despoiled. They need to be empowered to make those choices and to manage the risk in the way that they think is appropriate with advice and support from the Environment Agency and other stakeholders. Certainly, at that community level we need to have a real partnership and I think we need to have a partnership at the catchment level, too. The Somerset Rivers Authority that you refer to, which came out of those terrible floods of 2013-14, seems to me a very good way for all the people with an interest in managing flood risk in Somerset to come together so that the whole is greater than the sum of the parts.

Q100 Chair: That could work elsewhere, though. That is what I am trying to get at. That is not a model that is unique for whatever reason to Somerset?

Sir James Bevan: It could work elsewhere and we are very keen on the part of the Environment Agency, as I know is Liz Truss, the Secretary of State, to empower other local flood-risk management organisations—internal drainage boards, for example—who want to take on those responsibilities to do that.

Q101 Chair: Thank you. Do you want to add anything, Mr Curtin?

John Curtin: This is a perfect example of how you try to blend the national strategic view of flood risk you heard earlier with local choices. Sometimes local choices need to come with money as well, so it is that blend of national and local.

Q102 Mr Peter Lilley: You mentioned the Government's national flood resilience review. Could you tell us what sort of input you are expecting to put into it, first of all?

Sir James Bevan: Sure. It is going to look essentially at three things. First, do we have the modelling right? That is an important question. If we are moving into an era of much more extreme weather, is our past data about rainfall and the conclusions that we draw when we try to predict how much rain is going to fall and what effect that will have on rivers still valid? Job one is to assess the modelling in the light of the new circumstances we are in.

Job two is to look at what the prospects of more extreme weather will mean for national infrastructure. I think we did a pretty good job in December in protecting bits of important

infrastructure but not a perfect job, so we need to think about what more we need to do to protect the things that matter to communities, like substations, telephone exchanges, those kinds of things.

Thirdly, it is going to look at what this picture of more extreme weather over several decades should mean for the way in which we manage the risk to communities of flooding, which will include long-term investment decisions. I sit on Oliver Letwin's panel. My colleagues in the Environment Agency are also providing input, as is obviously the Secretary of State for the Environment. We are pleased to be engaged in that and we think it is a very useful exercise.

Q103 Mr Peter Lilley: How will the review differ from the previous reviews that Dieter Helm spoke about, which would seem to be a regular feature whenever there is a flood?

Sir James Bevan: I do not have experience of previous reviews, so I cannot really comment on those. It feels to me like a genuine and serious attempt to think deeply and long term about the consequences for our country of climate change and changing weather patterns. The fact that we are taking our time about it, the fact that a large bunch of stakeholders from around Government are contributing, the fact that the review will want to issue a call for evidence from others I think is evidence of seriousness to do this in an intellectually robust way. Certainly, I am interested in practical outcomes, but I think it is right that we step back and take a serious look at what conclusions we draw from December before we make those decisions.

Q104 Mr Peter Lilley: Is there one change you would like to see or your agency would like to see in the way the Government deals with flooding policy at a strategic level?

Sir James Bevan: If I may, there are two changes that I would put on the table. The first one is that we stop thinking about flood defence purely in terms of building walls. As George Monbiot was saying, if we are going to be successful in future about managing flood risk, we need to think about much more upstream solutions of the kind that George was talking about that slow the flow and keep water on hills and make rivers bring it back to communities slower. We do need to think about the hard flood defences and we may need different kinds of hard flood defences in future. We also need to think about resilience after a flood because there is no such thing as 100% flood protection. What more can we do to help businesses and householders be more resilient? That would be one. I think we just need to think bigger and more holistically about flood risk.

The second thing I would like to see is recognition that managing flood risk is not just the responsibility of the Environment Agency or the British Government, it is the responsibility of everybody. I would like to encourage individuals, businesses, local authorities, all people who can be potentially affected by floods, to understand their flood risk and to own it, and to work with them to help them manage it. I think if we do this together, we are going to be much more successful than if we try to do it on our own.

Q105 Mr Peter Lilley: Will you publish the Worsfold review, which was commissioned after the 2013-14 floods?

Sir James Bevan: I do not know the status of that. I do not know whether John does.

John Curtin: The Worsfold review was an HMT/DEFRA study, so it is their report to publish or not. As part of the recent spending review settlement, there was the protection of the maintenance fund with a 10% efficiency and a lot of the work inside the Worsfold review is what we will embrace to find that 10% efficiency in our maintenance programme.

Q106 Mary Creagh: Have you seen the Worsfold review?

John Curtin: Yes, we have looked at it.

Q107 Mary Creagh: Are you at liberty to tell us what it said you needed in annual revenue costs to run your £20 billion of assets?

John Curtin: Say that again, sorry?

Mary Creagh: What number did Mark Worsfold give you that you need to run your £20 billion of flood asset management?

John Curtin: The report generally talked about different approaches to asset management. It also talked about a spectrum of costs, which I think you will have to approach HMT and DEFRA on, but I do not think we are far off the mark there from what we are spending. It was more about how we can be more efficient in the projects we manage, bringing in experience from the water companies, and that is the sort of approach we will be embracing in the maintenance programme going forward.

Q108 Mary Creagh: Sorry, I just want to carry on with this. Could you give us an example of one change in efficiency that you are going to embrace as a result of that review?

John Curtin: One example: we started a programme called creating asset management capacity, which the review encouraged. This includes how we use IT to better inform our inspection of assets, detection of their deterioration, and then pushing our investment into bringing them back to their standard.

Q109 Mary Creagh: That is something that the water companies do and that you did not do or is—

John Curtin: An approach, no, it is an evolution. One of the areas especially on our approach to maintaining assets is the National Audit Office's review. Its value for money review, reporting in 2014, found we had very sound approaches to asset management and value for money. This is refining what we do already.

Mary Creagh: Thank you. Thanks, Chair.

