

Environment, Food and Rural Affairs Committee

Oral evidence: Coastal Flooding and Adaption to Climate Change, HC 2079

Tuesday 4 June 2019

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[Watch the meeting](#)

Members present: Neil Parish (Chair); Alan Brown; John Grogan; Kerry McCarthy; Mrs Sheryll Murray.

Questions 1-88

Witnesses

I: Innes Thomson, Chief Executive, Association of Drainage Authorities (ADA); Terry Fuller, Chief Executive, The Chartered Institution of Water and Environmental Management (CIWEM); Aiden Kerr, Director of Operations, Flood Re.

II: Dr Mhari Barnes, National Flood Management and Access Policy Adviser, National Farmers' Union (NFU); Helen Mann, Consultancy Manager in the South West, The National Trust; Julian Whittle, Business Engagement Manager, Cumbria Chamber of Commerce.

Written evidence from witnesses:

- Association of Drainage Authorities
- [Chartered Institution of Water and Environmental Management](#)
- [Flood Re](#)
- [National Farmers' Union](#)
- [National Trust](#)

Examination of witnesses

Witnesses: Innes Thomson, Terry Fuller and Aiden Kerr.

Q1 Chair: Good afternoon, gentlemen. Welcome to our session on coastal flooding and the impacts. Would you like to introduce yourselves across the panel, please, and we will get stuck in? We are very pleased to see you.

Innes Thomson: Chair, good afternoon. My name is Innes Thomson and I am the chief executive of the Association of Drainage Authorities, or ADA. We are very proud to represent the wider industry and all that concerns drainage, water level and flood risk management.

Terry Fuller: Good afternoon, ladies and gentlemen. My name is Terry Fuller. I am the chief executive of the Chartered Institution of Water and Environmental Management. Included within our membership, there are over 2,500 professionals who specialise around flood risk management. Hopefully, I can represent their experience this afternoon.

Aiden Kerr: Good afternoon. I am Aiden Kerr. I am the director of operations for Flood Re, a joint Government and insurance-industry body, which is driven towards providing affordable and available flood insurance and transitioning to a market without Flood Re, where affordable and available flood insurance becomes commonplace in the UK home insurance market.

Q2 Chair: What impact have you seen from coastal erosion and flooding? What are the biggest risks for the future? I think I am going to bung that one at Innes to start with and make him earn his keep, and then please open up.

Innes Thomson: Chair, thank you very much indeed. It is a very apt question. What impacts have I seen from coastal flooding and coastal erosion? I will refer back to 2013 and the events of that particular year. I really can say, with all honesty, that we had a very near miss on that occasion. One of the things that impacted me most was the lack of resilience of our coastal defence structures. The ones that held held well, but the ones that did not—the ones that breached or had a material failure—were the ones that we really must address going forward. Fortunately, in all the breaches that we had, there was no direct line of fire of people behind those particular breaches. Had there been, and knowing what even a very modest flow speed of water can do to injure or harm people, we could have had a far worse situation on our hands.

Q3 Chair: Could I just interrupt you there? Of those breaches that happened and those weak spots that are around our coast, how much of that has been seriously repaired and how much of it is left to do? I know it is quite a wide question but where would you put it, roughly speaking?



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Innes Thomson: In all fairness, Chair, I cannot quantify that, but there are serious concerns that still remain. There will be defences around the country that need quite a bit of attention to them. There are now much more simplified ways of examining those defences, whereas, in the past, it was rather complex. I am very sure that the Environment Agency, through their asset management systems, are acutely aware that they need to look more closely at these defences.

Q4 **Mrs Murray:** In parts of my constituency—and I am sure it happens elsewhere—some of the problems are with porous walls as well, where the water will get in and undermine, and exacerbate a situation. How much evidence is there that this is a situation that is experienced in a lot of places?

Innes Thomson: Again, that will depend largely on the historic construction of the defences. From a purely technical point of view, there is also a weakness where you change from one kind of structure to another. If you have, for example, an earth embankment and you then put a concrete sluice through it, it can be an Achilles heel within these structures. Again, I have personally seen occasions where there have been cases of water seeping in these situations around the interface between these structures. I know that it is an area that people need to keep a very close eye on.

There is one other area that I will mention that is always a danger and that we need to keep a very close eye on: vermin. If you have animals that burrow into embankments, that is a particularly dangerous situation when there is a risk to people's lives behind.

Q5 **Chair:** Bringing Terry and Aiden in now, when we have had the Environment Agency in—and we will have them in again, I suspect—one of the things that I am particularly interested in is having a proper survey done and knowing exactly not only the extent to which coastal erosion is happening but which particular areas are at particular risk. Where I farm in Somerset, in what is called the Pawlett Hams, some of those banks are only probably three or four feet wide, when they should be 10 or 12 feet wide. To what extent do we need to know what is going on and to what extent do we know what is going on? Perhaps I will bung that one at you, Terry?

Terry Fuller: Like Innes, I will not attempt to quantify that here and now, but the Environment Agency does have a built-in knowledge of its assets and the condition of those assets. That information is largely available and known. I would say, in terms of risk, it is the rapidity, the speed and the dramatic nature of that risk on the coastline, where we have a hold-the-line defence and where that defence may be in a vulnerable condition.

I have first-hand experience of working on sea defences along the Kent coast, just in front of the Romney Marsh. As you can appreciate, it is very low-lying land relative to mean sea level. I have witnessed what happens



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in storm events when a defence starts to unravel, and it is very difficult to deal with in a reactive way. The failure can be potentially quite dramatic. For me, it is about, as you say, Neil, being on top of what that condition is and having a planned programme to make sure defences are maintained appropriately.

- Q6 **Chair:** In some places, it might be expensive structures. In other places, as I have been talking about, it is earth banks. They are not that expensive to repair but they have to be repaired. What worries me slightly with some of the Environment Agency's plans is that, if they are planning to retreat from the sea, they must tell us. What they must not do is just allow the banks and the sea defences to fall into disrepair. I am just a little bit suspicious that that could be the case. Without putting words in your mouth, to what extent are you confident that the Environment Agency knows where the potential breaches are?

Terry Fuller: In my experience, the Environment Agency takes its responsibilities very seriously. There is a local management and local knowledge of the defence systems and drainage systems that we are talking about. That responsibility is taken seriously, although we should remember that, in this country, we operate under permissive powers, so there is no obligation necessarily. However, I have never experienced that manifesting itself in any lack of responsibility and accountability for the condition of defences.

- Q7 **Mrs Murray:** Just very quickly, following on from that, I understand that some authorities will sometimes say, "We will allow this area of coastline to be eroded" in order to invest in protections for another one, because selectivity has to happen where you are perhaps protecting properties. Do you think that this is a good way of going ahead and doing that?

Terry Fuller: There is a balance that has to be struck. There have been very good examples of where the coastal defence system has been allowed to retreat in a managed scenario. Part of that is in order to create habitat, which, under the directive, then enables a hold-the-line policy to be upheld elsewhere. As part of a broader view on coastal defences, that can be extremely helpful, if done appropriately. There are some very good examples in the country where that has been done extremely well. The key to it is bringing communities along with the change that results from that.

- Q8 **Chair:** Aiden, I will bring you in with a second question that I have here, but just before, we will finish this one. Innes, again, without leading the witnesses, one can understand that the priority must be to protect property and people, but there should also, in my view, be some sort of priority to also defend very valuable agricultural land that grows lots of vegetables. Some of our best land in the country is alluvial soil in these flood plains. Do you think that the Environment Agency, Defra and Government are taking this seriously enough or not?



Innes Thomson: If I may, I will respond by saying that ADA's view on this is that we take the wider view of the social aspects, the economic aspects and the environmental aspects as a kind of pyramid combination. They are all indissociable. I will use an example, if I may, which is in the East Riding of Yorkshire. If, for example, you had a combination of tidal flooding and fluvial flooding from the River Hull, you are cutting a complete section of the community off from another section of that same community. Therefore, you are creating economic strife, which means that businesses, people's lives and potentially the environment are all under fire. It is an example of where you have to think collectively. Coming back on a point that Terry raised, very importantly, communities have to have a clear say and a clear part in any of the decisions that are being made here.

Q9 **Chair:** It is a big picture, basically; that is what you are saying.

Innes Thomson: Yes.

Q10 **Chair:** Aiden, how much do you currently pay out in insurance claims every year of coastal flooding? Do you have any idea what you are going to project up to 2039? That is quite a big question but I would imagine you have some rough idea about what you are paying out at the moment. I suppose it depends on the seas, the year and how much flooding we have had.

Aiden Kerr: We have been operating at Flood Re for three years now. At the point we are at, halfway through this third year—the two-and-a-half-year point—whereas we expected to have paid out thousands of claims, the number of claims we have paid out is more in the hundreds. That is because we have had a period of particularly dry weather. What we have in the Flood Re portfolio are some 55,000 policies that are located in areas that are at risk of coastal flooding, according to the Environment Agency's maps. A key thing about Flood Re is that we have a statutory purpose to transition to risk-reflective pricing by 2039. In order for that to happen, one of the key parts of that is to reduce flood risk to the point where it is managed in such a way that the insurance market will provide affordable cover.

Q11 **Chair:** Yes, the commercial market will pick it up.

Aiden Kerr: Exactly right. It will price the risk, but the risk is managed such that that price is done at an affordable level. In order to do that, we see three key strands: reducing the cost when flooding does happen; having a more effective market, which is about the information that is shared out there; and the most pertinent point in this discussion, which is reducing the risk. That is why the work that the Environment Agency has recently published is really important, looking for a long-term average of in excess of £1 billion per year. Clearly, on the coast, that is critical. With climate change predicting sea-level rises, a key part of Flood Re achieving its transition purpose is for that risk to be managed, taking into account



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climate change and taking the Environment Agency's advice very seriously. That goes to both capital and to maintaining those defences.

