HOUSE OF COMMONS

Environment, Food and Rural Affairs Committee

Oral evidence: Farming rules for water, HC 927

Tuesday 11 January 2022

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Watch the meeting

Members present: Neil Parish (Chair); Kirsty Blackman; Ian Byrne; Geraint Davies; Dr Neil Hudson; Robbie Moore; Mrs Sheryll Murray; Julian Sturdy; Derek Thomas.

Questions 1 - 73

Witnesses

I: Stuart Colville, Director of Policy, Water UK; George Dunn, Chief Executive, Tenant Farmers Association; and Professor Andrew Neal, Soil Microbiologist, Rothamsted Research.

II: Kevin Austin, Deputy Director for Agriculture, Environment Agency; and John Leyland, Executive Director, Environment Agency.

Written evidence from witnesses:

– Water UK

- Tenant Farmers Association

- Rothamsted Research

- Environment Agency

Examination of witnesses

Witnesses: Stuart Colville, George Dunn and Professor Andrew Neal.

Q1 **Chair:** Welcome to the Environment, Food and Rural Affairs Select Committee. We are looking into the farming rules for water, and we welcome our three witnesses this afternoon. Starting with George, will you introduce yourselves, please, for the record?

George Dunn: I am the chief executive of the Tenant Farmers Association of England and Wales.

Professor Neal: I am a soil microbiologist from Rothamsted Research, particularly interested in soil and all good things in it.

Stuart Colville: I am the director of policy at Water UK, which is the trade body that represents all the water and sewerage providers across the UK.

Q2 **Chair:** Thank you very much, gentlemen, for joining us. We are very concerned about getting the situation regarding farming and water pollution right because we know the value of organic matter in soil. I am going to start off with a fairly overall question. What are your concerns about the current interpretation of farming rules for water? I am going to throw that one straight at George, so over to you.

George Dunn: Can I thank you, Chair, and the Committee for taking an interest in this important area? Can I also say how much I appreciate the work that your Clerks have done in pulling together this session? It has been really good.

If I take you on a bit of a journey, we had the consultation that led to the 2018 regulations. There was no suggestion at that time through the consultation that we were going to see a major change in the practice. We always were of the view that we needed to do more to control the amount of diffuse pollution from agriculture. The industry was up for having that conversation and the regulations were framed in that light.

They were introduced in 2018 and it was not until the middle of last year that we encountered a problem, in the sense that we began to see from the Environment Agency, which has not covered itself in glory in this respect, Mr Chair, the idea that the only way in which we can comply with farming rules for water—and particularly farming rule for water 1, as it was called, which is regulation 4(1) in the 2018 regulations—was to ban outright the application of organic manures to land in the autumn. That came as a shock to the system because there were farmers who were ready and had the procedures in place to begin to apply the manures in the autumn. There were farmers who had biosolids that they had been storing all year to apply to land, and all of a sudden we were left with a situation where farmers felt massively confused about what they could and could not do.

We have been consistent, with our colleagues in the NFU and other farming organisations, that the regulations say that you should not apply manures in the autumn unless there is a crop or a soil need. We were very much of the view that applying manures in the autumn for a crop needed in the spring was an acceptable practice under the regulations so long as you could show you were not a significant risk of pollution from applying those manures, a position the agency simply did not accept. It established a working group bringing together the various organisations, and we have listed in our evidence who the members of that working group are. We had two pretty dreadful meetings of the working group

because the agency would not move from its intransigence that an autumn application was allowed under the terms of the regulations.

We had to have the intervention of you, Mr Chair, and this Committee, and, happily, Minister Prentis from DEFRA, before the agency relented on its position. Even in the correspondence that you have had from the chief executive of the agency, the letter that you received was written in such weird terms that it seemed to imply that it was saying that you could apply manures in the autumn but actually the letter, if you read it carefully, was saying you could not. Happily, because of the intervention of this Committee and Minister Prentis, we now have a terms of reference for the new working group that says that an autumn application is not routinely banned, but now we get into the trickier position of looking at what significant risk of pollution looks like and how we mitigate significant risk.

To conclude, this has been a disaster in terms of communications—a complete disaster. What we need to achieve very early doors is new communications out to the farming community to ensure that we are ready and able to apply manures this coming autumn within a framework that ensures that we are not a significant risk of pollution.