Q110 Mr Peter Lilley: Your deputy chief executive, David Rooke, told the EFRA Committee that the agency still needed to look at the historic data it was using to see if it was still valid. What evidence will you use to assess whether recent weather events are significantly different from those in the past?

Sir James Bevan: As David said, we do use historic data to project into the future. Obviously, the question in the light of the extreme weather we saw in December is

whether and to what extent that historic data will still give us the right predictions. There is a question about the data we use. There is also a question about the modelling we use once we have worked out what the right data is. Those are issues that are being addressed in the review that Oliver Letwin is currently carrying out.

Q111 Mr Peter Lilley: When we had the Climate Change Committee people before us, they initially said that they were certain that there was a trend in rainfall and that recent events were extreme. When shown the monthly rainfall data from the Met Office over the last 150 years, they agreed there was no significant trend and, although it is on the high side, it was not exceptional in December or anything else. Do you look at data or do you just, like them, make up things as you go along?

Sir James Bevan: We try not to make up things as we go along and we are very data driven. Again, in the first few weeks of my tenure I have seen some fantastic use of data by the Environment Agency; for example, in using that data to model very accurately what the effect of very heavy rainfall on the Cumbrian Hills would be, to predict very well how serious the flooding would be that would result and to issue warnings before that flooding took place in order to save lives and protect property. We are very data driven, but the point of your question, Mr Lilley, is absolutely right. If we are very data driven, we have to have the right data and we have to have the right models to draw the right conclusions.

Q112 Chair: Before I bring in Mr Davies for the next scheduled question, as it were, can I just go back to something, Sir James, you said a little while ago? You were talking about the necessity for local people to be included: to ensure that they are stakeholders in any plans. Do you not get communicated to you frustration from local people that they are trying to give their advice—sometimes from many generations of knowledge of the way the land works and the way the river catchment works—but they say, “No one is listening to us”? I have to say that is my experience in North Devon. Many people have said, “We have known how to manage these rivers for 50, 100, 150 years and now we are not being listened to anymore”.

Sir James Bevan: Well, if people feel that they are not being listened to, then we are failing in our duty. I have been very clear with our area managers—we are divided across England into 16 areas led by area managers—that their primary duty is building relationships with MPs, with local authorities, with local communities, in order to shape and collectively deliver outcomes, not just in terms of flood defence but biodiversity, regulating industry, all the things that we do. I have been impressed in the two months I have been chief executive at the amount of investment that is going into those relationships. We can always do more and if people do not feel they are being listened to, then I would like to know about that and we will address it.

Chair: I should say in all fairness I have noticed and residents tell me they have noticed a significant improvement in the last three or four months, such that your regional team are coming to see me and other residents locally as well. It is something, nonetheless, that has been brought up in the past.

Sir James Bevan: Yes.

Q113 Geraint Davies: Can I ask one quick question on data? Does the Environment Agency's data confirm and support the idea that we are having wetter winters and dryer summers and a gradual increase in the intensity of flash flooding and rainfall?

John Curtin: Underlying rainfall data is the world of the Met Office and the national resilience review will bring the Met Office and their scientists into that analysis. We do run river networks. There has been a period of more flooding in the last 20 years on some of those records, and the recent flood you saw in December 2015 broke records in 194 of our river gauges. Whether we sit now and analyse a general trend, no, we have not sat and done that work, but we are breaking records nearly every year in this area.

Q114 Mr Peter Lilley: That is in river flow?

John Curtin: River flow, and it is down to the Met Office to analyse rainfall and rainfall trends.

Q115 Geraint Davies: I know Peter brought forth some data that showed that the overall amount of rainfall may not have changed, but my interest is in when it is falling and with what intensity, which is what causes the floods.

John Curtin: Yes, and I think that is a fundamental part of the national resilience review that the Met Office will lead.

Q116 Geraint Davies: There have been some outspoken points made by Professor Dieter Helm about how the Environment Agency should be broken up and just focused on flooding. It was partly a response I think from your comments at the EFRA Committee, Sir James, where you said every one of your 10,000 staff is clear that the top priority is the protection of lives and property. I was just wondering how you could balance that statement with your other requirements in terms of being an environmental regulator or whether that was a statement that perhaps you now regret.

Sir James Bevan: No, I think one of the questions I was answering was which comes first, people or wildlife, and my answer is that if we are talking about protection of human life and property, that will always be a first priority for us. I also think that the choice between people and wildlife is a false choice, that what is good for people is good for wildlife, and our job in the Environment Agency is to build a better place for both people and wildlife. I have seen many examples already of where we have done both of those things together.

Just to give you one example, in Hemel Hempstead we have a project with the local community to improve the River Bulbourne, which is an old chalk stream that the Victorians turned into a straight drain and it became unattractive. What we are doing with a local community group is reintroducing the traditional sinuosity of that chalk stream. That has done three things. First, it has improved the biodiversity of that stream. It is a better place for wildlife to live in. Secondly, it has improved the place for humans because it is now a nice place to walk. Thirdly, because it is slowing the flow of the water, it is also reducing the flood risk to properties in that area.

My approach is always going to be let's look for wins across the whole area and whatever we do, whether it is flood risk management, regulating industry or our work on water, land and biodiversity, that it should benefit both people and wildlife.

Q117 Geraint Davies: I can see there is a harmony between environmental management and flood risk management, but I suppose the question would be: where does management of industrial effluent and so on fit into that? If everybody all of a sudden were to simply focus on flood risk management, then obviously they would not be looking at pollution.

Sir James Bevan: Of course. I think what you want when there is a national crisis—December was a national crisis, and we had more than 20,000 properties flooded. I have seen the damage that that does emotionally and economically as well as physically. I think it was right that I directed that everybody who was available in the agency focused on helping communities that were in distress and helping those communities recover.

Q118 Geraint Davies: So I am clear on this, you actually closed down industrial regulation for the period of flooding?