- Q12 **Chair:** To what extent are you able to feed that into the Environment Agency? It is important that you have a view on what they are doing, and surely you need to be proactive, so to what extent can you feed into Defra and the Environment Agency?

Aiden Kerr: We are in discussions with the Environment Agency on a constant basis. We recently did some work with one of the major model vendors, which demonstrated the huge benefits of both building and maintaining flood defences. That is very much in line with the Environment Agency's own work, but in doing this—and it is a key point that we will be putting in to our response to its consultation on flood and coastal erosion risk management at the moment—we hope to provide Flood Re's view, to make the case for investment in flood defences.

- Q13 **Chair:** Just as a slightly wider question, when we have done inquiries into general flooding, not just coastal flooding, we have found that one of the problems—and it is not your fault; it is the way Flood Re is set up—is that it does not cover businesses. It is judged on whether or not you pay business rates. If you run a guesthouse or whatever, it is sometimes quite marginal as to where you fall in this, and it probably is from a business rate point of view as well. Have you any thoughts about how businesses can get insurance in these flood-prone areas? If you are going to have a community again, you need to have some businesses to go along with it. I suspect, from your point of view, you probably do not want to necessarily venture there, but have you given it any thought?

Aiden Kerr: We know, for example, that the British Insurance Brokers' Association has developed a scheme focusing on small businesses that are at risk of flooding. When Flood Re was first being developed between the ABI and Government, there was a significant body of evidence to say that, for the household insurance market, there is likely to be quite a significant market failure, where whole swathes of the country might not be able to afford home insurance. That same body of evidence did not exist for small and medium-sized enterprises and, by extension, for leasehold blocks, because the commercial market was much more bespoke and could tailor their solutions to those customers much more easily than in the home insurance market. We are going through our process for our first five-year review and we are currently not looking to change the scope of Flood Re.

- Q14 **Chair:** The situation with flooding is always the same. When we do not flood, the pressure comes off. We had people in here from Cumbria and elsewhere, when we were looking at flooding in 2013. One lady ran a guesthouse and she was finding it almost impossible to get insurance at that time, although she probably has since. I understand there is a levy on all insurance payers to make sure that Flood Re has the money, so you have to be careful who pays that levy, but especially in terms of some of the smaller businesses, that is where I am a bit concerned that



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they cannot get insurance. At the moment, you do not see any failure, if you get my meaning, because there is not the same pressure. Insurance companies get a bit braver, dare I say it, when it is not flooding. It is taking away the umbrella when it starts to rain; perhaps that is a very good analogy in this circumstance. Do you see where I am coming from?

Aiden Kerr: I do, but we would like to think insurers take a longer-term view than that. You are absolutely right.

Chair: Perhaps I am being a little unkind.

Aiden Kerr: When there is less flooding happening, there is clearly less focus on this as an issue, but there are other parts of the market that supply insurance to small businesses, which also helps to make the problem smaller. This problem does exist for some small businesses but it does not exist on the same scale as for households, because it is altogether more broker-led, and a broker can work with that commercial customer to understand their specific needs in a much more personal way than happens to home insurance.

Q15 **Chair:** It is where your home is also your business. That is where the whole thing becomes a very grey area. If you have a factory, you are probably going to move your factory or put all your electric points and everything up as high as possible and let the water wash in and out, if it is going to. If it is your home as well, it is more difficult.

Aiden Kerr: Yes, and we do understand that there are always difficulties when you draw a boundary between what is eligible and what is not eligible. If you have a property that has a council tax band and you happen to run a business from that same property, to the extent that you have a domestic home insurance policy on that building, it is eligible for Flood Re. We do accept that, whenever you draw any kinds of lines between what is eligible and what is not eligible, there will always be grey areas and difficulties.

Q16 **Chair:** Terry, do you want to add anything to that or not?

Terry Fuller: This compartmentalising of different assets at risk, whether it be in thinking about or insurance or funding, is perhaps not helpful and something we need to look at going forward. We quite quickly undervalue the benefits in the coastal zone in the way that we currently measure them. The outcome measures and the hierarchy that that encourages focus very much around domestic property, which is a significant driver. Critical infrastructure and the wider impacts of coastal flooding are not so well appreciated.

Q17 **Chair:** The income generated around those properties and businesses is not taken into consideration enough. Is that your view?

Terry Fuller: That is my view, yes, very much so.

Chair: That is interesting. We will record that.

Q18 **Mrs Murray:** Just as a supplementary on the Flood Re proposals and



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criteria, what happens for someone who perhaps lives in a property above their business? They have the commercial insurance policy that takes into account public liability and all that sort of thing, but then they have their home contents insured separately. How do you cross the boundaries then, between a domestic policy and a commercial policy?

Aiden Kerr: It can be difficult but to the extent that somebody owns the contents that they are insuring, their contents policy would be covered by Flood Re. If it is a domestic contents policy, it is covered by Flood Re.

Q19 **Mrs Murray:** What if it is up some steps? The entrance to their property is on the ground floor but it is covered under their commercial insurance, because then they would not be.

Aiden Kerr: A good example here is farms, where you have a portion of the policy that is to do with the commercial buildings and equipment, but there is a portion to do with the farmhouse as well. To the extent that the insurer is able to split the domestic part of that—and that has a council-tax band—from the commercial part of that, it would be eligible for Flood Re. Where you can identify a part of it that is a domestic-contents or domestic-buildings policy, it is eligible to be ceded to Flood Re.

Q20 **Mrs Murray:** I know that a lot of businesses in many towns throughout my constituency have been affected by flooding. Can you explain why it is difficult to provide a specific scheme for commercial businesses? They can be as affected, and it affects employment, for instance. Can you explain why they are not able to seek some assistance?

Aiden Kerr: First of all, the British Insurance Brokers' Association have a scheme for businesses exactly like those in your constituency. The second point is scale. The scale of domestic properties out there without a Flood Re scheme and who would find themselves without affordable insurance being available was such that setting up what is quite a complicated and big scheme was a valid thing to have done. Even though there are pockets around the country where SMEs do struggle, the national scale just was not there.

The third element comes down to the mechanism of Flood Re, where we have premiums based on council tax bands. Somebody in a Band A property will pay a lower amount than somebody in a Band H property. You cannot make that same application as easily to small businesses based on, for example, rateable value, because you might have businesses with a completely different set of requirements for business interruption as for stock. It is difficult to make that premium decision based on the size of the business.

Furthermore, you also have the issue with businesses cross-subsidising each other, which is not such a big problem when you have domestic insurance being cross-subsidised. There are those elements that make it more difficult to apply a Flood Re-type scheme to small businesses, but we believe that, though the work that BIBA have done to provide an SME scheme, there are some solutions out there for SMEs.



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Q21 Mrs Murray: Are we getting the balance right between defending the coast and accepting the need to adapt to rising sea levels and erosion? I visited the States a couple of years ago and I saw how the sea level was rising. We also saw land sinking and coastal erosion. Sometimes it is a dual action. Do you think we are getting the balance right between defending and accepting, as I have already mentioned, the fact that we will just leave some to naturally erode over time?

Chair: We will bring Innes in and then Terry, because we do not want him being too quiet.

Innes Thomson: Are we getting the balance right? I am going to perhaps come back to you and say it depends on where you are in the country. This will also come down to local engagement and local choices. Coming back to my pyramid of social, economic and environment, those three elements at each of the locations around our country need to be taken full stock of. That will differ whether you are in the far north-west or the deepest south-east. That is the importance of each element around the country, or each section of the coastline around the country, and understanding what is behind that section of coastline. In some cases, you will have particularly high value—and this is where the balance is not right—that is not fully recognised. We have talked about the recognition of business. I am sure you will hear from Dr Barnes later on about the value of agricultural land and whether that is being properly brought to bear in the overall thinking, rather than what, at the moment, might be a slightly narrow definition of what is economically justifiable or not.

Terry Fuller: I would say, overall, no. I would also say that the balance required is changing with sea-level rise and climate change, and with coastal squeeze, where the margins for protection between storms and defended lines are narrowing. That balance is changing and we need to face up to a far more adaptive approach. There are places where we can no longer sustain a hold-the-line policy and we are going to have to look at changing that policy. There are other places where we have identified a different policy to hold-the-line, but we have not faced up to what that means in reality and starting to help communities to adjust to the changes that are required. It is a no from me.

Q22 Mrs Murray: Moving back to you, Aiden, in particular, on Flood Re, your submission talks about improving flood resilience and resistance, and a “build back better” approach. Briefly, what does that mean? To what extent has it been brought in already?

Aiden Kerr: A key part of what we will be submitting to this Secretary of State as part of our first five-year review is “build back better”. What we mean by “build back better” is, when you have a flood plain, rather than just the claim returning a property to its previous state, where possible we can look at what resilience and resistance measures would be appropriate for that particular property. Some work we have done with the University of the West of England shows that resilience and resistance measures are particularly beneficial for properties with a chance of



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flooding higher than one in 40, but it can be beneficial for properties with a much lower chance of flooding than that as well. We see this as one of the levers that Flood Re can help to pull to make properties more resilient.

The second key part of our transition plan is to reduce the cost of flooding when it happens. A key part of that is by putting resilience within properties or, where appropriate, the resistance measures to stop them from getting wet. It can mean the difference between people being out of their property for months and being out of their property for weeks, and it can make a notable difference to the cost.

Q23 Mrs Murray: Does that mean that you would be looking to perhaps install some flood protection to a property that had previously had a claim, like the gates that are fitted outside a door, or maybe raising power sockets?