Q3 **Chair:** Thank you very much for that, George. I have to declare an interest. I do some arable farming and I apply to heavy, silty land quite a degree of organic matter in the form of both manures and some slurry in the autumn, and plough it in. I am now going to ask the professor to give me, hopefully, the right advice on how that can be done safely because I believe there is a good compromise to be had here and that is partly, dare I say it, why you have been invited here today, so no pressure. Over to you, Professor.

Professor Neal: I will do my best, Chair. I want to start by thinking about soil. You will not be too surprised—as I said, I am a soil microbiologist—that I am starting there. There are two things that I want to pick up from what we have just heard, and those are on crop and soil need, and minimising pollution.

The first thing I would say is that I doubt that anyone in this room or any of my colleagues would argue that our soils are not chronically depleted in organic carbon now, after years and years and years of inorganic fertiliser. To give you an example of soils that I know well, based on Rothamsted's long-term experiments, which are the longest experiments in the world, our inorganically fertilised arable crops have about 30 tonnes per hectare of organic carbon in the top 30 centimetres, which might sound quite impressive, until you compare them to the unmanaged woodlands and grasslands nearby, which have about 80 tonnes of carbon per hectare in the top 30 centimetres. Over that 170-year history we have lost more than half of all the organic carbon that should be stored in those soils.

I understand that my colleagues here have some very specific arguments to make about the practical issues they are facing. I would like you to think about this. When we talk about crop or soil need, I think soils are completely neglected in the way that this legislation is put together. That soil need is all about phosphorus and potassium, it is not considering that most of our soils are already in a very poor state. One could argue that most of our soils are completely deficient in carbon and that should be the strong enough reason and excuse for identifying a soil need—the soil need for carbon. At the moment, that is completely put to one side and not considered.

The consequences of not having enough carbon in our soils are many. Soil is a bit like a sponge. It does a number of very useful things for crop growth. It holds water, particularly during drought, which we are going to be seeing a lot more of as the country gets warmer and has longer, hotter summers. It provides a resource for the crops we are growing to access water during periods of drought. When it has very little pore structure in there because it has no carbon, it does not absorb water when it rains particularly heavily. Poor soil with low carbon floods very easily. It causes problems for people living downstream because it is not holding that water back and, of course, that is a source of pollution as well—the run-off of particulate matter, phosphorus particularly being run off because the soils will not absorb that water. Again, we are now seeing a lot more occurrences of very heavy rain and a lot of potential pollution, which again can be tied down to a lack of organic carbon in our soils.

Another reason why organic carbon is important is because it does not allow oxygen through the system and that is where you get denitrification. A lot of our ammonium nitrate fertiliser can be lost in anaerobic soils, producing nitrous oxide, which is not only a loss for the farmer but an environmental pollutant through greenhouse gas.

Q4 **Chair:** Professor, in order to get this a bit more into, dare I say it, layman's terms, if you put the organic matter in the form of manures into the soil, then that soil both absorbs the carbon but also absorbs moisture and water, so it actually holds more water in the soil?

Professor Neal: It provides a much greater reservoir for water and stores more as it drains. There is more storage space.

Q5 **Chair:** Therefore, we could argue that by not applying that in the autumn under the right conditions—your organic matter in the form of manures—then you could get more run-off and more leaching? Is that right or am I putting too many words into your mouth?

Professor Neal: It is a question of when you apply it. On many heavy soils it is not possible to apply it in the spring. The only opportunity is to apply it when you can apply it and till it straight in, as you said that you were doing, which also minimises the losses of ammonia to the atmosphere. There are lots of good reasons for applying it when the soil can take it and then putting it in soil straight away.

Chair: That is excellent, thank you. Stuart, please?

Stuart Colville: You invited me to set out my concerns, which I will do in just a second, but before getting on to that I did just want to emphasise the bit where we do not see a problem, which is the farming rules for water themselves. Although we have some issues with the interpretation, some of the issues that George has just talked through, I just wanted to pause briefly at the start to say that the farming rules for water themselves are an incredibly important new mechanism for controlling what is the largest source of pollution in inland watercourses today. I do not want us to lose sight of that. There is another thing that is specific to the water industry, which is they also protect some of our groundwater sources, which are used for drinking water production.