Sir James Bevan: No, we did not do that. What we did was invite volunteers from across the whole of the Environment Agency to come and help with what was going on, first in Cumbria and then in Yorkshire and Lancashire. That enabled us to put many more people on the ground to provide much quicker and much more comprehensive help, before flooding took place, while it was going on and in the recovery phase afterwards, than we would have been able to do if we had simply drawn on those people who are permanently doing flood risk management in the Environment Agency. That was a temporary measure during what I say was a national crisis. During December we never stopped doing our other work on regulated industry and on water, land and biodiversity. We just took some people off those two areas. Now, as we move back into a normal business as usual, those people will go back to those areas. We still have targets for the year, which we have not changed and which we want to meet in respect of all of those areas in which we work.

Q119 Geraint Davies: In response to Dieter Helm, who seems to be saying if you can push everyone into flood risk management, therefore, you are not doing the other job properly, you seem to be saying if we did what he is saying, which is to chop up the Environment Agency and get rid of that facility, you could not have that flexible rostering where you refocus limited extra resources into flood risk emergency times?

Sir James Bevan: Yes.

Geraint Davies: You would not agree it should be chopped up into separate parts?

Sir James Bevan: I think it is good to have the debate. I do not think any organisation is perfect and all good organisations are continually asking whether they are set up right, so I think it is good to have the debate. There are some good arguments for the way the Environment Agency is currently set up. One is the one you have just mentioned, Mr Davies, which is that you have a larger pool of people who are available when there is a flood crisis than you would have if you were simply a dedicated flood agency. Another is that most flood crises also have effects on biodiversity and can affect regulated industry. When, for example, an oil refinery floods there are environmental consequences and you need people who know how to deal with that so that you can have an integrated operation. A third argument for the way that we are set up is that if you are going to reform an organisation there will be a transaction cost. There will be disruption. I am focused and the

agency is focused on doing what we can to deliver better flood defence for the people of this country; better regulation of industry; and better water, land and biodiversity. If you go for a wholesale structural reorganisation then there will be some disruption to that but it is a debate that I think is good to have.

Q120 Geraint Davies: Finally, do you think we should go in the opposite direction? I mentioned to Dieter Helm that in Wales, as it happens, the Countryside Commission for Wales, the Forestry Commission and the Environment Agency were to be brought together. Obviously it is a small country, and it has been cut apart from the Environment Agency, which is a shame in my view, but in England do you think there is a case for bringing together all these other things in the Environment Agency—doing the opposite?

Sir James Bevan: I think there is a case, which the Secretary of State, Liz Truss, is promoting and which I support, for making sure that everybody who acts on the environment, including in relation to flood risk management, acts together. So already I work very closely with Natural England and with other parts of the DEFRA family and as I have already said with other local stakeholders, local authorities, MPs, business, local communities. So I am all for a more joined-up approach. I do not think you need to reengineer organograms to achieve that. It is all about will.

Q121 Mary Creagh: Can I preface my remarks by asking you to pass on a huge thank you to your staff who worked so hard in West Yorkshire during the Boxing Day and Christmas floods this year? I am a West Yorkshire MP, and there were Wales floods and floods in many other parts, so I am sure the whole Committee would want you to pass that on. I also thank staff who helped with the flood defences that were built in Wakefield after the 2007 floods because obviously the 1,000 homes that flooded eight years ago were protected during all recent events. It was not without its wrinkles but it is pretty much there.

I am assuming that both of you have read the Pitt Report, which was written after the 2007 floods. Would I be right?

Sir James Bevan: I have read the summary. I am not going to claim I have read it all.

Q122 Mary Creagh: Okay. I have read most of it and the key part of that was that flood-defence spending should rise every year by more than inflation. I did some analysis of what the cuts to the flood defence budget meant in 2010-11 and obviously we had the Comprehensive Spending Review 2013, which added in extra bits. The Committee on Climate Change, in evidence to this Committee, suggested that the Government's capital and revenue deficit over the last five years is around £200 million short. Is that a figure that you are aware of or that you recognise?

Sir James Bevan: First, thank you for what you said about our staff. I do think they deserve credit. It was inspiring to see how many people gave up their own Christmases to go north and help families in distress, including in your constituency.

On the resource issue we did our own modelling—the long-term investment scenarios, which were updated and published in 2014. That had a figure for optimal investment in flood defence over the next several years. If you put together the money that the Government is contributing for the next four or five years, the £2.3 billion, and the investment that other partners are going to contribute—we are keen to have more

partnership investment but I think we are on track for the money that we need to complete our five-year programme—and the maintenance spending that has been locked in for the next four years, you are at around the figure that was identified in the long-term investment scenarios as the figure that you need to do the right sort of investment. Everyone would always like more money but I think we have a good settlement out of the Spending Review and our focus now is on making sure that every pound of that is well spent to ensure that people have better flood defence.

Q123 Mary Creagh: So you are saying that partnership funding is making up the shortfall over the last five years. Of course most of that partnership funding is coming from other public bodies, most notably county councils and city councils, is it not?

Sir James Bevan: Quite a lot of it is. I am conscious that many local authorities have their own budgetary challenges because I have talked to them and heard that, which is why I think we need to draw the net more widely. So for example businesses, water companies; many of them already contribute to some of our flood defence schemes. I would like to see more of them contributing more to those flood defence schemes. Often it is in their interest to do so. We have several examples of where we are going ahead with investment with a contribution from a water company, which is partly because it is a reputational issue for them to contribute but it is also because many of our flood defence investments are protecting the water companies' own assets—a sewage plant for example. So I think there is incentive for others beyond local authorities to contribute and one of the things I am keen to do is to widen the net of potential financial partners not just because it gives you a bigger pot of money but because it seems to me that schemes that are designed by a big collective of all those who have an interest are more likely to be better schemes than schemes that are just designed by an individual organisation.

Q124 Mary Creagh: So, according to a PQ answer, only £65 million of, I think, the £300 million was coming from the private sector. It was probably a PQ answer that you might have drafted the answer to, I don't know. So you would like to see the private sector putting its hand more firmly in its pocket and taking it out very firmly?