Aiden Kerr: It is exactly those sorts of measures. This is a key point here: there are certain measures that you can put in place that would not increase the claim cost. Raising power sockets, for example, does not increase costs. You can choose the way you put in plasterboard, so it is horizontal rather than vertical, so that there is less stripping out required. We would very much look to how insurers manage their claims—they are the experts with this—and for them to employ the right experts to understand what the most appropriate measures are for a flooded property. That might be that the depth is so high that resistance measures are just not appropriate, so you want complete resilience measures within the house, or it might be that the expected depth of flooding is so low that resistance measures—for example, floodgates—are the best way of managing the risks to that property. We would look to the experts who manage that claim to put in place the most appropriate measures, but Flood Re's role would be to change what we can pay for and how we define a flood claim, so that we would go beyond just returning it back to its previous state.

Q24 Chair: Do you ever get a slight clash between what you might want to do as insurers to protect a property and the Environment Agency, which sometimes says, "If you start trying to protect too many gardens and the like to keep the water from going into the house, you are then driving that floodwater further down the road"? It does not always happen but there are things. Have you had any problems with that?

Aiden Kerr: It is important to note that, in terms of the measures I am proposing here, we do not have those powers currently. At the moment, we can pay only for a claim to be returned to its previous state. Any decisions taken, either by the Environment Agency at a community level or by a property, need to take into account the impact it has not just on the property or the community itself, but on what impact it might have further downstream or next door. We would need to make sure that the process to develop standards for this kind of work continues to develop, so that when people go into properties to put these measures in place,



they are doing it to a required standard and a generally accepted level of standard to make sure that that sort of effect does not happen.

Q25 **John Grogan:** There is a whole range of local, regional and national bodies involved in coastal management and flood risk. Do they work well together?

Chair: Innes, you can have that one because you have to work with all sorts of authorities across the country.

Innes Thomson: We are all aware that Sir Michael Pitt, back in 2007, banged two heads together because, at that point, we were very much in individual silos. The words I might use are, "Could do better". We have been making a lot of progress, which is very good news, but we could always do that bit better. One of the aims is trying to bring all the various parties together. If you look across Britain, we have all the right skills. I am not necessarily saying we have enough of them but we have the right skills and the right knowledge. There are one or two missing elements in there that are slowly starting to come to the table. One I will make reference to is water companies. In the more recent past, they have been more actively involved in some of the partnership working that has been taking place, which is a very positive step, but we could still do a little bit better in that respect.

I will also perhaps mention that there is still a bit of a disparity amongst all the various Government Departments that have an interest in this, and there could possibly be slightly more cohesion amongst those Departments in terms of a more unified sense of direction.

Terry Fuller: I would generally support that view. We should acknowledge that we have come a really long way over the last 10 years or so, in terms of the Environment Agency's overview powers and the agency becoming more comfortable with what that means; greater awareness, both from the public and the authorities; and plenty of exercises and pilot projects to look at how organisations can work together. We have made some real progress, but of course we could do more.

Aiden Kerr: There are two points. This moves away from coastal flooding, to some extent, but when we think about the number of properties at risk of flooding in the country, surface water flooding outweighs those at risk from coastal and river flooding. That is where it is most difficult to assess the risk of surface water flooding and also where that ownership, accountability and responsibility becomes a bit more blurred. Considering that that is where the majority of properties are at risk of flooding, there is still a greater need for there to be more effective co-ordination between the EA, with the strategic overview, and the local authority, which often has the direct responsibility for managing that risk through drainage systems, for example.



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The other area that Flood Re cares about is the decisions that are taken about developing in areas at risk of flooding, both on the coast and in areas at risk of river flooding or surface water flooding. Where the Environment Agency gives advice on what needs to be put in place, should a development take place, what we need to see within Flood Re—and this is critical for our transition objective—is that that advice is taken fully account of by the local authorities, so that, where the Environment Agency requests a certain set of resilience measures are put in place for a property that is built in an area at risk of flooding, that advice is taken account of. There are still cases where that does not happen.

Q26 John Grogan: Just to follow up on that, is that the area where the co-ordination seems to be weakest? There are all sorts of concepts. There are coastal change management areas, which do not really seem to have taken off, and there does still seem to be inappropriate development in the coastal areas and elsewhere. What could be done to improve that?

Aiden Kerr: Taking the Environment Agency's advice and ensuring that there is a means for that Environment Agency advice to be taken into consideration before any development gets approved. They are statutory consultees but, as you say, it still happens too often that development takes place that is not in line with the advice that they have given.

Q27 John Grogan: Just on general co-ordination, one of my proudest boasts is that I sat on the Flood and Water Management Act 2010. There have been regional flood defence committees in operation and, if I may be allowed a boast, Chair, I passed an amendment with the Opposition, against the Government, ensuring that those regional flood defence committees continue to have to approve the budget of the Environment Agency rather than just note it.

Chair: Which part of 2010 was that? Was that the first part or the second part?

John Grogan: I was gone by the second part. I was watching cricket by then. The whip at the time did say that it would bring down the Government but I do not think it did. What I was asking, more seriously, is that, in terms of the membership of the regional flood defence committees, I have always thought that they could have a more co-ordinating role, but should Flood Re be a regional representative on all the regional flood defence committees? Should the internal drainage boards be on them? At the moment, it is Environment Agency appointees and local authorities, but should that not be widened? It is all we have in terms of formally co-ordinating things. How is that for an idea?

Terry Fuller: There are all sorts of partnerships that are forming around the coast, as appropriate, and there are plenty of examples where those partnerships include a number of stakeholders outside the Environment Agency and the local authorities.

To your point about the coastal change management areas, they are, in concept, one of the more significant things to have happened in recent



years, so there is some hope there. We would like to see a formal designation of CCMA's within local plans, because there are not enough teeth behind them, potentially. Also, they tend to look at the areas where there is a no-active-intervention policy. Where change is being conceived, that tends to be where the CCMA's are interested. However, where you have a hold-the-line policy, you still have to face change, particularly to make those bits of the coastline more resilient. There could be some improvement there.

Q28 John Grogan: I am told that only 29 out of 94 coastal planning authorities have one.

Terry Fuller: That is right. It is about embedding it more in the local plans.

Innes Thomson: John, perhaps I can put forward ADA's view on the regional flood and coastal committees. They are a very valuable local, democratic institution, which we would certainly continue to support. In fact, we are also recommending strengthening the position of the regional flood and coastal committees. The breadth of their operation is increasing, with increasing membership involved within the regional flood and coastal communities, and that has been encouraged.

One of the things that we recommend is that they are given a full independent seat. At the moment, it is partial and they are still directly answerable within the structure of the Environment Agency, and having some autonomy and independence would give them that additional strength. At a local level, we would certainly advocate that.

Aiden Kerr: The only thing I would add to that is that the regional flood and coastal committees are perfectly placed to find whether there are other sources of funding that can come in to help fund some of these projects. They already make good use of the local levy, which can help get some projects off the ground that might otherwise have struggled to. What they are perfectly placed to do is to see what other beneficiaries and local businesses can help contribute towards flood defences that might, under the partnership funding mechanism, not get more funding. They play a valuable role.

Q29 Alan Brown: In terms of shoreline management plans, does the panel have a view on how effectively these have been delivered in practice? What failings, if any, exist in the rollout of these?

Terry Fuller: In terms of the ethos and the concept behind shoreline management plans, they are intrinsically good. The long-term thinking that those plans have encouraged us to try to adopt over the last decade or so is absolutely the right way to be going. However, in terms of implementation, it has not been working as it should. Part of that is because they inevitably point towards some challenging and difficult decisions that have to be taken and there is not sufficient impetus or obligation to face up to some of those implications.



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Innes Thomson: I would comment that one of the blind spots, potentially, in a shoreline management plan is everything else that goes on inside that section of shoreline. There has to be more of a connect as to what the effect of a shoreline management plan is on the immediate hinterland. I do agree with the fact that shoreline management plans are largely led by the local authorities or the coastal groups around the country. That is the place for them to be. The connection in with the planning process is, again, if I use an example, where you have a shoreline that is in recession or in erosion, and the planning process is to allow communities that ultimately are going to suffer from that erosion to be able to then translocate perhaps further inland or perhaps to some other location.

In particular areas, the use of language in some of the shoreline management plans needs to be addressed, in that that language can be quite aggressive with local communities. Something has to be done to interest the local community in the shoreline management plan, so that they are involved in it and do not feel that it is being done to them.

Q30 **Chair:** Sorry to interrupt but do you mean decommissioning? I really get rather upset with that word when they talk about “decommission” and just take something away and you just have to move house or whatever.

Innes Thomson: Chair, I will absolutely echo what you have said. “Decommission” is the one word that has certainly made me get quite frustrated with the process. I know it has been used in a particular project in Wales, at Fairbourne, really to quite detrimental effects.

Chair: If you happen to be the people who are being decommissioned, it is very insensitive language. Also, you have to realise that we are dealing with people when this happens.

Q31 **Alan Brown:** You have touched on this, and Terry touched on this, but the National Trust, in their written evidence, has said difficult local decisions on when to hold the line and when to retreat have been delayed and the can has been kicked further down the road. Would you agree with that sentiment? Is there a lack of leadership to make these decisions?

Innes Thomson: If I may come back to you on that, Alan, as soon as there is even the smallest amount of discussion about whether an alignment is going to remain or not, you automatically put at risk or put into potential blight the whole of that particular section of coastline. It is absolutely fundamental and crucial that the local communities are part of that discussion. There may be cases where a local community itself might come forward and say, “We are prepared to make some investment in a particular area to try to help not make this happen”, which may also require some Government assistance or some assistance from local authorities. However, the community has to have the opportunity to have its say, right from the outset, almost behind closed doors, before it gets into the public arena.