As George has outlined, although the rules themselves are a welcome new mechanism, we have two specific concerns about their interpretation: first, time of application, where we saw over the course of perhaps the last 12 to 18 months the Environment Agency take a particular view that would seem to preclude autumn spreading in almost all cases; and, secondly, this issue about acceptable risk and how that is defined and managed. That affects the water industry because we produce biosolids as a product from the waste water treatment process—over 3 million tonnes of biosolid product every year, which is spread on to agricultural land. Our concern is that some of the recent interpretation that we have seen of farming rules will stop one of the lowest risk and most beneficial products going into the soil where it should be, but also that it poses operational difficulties for the water industry, which has no choice but to continue producing a product that will otherwise have to be treated as a waste or stored or by some other means dealt with when it should be going into the soil where it can bring benefit.

Q6 **Chair:** It is a source of organic matter, which like you say will then be treated as a waste. You then have the problem of what to do with it, yet on our soils, applied at the right time, it should be hugely beneficial.

The other part of my question, Professor, was what has changed since last year? I do not know whether you want to also incorporate that into your answer.

Professor Neal: I am not sure I am qualified to discuss that, but both my colleagues here have mentioned that this is all about reducing pollution and I would completely agree with that. One of the problems with the way that this is implemented is that it only deals with one pollutant and one loss pathway. The consequences of stacking manure up in fields is that we create other pollutant pathways: ammonia into the atmosphere; phosphorus into ground water. If we are about minimising total pollution risk, we cannot just concentrate on one pathway.

Q7 **Chair:** Yes, that is a very good scientific point. George, from your point of view, you have been dealing with this and dealing with Ministers and naturally you put forward for us to have an inquiry, which we all very

much supported. What do you feel has changed since last year?

George Dunn: It is difficult to say, Chair, what moved the agency to change its position. As my colleagues have said, we are at one in looking at how we can minimise the amount of pollution that is coming out of agricultural land into our watercourses. That is something that we all agree about. We all signed up to the farming rules for water on their implementation and we all felt that we were on a journey in terms of understanding what significant risk was and how we minimise significant risk of pollution while we do all the stuff that we want to do for our soils. We want to switch out of inorganic fertilisers into organic fertilisers. We want to avoid pollution swapping. We want to deal with issues around ammonia and air quality. We all signed up to that.

Yes, if we want to have more spring applications, then we need to understand what the journey is to get us to those spring applications. What do we need for the slurry infrastructure within the country, for example? What do we need in terms of the technology to get us to that position? What about the workloads in the spring and how do we accommodate a move to spring? We are not going to get everything into the spring, but if there is a desire to move stuff to the spring, it is going to take a few years to get us into that position, bringing the science into play.

It just seemed that all of a sudden, and I do not know where it came from, Chair, there was a change of view within the agency, expressed in the way that the chief executive's letter to you put it, effectively no autumn applications of organic manures, which to our mind was a left turn in the road.

Chair: Absolutely. Indeed, in the arable sector it is very difficult to apply in the spring. Julian, I think that you wanted to come in.

Q8 **Julian Sturdy:** Yes, thank you, Chair. Like you, I have to declare an interest because we use farmyard manure on our farm. Luckily, we have spring crops so we can utilise it in the spring.

George, I wondered whether it is worth pointing out what the rules were in the autumn because there were some quite strict rules about where you can apply manure, distances from watercourses, certain slopes and so on. When soils are saturated you cannot apply. Is it worth for the inquiry pointing out where we were because a lot of work had gone on to make sure that organic manure and slurry was applied in the best practice through the industry?

George Dunn: The 2018 regulations set out all of that in some detail and where the significant risk issues are, absolutely. There was an understanding of that good practice and there were farmers who were up to the mark on that. They had FACTS and BASIS advisers who assisted them with that discussion. All of that was in play in the summer as we

had this change from the agency that was totally and wholly unexpected. To our mind, it was certainly unwarranted.

Q9 **Chair:** Professor Neal, on the point that Julian makes, do you feel those rules that were in place were a reasonable safeguard for applying manures in the autumn?