Sir James Bevan: Yes, and others. I don't think it is just about business. I think there are a lot of people who have an interest in managing flood risk and all of them—

Q125 Mary Creagh: Can you give examples?

Sir James Bevan: The Lottery, and there are European sources of funding.

Q126 Mary Creagh: What is the European source?

Mr Peter Lilley: The British taxpayer.

Mary Creagh: It is a circular economy, isn't it? So which EU funds? Do you know?

Sir James Bevan: I don't know the particular funds off the top of my head but especially for areas where we are moving into catchment management we have already talked, or the previous speaker talked, about how investment on farming subsidies and so on may be able to move towards flooding. That may be one area that we can examine, especially through the National Flood Resilience Review.

Q127 Mary Creagh: Are there any examples of Lottery funding? Is it a Heritage thing?

Sir James Bevan: We do have some example of Lottery funding. There is one I saw recently, a programme in Leeds where there is some Lottery funding. We will need to write to you with the details.

Mary Creagh: Could you?

Sir James Bevan: It is not as I understand it primarily focused on flood defence. It is focused on improving the environment for people. But as I was saying, you can have multiple effects if you design the project right. My big point is we will do better not just financially but in terms of delivering the right outcomes if we widen the circle of people with whom we work in terms of constructing flood defence.

Q128 Mary Creagh: We heard from Professor Helm, who said that the pay-as-you-go funding model from the Treasury, which is the status quo as we have at the moment, leads to inefficiency and poor decision making. He says that EA should borrow to invest and that payment on delivery should happen to taxpayers through a levy on water bills. What do you think of that idea?

Sir James Bevan: I think we have a good deal of certainty and planning predictability from what we currently have, which is certainty for the lifetime of this Parliament, both in terms of investment for new defences and money to maintain existing defences. That is a relatively new experience for me in Government and so I like that predictability. It is up to us now to make sure we deliver on it. The question of whether it should be done in an entirely different way is, I think, something for the Government rather than for me to comment on.

Q129 Mary Creagh: Finally, on water companies. I know of at least one water company that would like to be more involved in management of assets but obviously that would involve a transfer, a slice of EA's £20 billion-worth of assets, so that it becomes an asset on which they can borrow and think they can make money out of. What do you think about that?

Sir James Bevan: I have already begun to meet the chief executives of most of the water companies because I think they are key players in everything we have been talking about, not just flood risk management but regulating industry and creating better environments. I have found that many of those chief executives are very interested in what more they can do with us to improve outcomes in all of those areas. I don't want to hold on to £20 billion-worth of assets for the sake of it if there are people who can operate those assets more effectively so that together we can get a better effect for the public. I am perfectly open to a transfer of those assets provided we can be satisfied that we will at least maintain and preferably improve the effect that we have in terms of flood risk management.

Chair: I think Geraint wants to jump in.

Q130 Geraint Davies: Just quickly. You were here, I think, for the evidence given by George Monbiot. Do you have any comments first about the restrictions in EU law in

terms of land-use management and, secondly, what did you think about the opportunities for more proactive land-use management to restrict the cost of downstream flood defences, were you were involved with that and, indeed, was there was any relationship with the water companies?

Sir James Bevan: I agree with quite a lot of what I heard Mr Monbiot say, including the concept of rewilding. In certain places, that can have a very benign effect in terms of how you manage flood risk as well as creating a better environment for people and wildlife. On EU law I have already met a perception that EU law in some areas is constraining in a negative sense what we need to do in the Environment Agency. I have to say I have not felt that yet. When we were dealing with the floods crisis in December, which is what I spent December focused on, not once did anybody say the words “EU”. We were doing what we were doing in order to protect people and property because that was the right thing to do. We were not constrained by any EU legislation. Nor have I found—for example in the case of dredging, which I am for where it makes a difference in terms of reducing flood risk and where it is value for money—that EU law prevents us doing that. We have to dredge in ways that are consistent with the law, including EU law, but that is about how and when we dredge and not about the principle of dredging.

Q131 Geraint Davies: I don’t want to caricature your role here but to a certain extent is the Environment Agency not basically putting up a lot of hard defences for future flood risk that is caused by predictable climate change or maybe inadvertently bad land-use management, and isn’t there a case that he was making that if we managed the land better upstream and we had the legislation to allow to do that, you would not have to put up so many defences?

Sir James Bevan: He is certainly right that if the Environment Agency can see its only role in flood defence is building concrete structures it will fail because as I was saying earlier if we are going to successfully manage flood risk in future, it is going to involve a catchment-wide approach enlisting all of the people in that catchment who have a stake in protecting themselves and their property against flood risk so I am absolutely for a catchment-wide approach. Building hard defences is only one part, an important part, of what we should be doing in future.

Q132 Geraint Davies: Are you already doing the sorts of things he said we should be doing?

Sir James Bevan: We are. This has already been happening but we are certainly encouraging it to happen more, and more energetically. We are actively encouraging our leaders in the areas where they operate to think catchment-wide. Indeed the very geographical areas we use as our organising principle are based on catchments. We are encouraging them to work with all of the stakeholders in that catchment, upstream as well as downstream where the flood risk is, to pull together coalitions of people who can manage that whole catchment in a way that will better reduce the flood risk to all the people living in it.

John Curtin: Can I add a couple of points? I think some of the work that is happening in DEFRA on their strategy, which is now far stronger across all the resources of DEFRA focused on certain outcomes such as making sure we have better protection against

flooding, brings together all of the organisations from DEFRA focused on the same sort of targets as well, which I think helps.

It is a subtle thing, it is a bit of a mouthful, but my job title is Director of Flood and Coastal Risk Management, not Director of Flood Defence. This is about the overall management of that. We need to do more, as you have heard, and I think the review will point to that. But it will be a mosaic across a catchment of all these different things. It will not be, though, an “or”—you can’t talk to communities about growing some trees over 30 years, but until then live with this risk—it will be a combination of all of these elements.