Terry Fuller: It is very easy for these discussions to be quite binary. On a lot of our coastline, we have legacy. People and communities have enjoyed a certain protection policy and hold-the-line policy. To then convince that community that perhaps we need to look at things in a slightly different way takes time and needs to be dealt with sensitively. We are talking about people here, not about properties. We are talking about homes, livelihoods, memories and family, and all those sorts of things, so more sensitivity is required. There is no doubt that in some places, where there is a certain level of expectation at the moment, those levels of expectation are going to have to change, I am afraid.

Q32 **Alan Brown:** Do any of you have any good examples of where there have been efforts to engage people in communities and businesses that could be affected by coastal flood risk and get them involved in the shoreline management plans, therefore making the plans effective and getting to that decision-making stage? Are there any good examples of that that exist out there?

Innes Thomson: We have quoted one small example in our evidence to the Committee, which involves not directly a community but at least part of a community, which is the Benacre Estate, where the estate, the Environment Agency, the local drainage board and the local communities all agree that you cannot hold the line at that particular point. The position is that, to the north of Benacre, there is a small village. It is doing what they are proposing to do at Benacre Estate that will allow the long-term viability of the community further upstream. That is an example of where people have worked together on the coastline, and the local landowner has accepted that he is part of the solution for the wider community wellbeing. It has worked very effectively across the different partners in play. It is a very small-scale example but it is an example that could quite easily be scaled up.

Q33 **Alan Brown:** Aiden, do you have anything to add?

Aiden Kerr: I have very little further to add. A key point for me is funding for local authorities that will generally be the authorities that lead some of the shoreline-management plans. Again, just to reiterate some of the points, this takes an awfully long time to work with communities and help communities come along with these plans. If you do not do that, you do not get anywhere with it. From my perspective and from Flood Re's perspective, the more transparency there is about the decisions in the shoreline management plans, the more people can adapt, so that they start to take decisions and make themselves more resilient, which, again, helps Flood Re in our transition to risk-reflective pricing.

Q34 **Kerry McCarthy:** Sorry for not being here sooner. I am on another Select Committee and we had a meeting as well. Can I ask about funding and whether you feel that enough funding has been allocated to deal with the long-term needs? Apologies if you have already touched on this.



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Aiden Kerr: I am happy to touch on it again because it is a really important point. We have seen funding increase over the current spending review period, but we have also seen, in the past few weeks, that the Environment Agency has said that, to keep pace with climate change, even with reasonable development policies in place, the long-term annual average for funding needs to be in excess of £1 billion per year. That is what we believe Government should be listening to. The Environment Agency, SEPA in Scotland, Natural Resources Wales and the Northern Ireland Rivers Agency also will have—

Q35 **Kerry McCarthy:** Is it about £750 million a year now?

Aiden Kerr: It is about that, yes. There needs to be an increased level of funding just to keep pace with climate change. From our perspective, it is about doing that but it is also about making sure that development in areas at risk of flooding does not make the problem even worse and that Environment Agency advice is taken fully into account. It is also about making sure that that funding is not just done on an annual basis but that the Government give a long-term commitment to funding, both in terms of new defences and maintaining those defences, so both on the capital side and on the revenue side.

Q36 **Chair:** From ADA's point of view in terms of the general funding, do you think that even £1 billion is enough?

Innes Thomson: I am going to put it, if I may, in this format: if there is £1 billion being put on the table by Government, what is to stop us attracting £1 billion from the private sector? Probably not a lot except for the process and the system that we have at the moment, in that it is very difficult for the public sector and the private sector to be able to align. Whilst there is £1 billion being asked for—and I will come on to why I am saying this—we could attract equal and perhaps greater amounts of investment from the private sector if we had the right systems and processes.

Chair: You are moving into the next question.

Innes Thomson: Sorry. Where I was coming to on this was coming back, if I may, Chair, to whether there is enough money in the system. One of the other things that we must look at is the efficiency of how we deliver what we have. What I mean by that is that, if we work together really collegiately across the wider industry, there are horses for courses here. What I am saying is that, for example, if you ask the Environment Agency to deliver a £10,000 scheme, it is quite difficult for them, because what they are used to doing and what they are very good at doing is delivering much bigger £100 million schemes or £10 million schemes. There are other bodies, such as internal drainage boards or other local delivery arms—and you may even include the likes of the Rivers Trust and Wildlife Trusts—that are able to deliver smaller works for far less money than might otherwise be spent. We could balance this out quite carefully.



Q37 Kerry McCarthy: Again, this might be straying slightly into the question about private spending, but in terms of these voluntary sector or quasi-public sector organisations, it is very patchy. I remember, at the time of the floods a few years ago, looking at the drainage boards and which areas have them and which ones do not. You are relying on there being those sorts of organisations operating in certain areas. I guess the capacity of some will be much higher than others.

Innes Thomson: Something I am very enthused about—and I really hope it gains its full traction—is the Rivers Authorities and Land Drainage Bill, which is currently going through Government. I know it has cross-party support. That is because it will give people the choice—and I really do emphasise that—that, if they want to manage something at a local level, they are going to have the ability to perhaps do that. I am very keen to see that making progress, because it will help with some of the questions around local funding.

Terry Fuller: The quantum of funding suggested in the long-term investment strategy feels right. The other aspect of funding, of course, is the maintenance budgets and maintenance funding, and we are about to go through the next settlement now, which will determine those sums. From those moneys, things like flood warning and temporary demountable flood defences are drawn, and they are a very important part of our adaptation and resilience agenda going forward, so we need to pay attention to that source of funding as well.

The other point that I would make briefly, perhaps picking up something that Innes said about efficiency, is that it is not just the quantum of funding but the timing and the commitment of it. If we can run to five, six or 10-year programmes of works, with funding committed to a programmatic approach, there are huge efficiencies that the industry can drive into delivery of those projects.

Q38 Kerry McCarthy: Can I just go back to Flood Re? In terms of your future projections, do they assume that the Government are going to provide sufficient funding?

Aiden Kerr: We do not depend on that. In terms of our lifetime, we have just gone below 20 years, which is something of an anniversary; by May 2039, we will no longer exist in our current form, but because we accept policies into the Flood Re scheme based on the premiums that are in place, our portfolio can go up or down, depending on the level of risk. If we get to 2039 and there has not been sufficient investment in flood risk management, we will not achieve our statutory objective of transitioning to an affordable, risk-reflective market, because the properties that require home insurance will not have their risk managed to an extent where insurers can price them at an affordable level. We do not make projections on that basis but it is absolutely critical for our transition objective that Government do invest at an appropriate level.

Q39 Chair: Just on this idea about maintenance—and Terry, you raise it in



particular—there has been an argument for a long time that we do not spend enough money on maintenance, so it very often builds up. In some areas, it may be silting; in other areas, it may be other causes of flooding. We wait for it to happen and then a whole fortune is spent on putting it right. Have we got the maintenance part of it right? If we have not, what do we need to do about it?

Innes Thomson: It is very reactive. Terry raised a very good point about long-term settlements. When you are maintaining stuff, if you know that you have five or even 10 or 25 years where you are able to plan what you are going to do in a reliable, long-term way, you can invest in plant and in people, and you then get the advantages of that long-term view. I would also say, linked to some of the previous questions around adaptive approaches, that those adaptive approaches are going to rely increasingly on better maintenance and better, regular inspection, and making sure that our various flood risk assets are in good condition.

Q40 **Chair:** It is a rather old expression that a stitch in time will save nine, but there is very much an element of that with flood protection. If we are not careful, going back to my original question when we started off, if you do let these banks breach, you can then spend an awful lot more money in a major flood scheme or having to put everything right, rather than repairing it in the first place. We will ask the Environment Agency whether that is part of their review, because it is not just about new schemes but about maintaining what is there.

Innes Thomson: Chair, if I may just add a further example, which is on the Essex coast, there is a whole range of quite small sea-defence protection around there. There is an organisation there that spends maybe £1,000 or £2,000 a time, simply making sure that very small bits of damage on that protection are kept at bay. For very small amounts of money but with regular oversight—

Q41 **Chair:** It is probably money well spent.

Innes Thomson: It is money very well spent, yes.

Terry Fuller: There is an important distinction here as well, in terms of how we might view maintenance in the future. We think of it very much in terms of condition and maintaining the condition of a defence, but under a more adaptive and more resilient way of thinking, we would be looking at, to give a simple example, building a seawall that then has to be raised in height at incremental points in the future in order to adapt to sea-level rise. Whether that is maintenance or capital is not clear, but certainly there needs to be more regular intervention in our existing defences going forward, whether it be for condition or, in fact, to improve the standard of protection.

Q42 **Chair:** Having gone out to the Thames Barrier, you see the way the levels have risen historically. If you intend to defend it in the future, we have to accept that those levels will rise. We have to decide whether or



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not we are going to defend it but, if we are going to, we are going to have to have something in place that is realistic, are we not?

Terry Fuller: Yes, that is correct.

- Q43 **Mrs Murray:** Just to go back to Innes, you mentioned private and community funding. How much of a role should there be for private and community funding for coastal defences or adaptation measures?

Innes Thomson: There is a largely untapped opportunity—

Mrs Murray: You specifically mentioned Pfizer and their scheme. Could this be built on?

- Q44 **Chair:** You say it is untapped. How are we going to turn the tap on?

Innes Thomson: We have been trying for quite a few years. When I say “we”, the industry has been trying. I alluded earlier to one of the crucial points. I have taken a little bit of stock on this with people in the private sector, and their concern is that the way that the public sector looks at and evaluates the benefits and, dare I say it, the returns on any investment made is entirely different from the way that the private sector sees it. Until we find some form of alignment on that, it will continue to be difficult for the private sector, under the way that it operates, to be able to invest the money, because it cannot see a return.

- Q45 **Chair:** Is it tax relief? What is it?