Q133 Chair: Can I be clear? Just talking about the EU briefly again, I want to make sure I understand. When residents say to me, “We are not allowed to dredge anymore because the EU tells us we can’t” that is not correct?

Sir James Bevan: That is not correct. We do dredge. As I said, I am for it and we do it already. We spent £21 million on dredging in the last two years. This year we are going to be dredging in 175 different locations. We do that where it makes a big difference to reduce flood risk and where it is value for money. Sometimes those things are true; sometimes they are not. We will not do it if it will increase flood risk to somebody else downstream, which sometimes it can, but it is absolutely part of our armoury of approaches.

Q134 Chair: So a decision to dredge or not to dredge is based on the cost and most importantly the effectiveness and whether it will succeed in resisting flooding?

Sir James Bevan: Yes.

Q135 Chair: It is not based on a rule that has been set for us.

Sir James Bevan: It is not based on what the Water Framework Directive or the Habitats Directive or Birds Directive says.

Chair: Thank you.

Q136 Mr Peter Lilley: You do not have to maintain wetlands for birds?

Sir James Bevan: The main reason we maintain wetlands is because it is a good thing to do. We want to protect those wetlands because they create a better environment for everybody and in some cases they also help manage flood risk. There are legal requirements to maintain wetlands, some of which derive from EU law and some of which derive from domestic legislation, but the main reason I am interested in protecting those wetlands is not because the law tells me to do it but because I think it is in our national interest to maintain those wetlands.

Q137 Mr Peter Lilley: Yes, but we can’t rely on your goodwill persisting forever but we do know about the law and that is what we are really asking about, what the law says. There seems to be some uncertainty about what the law says.

Sir James Bevan: No. In terms of the specific answer about dredging, neither UK domestic nor EU law prohibits us from dredging. There are measures in UK and EU

legislation that require us to have regard to wildlife, rightly so, and that means that in an area where we have decided that we want to dredge, how we do that and sometimes when we do it we need to adjust in order to comply with the law, which we believe in doing. But it does not prevent us from dredging. If we are not dredging full stop, it is because we have concluded that it is not having the effect that we want, or that it is not value for money. It is not because there is an EU law in the way.

Q138 Chair: Nonetheless, following on from what you say, it could be perceived, could it not, therefore, that in certain circumstances we are saying it is more important to protect a wetland bird than it is to protect a village from flooding?

Sir James Bevan: As I said, my view is that I do not want to have to make that choice, because I think that wildlife and people are both important and that what is good for one is good for the other. But if there is that direct choice, then we will always choose to protect people and property.

Q139 Mary Creagh: The Committee on Climate Change last year did a progress report and said that DEFRA should amend the Water Act to make conditional the automatic right to connect new development to public sewers. The Government said, “We have made changes to planning policy, and we think that these changes will reduce the pull on the public sewer”. Do you agree?

Sir James Bevan: Do you have anything on that?

John Curtin: I do not, I am afraid, no.

Q140 Mary Creagh: Because it did not happen in Wakefield when a big home development came in and we had to have a new sewer put in and close the roads for nine months. Given that that took place, just anecdotally, and given that we want sustainable urban drainage, my question is: what is the blockage, if you will forgive the pun?

Sir James Bevan: I apologise that I am only fairly new in this job, so I do not have a good answer for you. Can I reflect on that and write to you?

Q141 Mary Creagh: Yes, that would be great. What about this Resilience Review that you are having an input into? Will you be pushing for changes in building regulations and mandatory sustainable development? Because it is something we tried to do when we were in Government before 2010, and it has not happened. Is the sewage overflow a big part of what happens when people’s homes flood?

Sir James Bevan: Yes, I have seen it. In terms of your question, I think it needs to be an evidence-based review, so the first thing we need to do is collect the evidence. What is the evidence about our rainfall data and river levels? What does that tell us about the adequacy or otherwise of our modelling? What is the evidence about what is happening to our assets? There were clearly some important infrastructural assets that did go out during the December flooding, so what does that tell us about the resilience of our infrastructure? What do we know about the resilience of ordinary households?

One thing we know is where individuals have taken responsibility and put in their own flood protection, provided it has been done right and in the right circumstances, it can

make a huge difference. I saw that in a community that I visited in December. I walked down a street of houses directly opposite a flood defence that had been overwhelmed during the floods. In one house there was a woman in tears shipping out most of her ruined belongings because she had had a metre of water in the house. Literally next door was a woman who had, after the previous flood, put in a lot of property-level protection. She had raised the electrics, she had had the floor sealed, and she had bungs for the lavatories to stop sewage coming up, and her house was almost completely dry. I have seen the effect you can have if you have the right property level protection, and I think a key part of the review will be to think about, not just the big picture of what we do in terms of hard flood defences but what we can do to help facilitate more local and more personal protection against flooding.

Q142 Mary Creagh: Obviously a key part of the Resilience Review is the infrastructure. Obviously you have the River Foss—you had your Foss flood defences where the electrics failed. I wonder if you could say something about that, because it is of great interest to people in York, but also in Leeds city. If that happened on a normal working week, we had the railway out north to Bradford, so there would have been 30,000 people trapped in that city. We had the electricity almost out, which would have cut off power to 50,000 homes. And we could, I think, have lost mobile phone coverage, which would have massively hindered the emergency response. None of these things happened because it was Boxing Day and we were lucky, but the worst-case scenario was not that far away in Leeds, was it?

Sir James Bevan: No, it was not. I have visited Leeds twice—once in December on Boxing Day and afterwards, and then I went back in January to see how reconstruction was going—and York, the Foss Barrier. On the Foss Barrier, the first thing to say is that I am very conscious that many people had their houses flooded in York. I have seen the damage and talked to some of those people. It did not happen because the Environment Agency opened the Foss Barrier, it happened because the Foss was running at record levels, and whether the barrier was open or closed, I am afraid those houses would have been flooded.

The decision that our people made after the electrics failed on the Foss Barrier, which was to open the barrier in order to allow water from the Foss to escape into the Ouse, was the right decision and probably prevented another 1,000 plus houses from flooding. We ask a lot of our local teams. We ask them to make difficult decisions at a moment's notice. They know that their top priority is to protect life, and we trust them. They are professional, they are experienced, and when they make the decision we back them, and I think they did make the right decision. It was a difficult decision, but they made the right one.

That said, we need to know what went wrong. It is not acceptable that we had a failure on a really important piece of infrastructure, even though the River Foss was at record levels. So we are conducting an investigation into that, and once that is complete I am sure we want to share the results. We are talking to local people in York in the Foss area about what we are doing and about what happened.

On the broader infrastructure question, you are right, I think we were lucky. There were some things that we managed to protect. Some bits of infrastructure and some substations would have gone out during that flooding had not the Environment Agency, the emergency services and the army been active in protecting them, so we had some success

in staving off a worse situation. But we did have infrastructure failures, we did have some people without power, we did have some telephony issues, and we had some issues with the police airwave, which is something you never want to have. We need to make sure that we reduce those risks in future, and that is going to be a key part of what the Letwin Review is looking at.

John Curtin: Can I bring out that on the six-year programme, of course the main target is protecting 300,000 homes, but that is likely to bring about £5 billion-worth of benefits to infrastructure, commerce and industry as well?

Q143 Chair: Over what period of time?

John Curtin: Over a six-year period, the £2.3 billion.

Q144 Mr Peter Lilley: Will it be an improvement of £6 billion-worth of property, or will it bring £6 billion-worth of benefit?

John Curtin: That will £5 billion-worth of benefits to infrastructure, as well as the 300,000 homes that we are protecting.

Q145 Margaret Greenwood: Could you describe the way in which you work with organisations that build and maintain our infrastructure to ensure flood resilience? Maybe some examples of the sorts of things you do.

Sir James Bevan: Sorry, could repeat the start of the question?

Margaret Greenwood: Yes. Could you give me some examples of the way in which you work with organisations that build and maintain our infrastructure to ensure flood resilience?

Sir James Bevan: Okay. On a planning basis, if we are planning a new piece of flood defence we would normally be talking to the water companies and to others who are responsible for different bits of infrastructure to ask whether they can help us design, and sometimes where they can help us fund, this piece of infrastructure. As I was saying earlier, there are some good examples of where other people who are responsible for infrastructure have come in with us to help build flood defences. On a tactical crisis level, I was impressed in December by the way in which the energy companies and the water companies were all working on the ground with the Gold commander, the police, the Environment Agency and the local authorities in one team to make sure that we did all we could to protect infrastructure. That is good, but as I was saying, if you are still having failures on your infrastructure you are clearly not where you need to be. I think part of the conversation we are going to need to have as we go through this Resilience Review is not just about what the British Government and the Environment Agency can do to protect infrastructure, but what the other main owners and providers of infrastructure can do, either by themselves or with us, to protect that infrastructure better.

Q146 Margaret Greenwood: Thank you. Last year the Committee on Climate Change identified ports, airports and digital infrastructure industries where resilience does

need to improve. Are you working with them, and what are you doing with them to improve that?

Sir James Bevan: Do you want answer that?

John Curtin: Yes. On a scheme-by-scheme basis, if they fall within the development of a flood risk scheme, then we will do. We will write to you with the exact number, but there are a number of airports that will benefit from that six-year capital programme as well. I do not have the exact number in front of me, but I can—

Q147 Margaret Greenwood: Thank you. Is Gatwick one of those airports?

John Curtin: I will have to get back to you.

Q148 Geraint Davies: Can I simply ask this? The Committee on Climate Change identified potential systemic risks from individual infrastructure planning decisions that were being made in isolation. I wonder what input you have, and I presume you have input in all these infrastructure investments. Do you feel generally infrastructure investments are being made in a sustainable way and with best value in mind?

Sir James Bevan: Yes. We have a good dialogue with the main infrastructure builders and providers. The water companies would be a good example of that. They, under the current arrangements with Ofwat, have to produce regular asset management plans for the infrastructure that they are putting in, and they consult us on that. That is a good opportunity to work with them to identify ways in which we can, through them, have assets built that will be beneficial in terms of protecting infrastructure and managing flood risk.

Q149 Geraint Davies: Obviously a lot of infrastructure, including power stations, is built on the coast, and obviously urban development is on rivers, as well. With climate change, do you see a big escalation in unforeseen costs to protect infrastructure? We have heard today examples where electricity is knocked out when apparently it was not expected.

Sir James Bevan: We certainly do need to think about whether, and to what extent, climate change is going to drive both greater risks to national infrastructure and the greater costs associated with those risks. That is the process that we have just begun in Oliver Letwin's Resilience Review. The other thing I would say is that at the ground level we are obviously consulted on planning applications. Planning authorities have a statutory duty to consult us on planning applications in areas where there is a flood risk and we spend a lot of time and effort in commenting on those applications in order to ensure that we do not expose individuals or the nation to flood risks that are not necessary.

Q150 Geraint Davies: Finally, do you think some infrastructure investment in things like roads and railways should be done to provide extra flood protection, as opposed to being resilient in their own right? For instance, in Wales the North Wales railway line is a flood protection, and the M4 relief road is potentially supposed to provide a flood protection.

Sir James Bevan: Yes. I think it always good if we can achieve more than one effect with a piece of infrastructure. Like you, I have already seen examples of railways or roads that, apart from being transport links, are also performing an important flood defence role.

Q151 Geraint Davies: Are you involved in any systematic approach towards new infrastructure that builds in sustainable development and gets the best value from joining the dots?