Innes Thomson: Tax relief might be a small element of that but there is a willingness and considerable amounts of money that would be invested. Anyone would invest in something that gives an 8:1 or 9:1 return on their investment, which is effectively what investing in some of our flood defences is leading to. However, if that cannot be tangible to the private sector, it becomes very difficult for them to then invest that money. We need to find a way, perhaps with Treasury’s help, as to how that might align.

- Q46 **Mrs Murray:** Just going back to the scheme that you mentioned—the Pfizer scheme and the £6 million investment in the Sandwich Town Tidal Defence Scheme—if we were to become more reliant on private funding for things like this, how would we ensure that poorer or more sparsely populated areas are not disadvantaged? It has the potential of disadvantaging some of the more sparsely populated rural areas.

Innes Thomson: You have a very fair point, and it would be Government’s role to make sure that there continues to be a social balance on this. That said, Government or the authorities need to recognise how you pump-prime a private investment to the extent that, in fact, if I can just use an analogy, instead of spending £1 million on a piece of work, the public sector spends only £500,000, £400,000 or £300,000 on that, and they can use the remainder to then be directed at areas that find it far more difficult to raise private funding. In terms of the £1 billion that we were talking about earlier on, if you are going to



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attract £1 billion from private investment, it will probably be invested where there is significant economic interest and impact, allowing perhaps some of the other funding that is available. The danger would be if any Government sees the opportunity to reduce the amount of funding because there is more private funding. That would be a big danger that we would need to avoid. What we are trying to do here is almost double what we are attracting into the pot.

Q47 Mrs Murray: Terry, do you have a view on that?

Terry Fuller: I do, thank you, yes. For a start, partnership funding, which was introduced in 2011, has enabled a lot of schemes to move ahead that otherwise would not have done, so it has served us quite well. We are now at a point where the low-hanging fruit has gone and it is becoming harder to make that work. We need a radical rethink on what that private/public money mechanism might be, because it tends to encourage short-term thinking. A business will invest because it wants protecting now, which is not necessarily good going forward. It also tends to focus attention around a particular geography. If there are ways in which we could pool that funding more effectively and allow that to be spent more strategically, that would be the way I would like to see us move forward.

Aiden Kerr: I would say two things. First of all, we in this country could take a leaf out of the book in the Netherlands, where flood risk management benefits are one of half a dozen or so benefits that come from managing water and managing land. When you start thinking about things in terms of managing water and managing land, you start to attract whole different types of benefits that start to become tangible and start to become cash-flow benefits. Once you do that, you start seeing contributions towards projects that provide amenity benefits, economic benefits and transport benefits, and also manage flood risk to a certain level. That is the way that we need to broaden how we think about these sorts of projects, and it requires more co-ordination in terms of how we think about infrastructure. That is the first thing that I would say.

The second thing is on your point about how we make sure that deprived communities are not left behind in such a model. It is a really good point. The first safeguard is the outcome measure, which targets those areas at risk that are particularly high on the index of deprivation. That is one way of dealing with it but we do have to be cognisant. Jaywick Sands in Essex is a great example where they are trying to come together as a community to think not just about the management of flood risk but also how they manage employment and how they manage transport to the area. That is the way to think about this: to think of it as not just flood risk alone but to think about the wider benefits of taking a land management and water management approach.

Q48 Mrs Murray: Finally, Aiden, does the Flood Re scheme have any lessons for meeting the funding gap?



Aiden Kerr: What sort of lessons do you mean?

Mrs Murray: We have a massive funding gap in putting in place flood defences that are 100% watertight. Does the Flood Re scheme have any lessons in how to attract more funding?

Chair: I suppose this is what it comes down to: do you have any money?

Aiden Kerr: We are lucky enough, in the first three years of our operation, to have not had the sort of weather that, indeed, we had a few months before, with Desmond, Eva and Frank. We have not had the kind of flooding that we model to be an average year, let alone a particularly severe year, so we have been able to build up some funding within Flood Re, but that has just allowed us to make sure we have enough capital to operate as a reinsurance company. What we have to remember—and this comes back to an earlier point about memories—is that the reason why Flood Re is needed is because flooding does not happen in equal chunks on an annual basis. We will have quiet years where people with short memories will think, “What was the problem?” and suddenly we will have a 2007, in which case we will need that funding and we will need to have the protection in place. If we do not have that, we do not give insurers the certainty that we can exist, which then starts to put at risk the availability of affordable home insurance.

Q49 **Mrs Murray:** Do you see any opportunities for, say, pension schemes, for instance, to invest in some flood schemes?

Aiden Kerr: Yes, I do. There are some really encouraging discussions around how we can look at green investment.

Q50 **Chair:** Would that have an investment return though? That is where the Treasury comes in.

Aiden Kerr: It is about you structure something—and it is beyond my brainpower—that gives the return back to those investors. If you do not have that, they go from being investors to being just administrators of grant, which then starts to take away what Government’s role is.

Chair: That was very good evidence, gentlemen. Thank you very much.

Examination of witnesses

Witnesses: Dr Mhari Barnes, Helen Mann, and Mr Julian Whittle.

Q51 **Chair:** Would you like to introduce yourselves for the record, please?

Helen Mann: Hello and good afternoon. My name is Helen Mann. I am from the National Trust. I am a consultancy manager, but today I am standing in as the coast and marine adviser and hope to do my best for you.



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Julian Whittle: I am Julian Whittle. I am the business engagement manager for Cumbria Chamber of Commerce. Cumbria has suffered from flooding. Most of it, to date, has been river flooding rather than coastal, but we do have significant infrastructure on the coast that is vulnerable, including some of national significance such as the Sellafield nuclear site and BAE Systems in Barrow-in-Furness. I suspect that what I can perhaps most give in terms of evidence is our knowledge gleaned from the experience of the three catastrophic river-flooding events and the impacts on businesses, which go beyond the obvious ones and which are equally applicable in the incidence of coastal flooding.

Q52 **Chair:** We did have evidence from Cumbria when we looked before, so it will be really interesting to find out what is happening now afterwards as well in terms of catchment management, which we are looking at now more than ever.

Dr Barnes: I am Mhari Barnes. I am the NFU's national flood management and access policy adviser. I am here to represent our 55,000 farming businesses that we represent across England and Wales, and to give an agricultural perspective on coastal flooding and the adaptation to climate change.

Q53 **Chair:** I will start off with the first question. What impacts have you seen from coastal erosion and flooding? What are the biggest risks for the future? It is a very broad question to start with.

Helen Mann: The impacts are very wide-ranging. They are social impacts, damage to property and damage to infrastructure. We have seen some very direct examples of that on our own properties. I would just like to say that we manage 1,200 kilometres of coast and we have 90 coastal hotspots in and around the coasts of England, Wales and Northern Ireland, so we have a good range of places where we have been hit quite badly by coastal erosion in the past.

Dawlish is a very good example of infrastructure that was severely damaged. Chiswell in Portland, which is not far from where I live, had significant damage as well. It is social damage, environmental damage and economic damage.

Q54 **Chair:** The trust owns a lot of coastal land. Sometimes it is quite controversial, is it not, to have to move people away from that area because of sea rising, if that is the decision? How do you manage that?

Helen Mann: It is very difficult for us. At the moment, some of the policies that are there to support us are not meaty enough; they are not robust enough. We have to take a long-term approach to this. For some of the sites where we have tried really hard to try to move people back, it has taken us a very long period of time to do that. Studland is a great example at the moment, where it has taken three years and an awful lot of money to persuade that community just to relocate a café. It is very difficult to do.



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Q55 Chair: I have got a couple of coastal villages. There is a caravan site and beach huts. We are trying to maintain the coast as it is, but if you retreat back it becomes very controversial, especially with a small area if it is part of the community.

Helen Mann: All 90 of our sites are difficult sites for us, where we know we have to look at adapting to this change.

Julian Whittle: In terms of the area I come from, Cumbria, there are 420 kilometres of coastline. There is considerable exposure there. I alluded earlier to some of the businesses that are potentially at risk in the long term. In terms of the economic impacts of coastal flooding, they can be very significant. At the moment, we have a coastal railway line, which is sporadically affected by the sea washing away bits of track, and three stretches of road in particular, one of which is actually closed at the moment. It has been closed since February. It is a B-road that runs along the coast between Maryport and Silloth.

Perhaps the best example I can give you of how flooding can cause serious economic impacts is a bridge at Workington, which carries the A596 over the River Derwent. It is on the coast, but it was actually more river flooding that led to the bridge being swept away in 2009 and the tragic loss of life of a police officer, who was trying to ensure that everybody was off the bridge. That bridge was out of commission for two and a half years. It took two and a half years to replace it. For that time, traffic had to make a detour inland of about 18 miles.

Unfortunately, the A66 road that they were using was already a busy road and the extra traffic caused gridlock. A journey that would have taken a matter of a few minutes could in some cases take two hours. The local authority estimated that cost to businesses and to the economy was £2 million per week. That persisted for two and a half years. The bridge, by the way, cost £11 million to replace. The cost of the bridge was dwarfed by the economic cost.

Q56 Chair: I do not suppose anybody got any compensation either.

Julian Whittle: No. Insurance would not cover you for the time that a driver and lorry is stuck in queues and so forth.

Q57 Chair: I was going to ask you, before going on to Mhari, about how Cumbria and the businesses have generally recovered? We had evidence from you when you had your floods more recently. Has it taken a long time? What is happening?

Julian Whittle: It has taken a long time. Perhaps there is not always an appreciation of how long the effects of floods can last. As an aside, I actually live in a house that was flooded. My next-door neighbour only moved back last month after the 2015 flood, because he had a dispute with his insurers so he had to do all of the work himself. It has taken him that length of time.



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How does that impact on businesses? Very seriously. It is not simply the cost of the damage of the water ingress into your business premises and the temporary loss of production. I can give an instance of a business that employs 400 people that was flooded in 2009. The day after, their competitors were touting their customers for business. The engineering business was actually back in production relatively quickly, but when you lose customers because of that interruption, you may never get them back again.