Sir James Bevan: Yes. A good example would be HS2. I was visiting our team who deal with HS2. We are trying to make sure that the way HS2 goes forward is not just environmentally sustainable, but also has benefits for the things we have been talking about, including flood risk. One of the ways we are trying to do that, one innovative way, is to try to use the spoil that is going to be excavated. Huge amounts of earth are going to have to be removed to build HS2, and rather than just dump that somewhere the idea is to move that earth to places where we can use it to construct flood defences somewhere else in the country. We get, as it were, free earth, and the people constructing HS2 get rid of their spoil. I think that is a good example of a win/win approach.

Q152 Margaret Greenwood: Do you agree with the Committee on Climate Change that you should publish an assessment of the impact of all new development on long-term flood risk, and should this include small developments for which you are not currently required to provide advice?

Sir James Bevan: I think we should certainly continue to engage very actively in advising on planning applications, both for small developments and big developments. There is a National Planning Policy that, as you know, is that there should not be development in areas of flood risk, but that where there is development proposed in an area of flood risk, it has to be safe, it has to be essential, and it has to avoid threatening other bits of the nation with enhanced flood risk. So we are very actively engaged; we comment on thousands of applications every year. We are very transparent about that. Every year we publish a list online of every planning application to which we have made an objection. If you go online you will see that there is a list of over 3,000 applications to which we objected, and we stipulate why we have objected. I think we need to continue to be engaged, and we need to continue to be transparent, and we need to continue to object, as we normally will do, to significant developments in an area of high flood risk.

Q153 Margaret Greenwood: Would you agree with the Government data showing in 2013 and 2014 that 7% of new homes are being built on areas of high flood risk? Does that indicate that planning policy is being applied effectively?

Sir James Bevan: I do not recognise the figure. What I can tell you is that in the vast majority of cases where we object to or recommend against development in an area of flood risk, the planning authority accepts that recommendation and that development as proposed does not go forward. There is one statistic I might share with you, because I think it is quite a powerful one—this is for the four years between April 2011 and March 2015—during that period 99.1% of new homes had planning decisions that were in line with our advice. I was surprised and pleased to see that figure. I think that suggests that people are listening to what we say.

Q154 Margaret Greenwood: Thank you. And finally, when Professor Dieter Helm appeared before the Committee last week he was dismissive of the 7% figure because he was more concerned to ensure planning advice consequences for the whole catchment, not just for

the houses being built. Are you able to assure us that the EA's advice does account for the whole catchment rather than the individual homes?

Sir James Bevan: Yes, and I think that is one argument for having an Environment Agency, that of course you need to have local ownership and local decisions, but somebody needs to have regard to the effect of that decision on the wider catchment. So when we do comment on planning applications we will always have regard to the broader consequences. One of our operating principles is: do no harm. We would not want ourselves to intervene, or others to intervene, if that was causing greater flood risk elsewhere from the place in which we were active.

Q155 Chair: Can we seek some clarification on the figures that we have just been discussing? The question that was asked, correct me if I am wrong, was a quote of the Government figure that 7% of new homes had been built in areas of high flood risk. In your answer you referred to a figure of 99.1% of planning applications that have been granted along the lines of your advice. We are sort of comparing apples and pears there, are we not?

John Curtin: I think sometimes our advice could be that you raise the floors by a metre; so you could still build it. Or you will have seen houses where the garage is down below and the living is above. There are large parts in the centre of London that are in the flood plain where you cannot freeze building, so our advice could be about how you mitigate the flood risks when you build.

Q156 Chair: My point was: could the 7% of homes figure and the 99.1% of planning applications figure be one and the same thing?

Sir James Bevan: As I say, I do not recognise the 7% figure, but they could certainly be consistent. As John says, a lot of the dialogue that we have with planning authorities is not a yes or a no, it is, "We do not feel comfortable about this, but if you were to do X or Y, like raise the height of the development or put in measures that would reduce the flood risk, we would feel comfortable about it". It is an iterative process. The fact that 99.1% of new homes have planning decisions along in line with our advice does not necessarily mean that 99.1% of new homes were not built in flood risk areas. It means that if they built in flood risk areas they were in line with the advice that we had given about how to mitigate that risk.

Q157 Chair: I know Geraint wants to come in, but just before he does, can I check: I think we advertised that we would probably aim to finish at about 4.00 pm. We have already gone past that, but we are finding this extremely interesting and helpful. Are you gentlemen okay if we carry on a little bit longer?

Sir James Bevan: We are at your disposal.

Chair: I am grateful. Thank you very much indeed. Geraint Davies.

Q158 Geraint Davies: Clearly you are advisory, and while people listen to your advice, you do not have the trump card. Do you think you should be able to overrule local authorities who want to pursue developments that clearly are increasing flood risk against your advice?

Sir James Bevan: No, I do not. You need a national framework, you need a national policy on planning, and we have one, which I have described, which is that preferably there should not be development in areas of flood risk, but if there is it should follow certain conditions. You need that strategic overview, but then I think local planning authorities, who are themselves fully accountable to local people and who understand the needs of the local community, should be allowed to make decisions in the light of that framework. There is, of course, the safety check of the Secretary of State. DCLG has the power to pull in an application if it is in relation to a major development where the Environment Agency has objected on the grounds of flood risk and we have not, in our conversations with the local planning authority, been able to come to a mutually agreeable outcome. In those cases that issue would be referred to the Secretary of State, and he or she has the power to decide whether to call in that application for a decision or whether to let it go forward. I think that is the right balance between a national policy, and local democratic accountability, and decisions that fit for local people.

Q159 Geraint Davies: If proposals were made for homes with high levels of resilience, so that there were garages underneath, no one lived on the first floor, and there were raised plugs, and plastic, and all the rest of it, would that be sufficient for you if the local authority came along and said, “We are going to build these houses, but do not worry. We expect them to flood, but they will be alright once they have wiped them down”?