Another factor that persists to this day is the issue of investability. When your business had been flooded—this is particularly true of smaller businesses and single-site businesses—banks look at you and perceive you now as a much riskier proposition if you want to borrow money, because they think if there is another flood then you might be out of business and they would lose their money. It mitigates against investment, because businesses cannot borrow.

If, on the other hand, you are part of a much larger business—you are a site that has been flooded but you are owned by a multinational—when they are making decisions about where they invest, they are less likely to invest at your site. Obviously, there will be a matrix of factors that they apply but flood vulnerability will be one of them. If they perceive that particular site is vulnerable, they will probably divert the investment elsewhere, possibly even abroad. Those issues have not gone away.

Q58 **Chair:** They are slightly more difficult to quantify as well.

Julian Whittle: They are, but they are very real. In terms of insurance— I know you were asking some of your previous speakers about this—businesses are not eligible for the Flood Re scheme. What we have tended to find with a lot of small businesses is that their insurers have turned around and said, “We will give you an affordable insurance policy, but, by the way, the excess for flood claims is going through the roof, to many thousands of pounds”. Effectively, they are saying to the business, “We will not insure the next time. You will be paying the claim”.

Q59 **Chair:** That is right. Yes, there are all forms of insurance, are there not? If you put the excess too high then it is not really an insurance policy in some respects, is it? They cannot then refer that back to Flood Re, or can they?

Julian Whittle: No, they cannot. Businesses are not eligible.

Chair: Of course, that is right.

Julian Whittle: I believe that even applies to buy-to-let landlords, because they are businesses.

Q60 **Chair:** It is a fair point. Thank you for that. We will make sure that is recorded. Mhari, as far as land is concerned, in terms of maintaining protection of agricultural land, how do you feel coastal erosion is going to affect that and is affecting it?



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Dr Barnes: It is having a massive impact. There are over 500,000 acres of prime agricultural land that is worth a lot to farmers' livelihoods and to their businesses, but also to local communities. These are where people get a job, with over 4 million people in the UK employed in the agricultural sector. It is contributing towards the UK's economy—it is worth £122 billion per year—yet it is not being recognised and is being hugely undervalued when it comes to coastal flooding and erosion.

There are some farms up in eastern Yorkshire that have literally lost three metres this year already. This is not during a period where there has been an extreme storm event. In those cases, they can lose up to 20 metres in a single event. When you add that up and start to think about the impacts it will have on the farm over time, it is almost to the point where you think, "Is this going to be sacrificed because it is not being valued as an area that should be protected?" It is producing the food for the nation, so it should be something that should be protected.

Q61 **Chair:** At the moment, successive Governments have naturally concentrated on protecting property and people, which we all understand. Would you say that there needs to be some realignment in that thought on how agricultural land, especially very productive agricultural land, is protected?

Dr Barnes: Yes, there is a sacrificial aspect and consideration towards agricultural land. Since the early 2000s there has been a shift in the focus of Government spending on flood defence and protection, towards people and property. What has been neglected is the fact that this is very high-value agricultural land, which produces a lot of the nation's food. In one area in Humberside there is over 120,000 hectares that are at risk of flooding. That land would produce enough food to feed the city of Hull for 20 days. That is a population of over 250,000 people.

Chair: I am beginning to steal John's question.

Dr Barnes: I am sorry.

Chair: It is my fault. I lured you in the wrong way.

Dr Barnes: If you are looking into the food that is produced, we are an island nation and we have to think about how much we are going to have to bring into the country. A lot of people like to back British farming and we need to be protecting agricultural land for the commodity that it is.

Chair: We need food, do we not? That leads me quite neatly to your question, John, having hopefully not stolen all of it.

Q62 **John Grogan:** Just generally, do we have the right balance between the needs of householders, businesses, landowners and conservation in deciding which bits of coast to defend and how to defend them? Is there anything anybody would like to add on that? You began to touch on it.

Dr Barnes: Innes mentioned that there is this pyramid. In that pyramid, there is society, there is economics and then there is the environment.



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Which goes on top? Is it the environment or is it society? Then you are leaving economics at the bottom. It is a balance. Instead of a pyramid, let us change it to some kind of seesaw or scale in which we understand that there is a need to protect the environment. Farmers do a lot of work to do that and have produced an environment that 84 million people enjoy in a year, on trips out to the countryside. Therefore, which do you place on top? Is it going to be a case of, "We will focus on one and let the others slide"? That has been what has been happening over the last couple of decades.

We are now getting to the point where we have an increase in protected sites, which are given a much higher value, to the extent that our members need to carry out essential maintenance works and are not getting permission to do so because the site is now a designated or protected area. They then have to fork out for permits and licences in order to meet environmental legislation, all while the Environment Agency are, to use your word, decommissioning vital assets. Another word that has been thrown about at recent policy advisory groups is "abandonment", which is even more terrifying to our members. It is about which you put on top and how you justify that.

Julian Whittle: If there is one point that I would want to make today, it is that the balance, in terms of looking at and assessing flood schemes, is not right at the moment. We would not want to see residential property disadvantaged, but at the moment there is not enough cognizance given to the needs of business. I believe that in the cost-benefit analysis you can take the needs of business or the effects on business into account, but in the funding calculator that follows on from that it is purely prioritised on residential.

There are costs. In my answer to the previous question, I mentioned some of the less obvious impacts on business that flooding causes. Perhaps I could add here that when a business is flooded, the economic impacts can be felt way beyond the area of the flood. You might be miles away from the flood, but if you are reliant on a supplier that has been knocked out by a flood then it will impact on your business. If your customers have been flooded, then that will impact on your business. There are ripple effects—perhaps that is not the best metaphor when we are talking about water—in the economy beyond the flood zone. At the moment, when evaluating the viability of schemes, there is not enough cognizance of the wider economic impact and the needs of business.

Helen Mann: I agree with my colleagues. In addition, I would just like to say that there is not enough balance given to adaptive measures. There should probably be a bit more thought about natural capital and the value of land in relation to flood defence, and nature and wildlife as well. Actually, a lot of land could become natural flood defence, natural water storage or catchment land as well. The new environmental land management scheme is a really key part of looking at how we could properly compensate where land may be lost from agriculture. I am not



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saying that is necessarily the right thing to do everywhere, but there are areas. We have some of our own land where we are actively moving away from marginal agricultural land and saying, "Actually, we are making space for water now".

Dr Barnes: We do have members that accept that is the case: that agricultural land could be given over to either temporary or deliberate storage of flood water. Surely that is performing a public good and there should be some kind of compensation there. It should not be a charitable thing, because a farm is a business. That is what we need to remember during this process.

Q63 **Chair:** The difference is not always recognised. Farming right be the sea, and having been flooded in 1981 with seawater, I do not believe people altogether recognise the difference between the effects of seawater and the effects of freshwater flooding. Your land will recover quite quickly from freshwater flooding, whereas with seawater it does not. It also dramatically changes that land. Sometimes that is something that we need to take more notice of. I do not know what you feel on that.

Dr Barnes: When it is saline water that is on the land, it is okay for a few days, up to a maximum of seven. After that time you have salinisation into the soil. Your crop is then going to die, but you are also going to lose things like worms and everything else that is in that.

Chair: Yes, the structure breaks down.

Dr Barnes: Yes, the structure is gone. It is very difficult then to have a viable farming business. This is something that has actually been happening in Gloucestershire in the River Leadon catchment. There were two tidal flaps that broke during the flood event in 2007 and have not been replaced or repaired. There have been negotiations with the Environment Agency to look at the cost-benefit analysis of these assets, but since 2007, which, as you can appreciate, has been a long period of time, several of our members have had to abandon their farming businesses or adapt their practices because their land is purely not farmable. It has just been given up as, "Shrug it off". How can you have that kind of argument with a farmer? It just does not stand up.

Chair: Certainly, I get very exercised over that. I should declare an interest, I suppose.

Q64 **John Grogan:** I just have one more question, which is the same question that I put to the other panel. Starting in Cumbria, and then if there are lessons elsewhere, how have the local, regional and national bodies worked together over recent years, obviously under great stress at times? Can we look at the situation in Cumbria, first of all, and then get any reflections on the wider picture?

Julian Whittle: To give that some consideration, there is some disbelief in Cumbria about how long it has taken to put in place new flood prevention measures after the recent floods. For example, in Carlisle,



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which was badly affected in 2005 and 2015, the Environment Agency has finished the consultation now but has yet to actually start work. Remember, this is a response to an incident in December 2015. The work will not be completed for this coming winter. It is a slow process.

In terms of coastal flooding, what struck me, partly because I am doing a bit more reading around it than perhaps I had been aware of before, is the number of different bodies that are responsible for coastal defences in some parts of the county. We have two-tier local authorities in Cumbria. Some are maintained by the county council. Network Rail seems to be responsible, because of the railway line, for great stretches. Sellafield is responsible for its own defences. It is supposed to defend that site against a one-in-10,000-year event. You have any number of bodies, so you have this very patchwork approach to it.

There will probably be a question about the shoreline management plan to come into there, but there is something called the Cumbria Coastal Strategy, which Cumbria County Council has led on. That follows on from the shoreline management plan and is actually more detailed. At the moment, that document is still in its final iteration. It is supposed to be published at the end of this year.

Q65 Chair: From a National Trust point of view, how well can you link into local authorities? How much influence do you think you have in the process?

Helen Mann: The influence is improving. We have great case examples and live case examples that we can share. In the overall scheme of things, they are probably very low key, but they could be quite good litmus tests of how some of this policy works in practice.

We currently have an issue. I know we feel there could be some improvements made between the planning sector, Defra and the Environment Agency. There is occasionally a disconnect in terms of what we are allowed to do. From a planning perspective, if SMPs and coastal change management areas had more clout, it would make it a lot easier for landowners to know exactly where they stood. When you start to engage with communities about this stuff and it is not enforceable or it is not mandatory, it is much harder to get them to accept that sometimes this change is necessary. That is one area.

The other thing that we have had a live example of is when it comes to listing of structures. Occasionally, we have had a situation where we have wanted to enable curated decay, which would be a good analogy. Sometimes the listing has actually been a blocker. Even though we have wanted to move to a policy where we were actually allowing natural processes to take place, we have been stopped, effectively, by a listing in place. It is about looking at the wide range of policies that connect with the coast and making sure that they all talk to each other and that all of these organisations also talk to each other. We could be used as a vehicle



to allow real examples to come to light, where we have had struggles implementing our own policies on the ground.

- Q66 **Chair:** You make an interesting point on listing. Having sat on a planning committee for many moons in a previous life, listing is just about how unusual something is and whether it should be listed. It does not really take environmental conditions and others into consideration. It is quite a fascinating point you make really. I can see how this causes issues. We are going to have to look at the whole thing in the round.

Helen Mann: The other aspect of that is all the designations of SSSIs and so on. They are lines on a map. As soon as that land is lost, what is it? It then potentially reverts to the Crown Estate and becomes part of the seabed. It is a bit confused. There are real grey areas around the coast.

- Q67 **Chair:** That is right, because the Crown owns some of the mean tidal range, does it not?

Helen Mann: Yes. Where does the land stop being a SSSI and become something else? There are all sorts of issues around that, just on the mapping of it.

Chair: It is actually a split between the two people who own it if it is inland. On the shoreline, it is different.

- Q68 **Mrs Murray:** If I could just follow on a little bit on the shoreline management plans, Helen, in your evidence you said that difficult decisions in shoreline management plans about when to stop trying to hold the line are being delayed, for reasons of short-term political expediency combined with the lack of leadership. Can you give us some examples of this?

Helen Mann: Yes, there are places in the country where we have a hold-the-line policy at the moment. We are coming to the end of the first epoch. There may be a change from the hold-the-line policy over to managed realignment or another policy. It is not going to be very easy to implement those. The Environment Agency themselves have said in their own evidence paper that this is a challenge for them.

We are raising it as a challenge for us as an organisation, but also a challenge for society in general. We cannot hold the line everywhere that these SMPs have highlighted. It is just not economically viable, socially responsible or environmentally wise to do so. From a sustainability angle, it will become impossible to hold the line at all of these places. We are just flagging it as an organisation. We want to help to try and get to the bottom of how we deal with these difficult issues.

- Q69 **Mrs Murray:** Mhari, are the needs of agriculture sufficiently reflected in shoreline management plans, in the NFU's opinion?



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Dr Barnes: Quite simply, no. There has not been the amount of engagement with farmers as to what is required within the shoreline management planning.

Q70 **Mrs Murray:** Has there been much engagement with the regional NFU offices or the local NFU representatives?

Dr Barnes: Our regional NFU offices have really good relationships with local level sectors, but there is just a disconnect between what our members need and the reassurances compared to what is actually required within an SMP. It has been something that we have been very disappointed in and we would like to see changes on in the future.

Q71 **Chair:** Just to follow up on that, as far as the Environment Agency is concerned, one of my charges to the Environment Agency is that we need a plan. We need to work out what we are going to hold on to and what we are going to release to the sea, but people need to know. Without putting words into your mouth, do you feel you are getting enough co-operation from the Environment Agency on this?

Dr Barnes: It differs across the country. In some areas there is more engagement and in others there is a distinct lack. In some areas there is also a distinct lack of transparency. Basically, there is not the communication there. If there is communication, they can plan. If there is planning, they know what to expect. If you are just, all of a sudden, left there in the lurch, then you are starting from square one again.

There have been some areas, again in Yorkshire, where the Environment Agency has protected a community by building a hard, engineered defence. When there was a tidal surge in 2013, the areas around that were not protected. When water wants to find a way, it will. It simply went around, isolated an entire town and flooded the agricultural area around that. It became an island. It is a risk to life, but also it is a critical infrastructure in that area. That is where, if they had just spoken to local members of the NFU and our regional advisers, they could have said, "20 years ago this is what happened".

There is not that kind of communication, and that is the only way we can work together to move forward. It could be the same with working with local businesses and with the National Trust, because there is knowledge there. Instead of relying on models and computational scenarios, talk to people. That is what you need to do; it is about communication.

Q72 **Chair:** You make an interesting point. Again, where I farm in Somerset the coast is actually higher than in land. The problem is that if you retreated with the sea you would have to go all the way to Glastonbury, because that is what would happen. It would flood all the way up through. In some areas you can automatically retreat and you do not have to retreat too far. In other places you have to retreat much further and it is completely unfeasible to do it. I know we have all of the modelling and everything, but do you think we necessarily understand



that sometimes?

Dr Barnes: No, I have done modelling in the past as a researcher and there are such high margins of error with every single model simulation. These have to be considered when looking at a modelled map, whether it is a flood risk map or whether it is sea level rise. These are things that you have to consider. Everything has to be taken with a pinch of salt. When you go to a farmer's kitchen table, you show him a flood risk map and he says, "No, it does not flood there. It floods there", the researchers say, "This is a really good computer model and it is saying it is there". Who would you believe? I know who I would believe. There is that disconnect.

As you said, where Somerset is it is like a bowl; it collects the water. It is similar in East Anglia and all the way up to the Humber. There is the same kind of thing happening, where the river is up here and the land is here. We then have drainage channels that are pumping the water from one to the other. After the tidal surge in 2013, there was a breach of the sea bank and it flooded over 500 acres of agricultural land. There was no way for the farmers to get that saltwater off their fields, because the Environment Agency would not give permission for them to pump it out, even though they were giving up their time and their money to provide pumps. They had to find a way to guide it.

Chair: It is saltwater and they did not want it pumped back.

Dr Barnes: They did not want it pumped into the North Sea. They wanted to pump it back out, but they were not allowed permission. That land is now still recovering; that is six years on, and there are still not crops able to be grown on that land. Those are the things we have to consider.

Q73 **Alan Brown:** Sticking with the shoreline management plans, Julian, this is for you. You can maybe guess what is coming next. In terms of your local SMP process, how good was the business engagement aspect of that? Do you feel that business was able to be involved and feed in effectively?

Julian Whittle: The shoreline management predates my time at the chamber, so I cannot really comment on how engaged business were in that. I can comment on something called the Cumbria Coastal Strategy. This is the document I mentioned earlier, which the county council has led on. They have set up a project review group that involves partner agencies such as the Environment Agency and the National Trust; it also includes the district councils. That has produced a draft document that is very good in that it is much more detailed than the shoreline management plan. Whereas the shoreline management plan will talk in broad terms about, "We will hold the line here", in the coastal strategy, it will say, "The plan is to hold the line here", or "Here are the options for here, but if we are to hold the line, this bit of defence needs fixing". It is a very detailed micro-document.



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The county council consulted on this right at the end of last year. Often the way local authorities approach consultation is that it is a box to tick. They ran a series of drop-in sessions that were open to the public, including businesses. We do a lot of engagement through the chamber, and we will do other things. We will run focus groups and online surveys rather than simply running a drop-in event, which, as I said, ticks a box but does not get a particularly high level of engagement.

I would also say that it is perhaps slightly disappointing that the project review group that led the strategy had very little business input into it. The only business represented on it was NuGen, which was the company that was going to build a new nuclear power plant in Cumbria, but that scheme has since fallen by the wayside. An organisation like the Chamber of Commerce would have been an obvious one to involve in the project group but it was not.

More could certainly be done to engage with businesses, but that does not take anything from the strategy, which is a very comprehensive document.

Q74 Alan Brown: I take it you feel that the council's consultation was very functional and not a proper two-way. Has that been fed back at all?

Julian Whittle: Yes, the consultation that the council did was the bare minimum that they could have done.

Q75 Kerry McCarthy: Can I ask about the contribution that is expected or has been made by the private sector, by landowners or water companies? I do not know if the NFU wanted to kick off on that. It does seem that Defra has suggested that businesses are responsible for managing the risks to their businesses associated with flooding or coastal erosion, but is that reasonable?

Dr Barnes: We understand that, in terms of central Government funding, there is a limitation as to how much money is available for flooding and coastal defences. In some cases, our members are tenants, so they do not own the land that they farm. There has to be an agreement with their landlord, and it depends on the type of tenancy they have as to who would pay for any type of flood defence.

Q76 Kerry McCarthy: They could also be quite short-term tenancies, I suppose, as well.

Dr Barnes: They can. It just depends. There are a lot of different types. I am definitely not an expert in tenancy agreements.

Q77 Kerry McCarthy: They are not going to be able to put huge amounts of money in themselves.

Dr Barnes: Exactly. The landowner will claim that rent and it does not matter to them whether or not the land is farmable, unless the tenancy is based on the annual income that they get from what they sell on the



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land. There is that aspect of it. Coastal flood defences are, arguably, the most expensive of all flood defences, so there is that aspect of it.

If businesses that have the capital to provide flood defences for their own land or factory or whatever it is build these flood defences, they are simply moving the floodwater from somewhere to elsewhere, or diverting it. Often, as in Humberside—I am going to use that example again—this falls on to agricultural land. Then you have floodwater on farmland where there are crops that, in most cases, are uninsurable. Farmers have to meet a quota as to how many, say, carrots they have to provide for a certain supermarket, if they have an agreement like that. Farmers do a lot of work to ensure that their land is farmable, and they do what they can, but they face a lot of barriers in doing so, from environmental permits and having protected sites on their farm, or from being in close proximity to SSSIs or ancient woodland. These will all impact what work they can carry out.