Sir James Bevan: It would depend. Every case is different, and we look at each case on a case-by-case basis. I think realistically you will never be in a situation where there is no new building on flood-risk areas, because about 10% of England is at high flood risk. So the issue is how you mitigate that risk, not can you prevent it, because you cannot. Each case is different. Each case would need different mitigation to assure us and local people that it was being managed in the right way. Our position is not, “There should be no development at all in an area of flood risk”. Our position is, “If there is going to be development, then it needs to be carefully done in a way that minimises that risk, not just for the people who live there, but to other people who may be affected by it”.

Chair: Thank you. I think we are going to do two final questions. Mary Creagh.

Q160 Mary Creagh: Thank you. DEFRA told the Public Accounts Committee last week that a third of lead local flood authorities do not have in place a flood resilience strategy, which seems extraordinarily high. I certainly hope Wakefield is not one of them. In fact, I am certain that Wakefield has a flood resilience strategy. What role do you play in encouraging them to do so?

Sir James Bevan: We have a dialogue with lead local flood authorities. I think the Minister Rory Stewart has written to all of them to encourage them to produce those plans. Is there anything you want to say about the details of that?

John Curtin: No. One of the elements more broadly than this is that lead local flood authorities have been on a journey since the Pitt Review, as you know. One of the key roles the agency has played is trying to help on the skills. This is related to that so, for instance, we set up a foundation degree that took A-level students into a flood risk management degree process to help upskill our workforce, probably 10 years ago now. Nowadays that is 50/50 with local authority graduates and our own graduates. There is

advice on how they do it, but also helping on the skill base that can be used by local authorities, as well as you.

Q161 Mary Creagh: That is great. I seem to remember when I was shadowing DEFRA that it was about half. Would you say that the number is coming down, or would you say it is constantly a third? I am just talking from memory of these lead local authorities.

John Curtin: How many with plans that are—

Mary Creagh: Yes, how many do not have a plan? Because I remember thinking three or four years ago, “This is outrageous that they do not have this”.

John Curtin: I think this is the first set of plans on the back of the EU directive, so this is their first pass at the types of plans that we are talking about.

Q162 Mary Creagh: It is a different plan to the ones that they use to have before, is it?

John Curtin: Yes.

Q163 Mary Creagh: How are they different?

John Curtin: I will have to come back to you on the detail of the difference, but I think this is that set that we are doing as part of the EU directive. As I say, the Minister has written to those that have not to try to impress on them to complete them.

Q164 Mary Creagh: Do the local authorities heed your advice? You talk about the capacity; is it the small ones that struggle with this?

Sir James Bevan: I think it is a capacity issue, not a will issue. I think everybody understands, particularly after December, the importance of planning and preparedness. I have been much struck, going around the country and talking to local authorities, that there are very big discrepancies in terms of size, and capacity, and funding. I do not get the impression that any of those local authorities does not want to do this; it is just a matter of capacity and their ability to prioritise. As John says, I regard it as our job to help them, particularly those local authorities who might need a bit more capacity to help them develop a plan that will work.

Q165 Mary Creagh: When they come in do you give them a red, amber or green rating, like, “This is not up to snuff”, or, “That is absolutely fine”? Or how does it work internally?

John Curtin: I have not been involved in this process, so we might have to return to you on some of the detail of this. But it is very much supportive, and advice, and, as I said, on skills.

Q166 Mary Creagh: When do you think you are going to publish these plans?

John Curtin: That will be for the lead local flood authority to publish.

Mary Creagh: Okay, fine. That is great. We would like to know when that is going to happen, so we will find that out. Thank you.

Q167 Chair: Thank you very much. Can I draw things together, if I may, and go back to the title of our inquiry, which is “Flooding: Cooperation across Government”? Our basic question is this: do you think there is enough of it? By which I mean co-operation, not flooding? Do you think there is enough of it, and if not, what more can the Government do to try to improve that?

Sir James Bevan: I think—I have been impressed in my short time here. I have experienced a crisis, and certainly in the crisis it was striking how well collaboration worked across Government. Sitting in Cobra every day you had the Environment Agency, every major bit of Government, and you had the military. You had us hardwired into real-time conversations with the Gold commander in the areas that were being affected talking about what they needed and taking decisions around the table to help deliver the things that they needed. So I was impressed. I have seen quite a lot of Cobras in my last 10 to 20 years, and it was the most impressive integrated operation that I have yet seen. But I do think outside of crisis, if we are going to develop and deliver these long-term, catchment-base strategic solutions there is going to need to be even more joining up. Not just, or even primarily, within central government, but between all the various sectors that are going to have to deliver this, the Environment Agency, central Government, local authorities, local communities, businesses, farmers and individuals. That is easy to say, but it is going to be difficult to do.

Q168 Chair: It is. Is that simply a matter of better communication? Is it something as simple as that, or does there have to be more strategic thinking?

Sir James Bevan: I think it is both. I think, as we began this conversation, we need to think strategically about our response to what looks like more extreme weather. That is happening. I think that there are very local decisions that need to be made. Does community X want different flood defence? If so, what kind? Who is going to pay for it? How can we design it together so that it meets the needs of that community? Then somewhere in the middle between those very local decisions and national decisions you need decisions about how you manage the whole catchment that is affecting the region. There, the Secretary of State, Liz Truss, is very keen—and I agree on this—on a catchment-based approach to managing, not just flood risk, but the environment, and doing that in a way that reflects one single plan for the catchment, drawn up by all the actors who are affected by that catchment, and implemented by all those actors who are affected by the catchment. There is a key role for my agency to play in helping to shape and deliver that plan.

Q169 Chair: Mr Curtin, a thought from you?

John Curtin: The only thing for me to add is I think this is a real strength of the Environment Agency. We can be that common thread across national Government, national strategy, down to local partnerships and local response. I think this country does well on the back of having that strategic blended with local, as we talked about earlier.

Chair: Okay. Thank you. We are very grateful indeed for your time and for overrunning as well. I think I speak for the Committee when I say we found this a most informative, and interesting, and very useful session for us, so thank you very much indeed, Mr Curtin and Sir James. Thank you. With that I will suspend the sitting.