There is then also the timing aspect. If they do get a permit, they have a certain amount of time to carry out the works. If it is a wet summer, they cannot do the work. Equally, in some cases, they are putting their lives at risk, as a riparian owner, in carrying out this work. It is very difficult to strike a balance and we do have members ready to do something for the public good when it comes to flooding, but that needs to be recognised as well. It has to be remembered that a farm is a business. The only difference is that fields do not have roofs. They are so susceptible to climate change, to sea-level rise and to the great British weather, whether it is too much water or, in some cases, too little. In some areas, they have the issue of both. These are all things that they have to consider. When a farmer is a farmer, it is then very difficult to then expect them to, all of a sudden, become a flood-risk engineer and carry out X, Y and Z work in order to be able to farm his land with very little support from the Environment Agency.

It is different for farmers who are members of internal drainage boards. They do have a lot of support and there is a lot of collaboration within the drainage boards and a lot of expertise, but that covers only 10% of England and Wales. That is where it becomes quite difficult.

Q78 Kerry McCarthy: In terms of a return on investment, you might be preventing a loss of income by preventing the flooding or erosion but you are not investing to increase your income, so the economics of it are tricky, are they not?

Dr Barnes: Yes, and it goes back to that whole charitable, sacrificial thing: who should be the ones who pay? There is one example that I have used in the written response, which is the Wrangle sea-bank project. This was a project where they raised a sea wall that is currently there after a breach during a tidal surge in 2013. That was only possible because farmers donated the material for the raising of the wall. They also donated 50 acres of prime agricultural land that could be flooded intentionally. This has led to the protection of over 460 properties and



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over 4,000 hectares of prime agricultural land, but that was a charitable thing. Even though there was funding from the EU and from the Environment Agency, the land and the material that was given in kind also comes with an economic worth. Where is that recognition? It just does not exist.

It is happening now; it is just not getting any interest because it is not at the top of policy priorities or it is not getting interest from the Environment Agency. It is very difficult.

- Q79 **Kerry McCarthy:** Around the time of the floods, which I suppose was late 2015 or early 2016, there was talk about paying farmers to allow their land to flood—I guess that was more inland—in order to protect businesses further down the river. Oliver Letwin had a committee that was meant to be looking at all these things and, like many of these committees, nothing much came out of it. Is that fair to say?

Dr Barnes: There has not been anything solid from it yet.

- Q80 **Chair:** It is whether it is part of our new agricultural payments in the future.

Dr Barnes: That is what we are waiting to find out, but it is a bit of a waiting game.

- Q81 **Kerry McCarthy:** I was on the Agricultural Bill Committee and I am now thinking that perhaps I should have used that opportunity to bring it up a bit more, under the public-good side of it.

- Q82 **Chair:** It is something we could look at as a Select Committee when we look in more detail at the payments?

Dr Barnes: Yes, that would be good.

- Q83 **Chair:** Again, going back to a previous point, there is a difference between freshwater flooding and saltwater flooding, because your land, with freshwater flooding, is probably quite useful for grazing, whereas, with seawater flooding, it probably is not, or there is more limited stocking and what-have-you.

Dr Barnes: Yes, there is a big difference. Natural flood management in the uplands and into lower-land areas is possible but, in coastal areas, where you intentionally flood an area, even on a temporary basis, the longer-term impacts from having that saltwater there mean you cannot farm it. Equally, however, you could have increased saltmarsh, which will allow you to graze cattle that are then sold for a premium, so it works both ways.

- Q84 **Kerry McCarthy:** Do either of the other witnesses have anything to say?

Helen Mann: I would just like to say that, as a landowner, we accept our responsibilities when it comes to the ownership of land and we accept that we should have to pay for some of the loss that we will face in the future, or any adaptive measures that need to be put in place, but I



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would say that it would be great to get more support for adaptive measures, more support for community engagement and more education around that, because climate change is inevitable. What is really hard for a lot of landowners is how you do that and do it well. It does cost time and money and, at the moment, there is not a lot of help in that field.

The other issue I would like to raise is that the £11 million pathfinder projects that were done years ago by Defra were really useful in terms of giving good examples of adaptive measures for the future. That has died a death and it would be really nice to reinvigorate some of that pathfinder approach to how we look to facilitate change on the coast.

The other thing, finally, is the whole cost-benefit analysis around whether we should keep or lose defences along the coast. We need to value natural capital in that mix. At the moment, the economic drivers do not necessarily think about natural capital.

Q85 Chair: You have to value the natural capital properly.

Helen Mann: Exactly. With the value of saltmarsh for carbon sequestration and all of that stuff, we are not doing enough to think about the benefits of the land as an alternative. Medmerry down in Sussex is a really great example of quite a difficult scheme that was done 10 years ago, but the economic benefit now of that site for recreation, for people and for the place is significant. The Jurassic Coast designation is also a really good example, as is the South West Coast Path designation in terms of access around the coast. If we thought in terms of coastal corridors and the value that they could have, free of inappropriate developments, et cetera, we could look to valuing what they could be as well as what they are.

Julian Whittle: In terms of the principle of expecting businesses to contribute towards defences, businesses already do spend money on making their own premises flood-resilient, if they think they are at risk. When it comes to the contributions to flood defences, there is more resistance to that idea because, coming back to what I was saying earlier, it already inhibits investment if you add cost to businesses by saying, "You have to contribute to flood defences as well". It is another nail in the coffin, as it were, of the viability of that business. It does strike us, as a chamber, that this is one area where you set an appropriate level of corporation tax or whatever and you use that money to pay for flood defences, rather than a pay-as-you-go basis with individual businesses contributing.

Q86 Kerry McCarthy: We heard in the previous session that Government are being urged to increase spending up to £1 billion. If there is an expectation that Government will come up with more money for projects, if you were a private sector business, you are not going to be the one to sort yourself out if you think that Government might step in. I do not know if "moral hazard" is the right phrase in that circumstance. I remember, again going back to the Cumbria flooding, there was a water



company—perhaps Yorkshire Water—that would take steps to try to stop flooding in their catchment, which meant that other people did not then have to make a contribution and so on. How does it work? If you had farmers or other businesses that decided to put money in, so that it becomes mostly a private sector project, that means that other people will benefit from just sitting on their hands for a while. Is that fair?

Dr Barnes: This is where the Rivers Authorities and Land Drainage Bill would come into action, if it goes ahead and changes are made. There will be a body that controls who pays in and how much, and how that money is spent. Similarly, there could be a company limited by guarantee set up and everyone pays in who would benefit. In areas where there is an IDB, those areas could be expanded to include urbanised areas or farming areas that currently do not pay towards that. There does, however, need to be a serious look into who pays what and whether it is fair.

Q87 **Kerry McCarthy:** Yes, there has to be some consistency.

Dr Barnes: Yes, there is inconsistency, but it goes back to collaboration. I was recently on a trip to Holland to look at what they are doing over there with land drainage and flooding. One of the key things that I came back with was that everyone has to own the problem. It should not be about pointing the finger of blame but about everyone having to realise the importance of water, whether it is too little of it or too much. Everyone has to accept that this is a valuable resource without which we would not be able to produce food or have a business or do anything. This is something that we do have to consider.

Can I just make a comment on the £1 billion Government spending based on long-term investment scenarios? That is based on current climate conditions and not climate change. That is the minimum that is required per year to carry out maintenance to existing flood defences or to create new ones, but based on current climate scenarios, not on what is expected. If you then take into the equation what is foreseen to happen in an extreme scenario, with a sea-level rise of up to 1.15 metres, that number could very easily jump, and quite significantly.

Helen Mann: The only danger with focusing too much on the financial side is perhaps that it is going against the grain or the SMP, or it is a coastal change management area that should be much bigger than it is. It is about making sure that the development or the business is appropriate in that location. If you went to a community and said, “We want to defend this site”, they would go, “Yes, of course we do and we will pay towards our local levy”, not understanding that the long-term future is not great. We have to get the balance between where we fund and where we do not fund.

Dr Barnes: There does need to be community support.

Q88 **Chair:** There is just one last question from me. One of my pet themes is



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that, when the Environment Agency and Defra get involved in a scheme, it immediately becomes extremely expensive, so there could be times when there could be a lot more self-help, through drainage boards or through farmers themselves, especially where there are earth banks. It is a bit cheeky of the Government to say, on the one hand, landowners and farmers must pay for all this and, on the other hand, dictate exactly what you do. You have to have rules and regulations—I accept that—but where you have earth banks in particular, there is no doubt that farmers and landowner co-operating together, along with the drainage board, could deal with that situation probably for a fraction of the cost. With the new act, will there be anything in that to enable that to happen?

Dr Barnes: It is already happening. In some cases where the Environment Agency has walked away from maintenance, whether it is earth banks or desilting, there have been negotiations between farmers, landowners and IDBs to carry out the work. IDBs can often do the work a lot more cheaply than the Environment Agency.

In one of the examples I gave earlier about the Leadon catchment in Gloucestershire, the Environment Agency gave a quote of £100,000 to replace the two tidal flaps, whereas the farmers got a quote to replace the tidal flaps and desilt the channel up to five miles for £15,000. That is the difference in price that we are facing. The whole system needs shaking up; otherwise there is not going to be any maintenance done, the areas that are at risk of flooding now are only going to increase, and those flood events are going to increase in magnitude and frequency. The system is broken. I then have to explain to a farmer why the Environment Agency has quoted that amount and they have not got that funding from the Environment Agency through the cost-benefit analysis or the Flood Defence Grant in Aid scheme because, "They have this and we are down there, and that is the difference". It is very tricky.

Chair: That was very good evidence, thank you. This is something we can put to the Environment Agency and to Defra when we are taking evidence from them as well. Can I thank all three of you, again, for a very good evidence session? It is good stuff for us to get into our report. Thank you again very much for coming.