Professor Neal: I think they were. They were arrived at as a result of a lot of careful research about the losses of nitrate through water. I think they were, yes. Again, I do not think a lot of the concern for soil health was in that legislation, but that is something we could improve upon. Yes, I think they were, by and large, very good.

George Dunn: Mr Chair, I should just say that the fact that the regulations refer to the needs of the soil is an important consideration here. We are looking at the stuff that the professor is talking about.

Professor Neal: Yes, except it is described only as phosphorus and potassium. It is paying lip service to soil, but it is not really concerned with the health of the soil.

Q10 **Chair:** It is taking the soil and all its nutrients as a whole. That is your argument, isn't it?

Professor Neal: That is what we should be doing. My argument—

Chair: It is what we should be doing but we are not?

Professor Neal: Exactly. Based on RB209 we are just looking after the plant. That is very important, but soil is not just there to support the plant standing upright. It does all sorts of other useful things.

Q11 **Ian Byrne:** I will start with George first. I am confused, much like the farmers, by the sounds of your evidence. The Environment Agency told this Committee that nothing within its interpretation of the rules stops autumn application of appropriate organic fertilisers to improve soil organic matter. Why do you think its interpretation prevents autumn application?

George Dunn: I think that the letter you received from Sir James Bevan says one thing and then goes on to say another. It says, as you rightly say, that there is no routine banning, but then it goes on further down the letter to define what it means by the application of organic manures, and it defines something that is not in our mind an organic manure. It says that it is not routinely banned, but when you get further into the letter it describes something that is not what we would understand to be an organic manure that you could apply to the soil.

I think that Sir James Bevan's letter was misleading to the Committee in the way that it was written, but we now have reached a better position in the sense that there is an acceptance from DEFRA and the agency that at the very least the application of organic manures in the autumn for a spring need is part of the regulations. We need to bottom out this issue

about what is for the benefit of the soil and how you measure that, but we need to get into the nitty-gritty of how we prevent the pollution into the watercourses from the applications that we are making. That is where the real work needs to go on, not that they should be banned completely but how we deal with the significant risk point.

Q12 **Ian Byrne:** So some of the earlier confusion has now been cleared up and the people—

George Dunn: It is not yet in the public domain. This is work that has gone on behind the scenes due to pressure from this Committee and due to the meeting that we had with Minister Prentis, which brought the working group into a better position to look at these issues. I do seriously believe that the letter that you received from Sir James Bevan was misleading to the Committee in terms of what the agency's position was.

Ian Byrne: A point well made. Stuart, would you like to add anything?

Stuart Colville: I agree that there seems to have been a subtle change in perspective on spreading in autumn. Our discussions with the agency suggest that it has recognised that there are circumstances in which that is an appropriate thing to do with suitable controls.

The question then returns to how you define acceptable risk while trying to perform that particular activity. There are some specific issues related to biosolids, where we are putting forward proposals associated with the biosolids assurance scheme, which is a voluntary scheme that applies additional controls that will go above and beyond some of the statutory requirements. We are saying that it would be perfectly appropriate and, indeed, beneficial to conduct spreading in the autumn with those additional controls and safeguards in place. That is where the tenor of our discussions has got to most recently.

Ian Byrne: Professor, would you like to add anything to that?

Professor Neal: I would, yes. I think that a lot of this confusion that you are discussing that comes down from this supposed demand for crop and soil is based upon recommendations in AHDB's RB209. If you look at how that was put together, it is really recommendations for what is economically good for the farmer, not what we should be considering about the whole system. It may not be economically worth your while putting nutrients in at that point, but you could argue that the environment has other requirements that are not just about a bottom line. I think there is this confusion there because RB209 is probably being used in a way in which it was never meant to be used.

George Dunn: I would entirely agree with the professor on that point. RB209 is the industry standard document for dealing with nutrients within the agronomic system. It is a good document for what it was intended to be. If we are going to use it more widely in this environment, then we need to be looking at how we add to the knowledge base of that

document to ensure that it is fit for purpose for what we now want to use it for.

Q13 **Ian Byrne:** Within the new working group that has been set up and seems to be working more in the correct manner, what part of the interpretation from the EA needs to be clarified?

George Dunn: There are three things that we need to do. One is that we need to be absolutely clear that there is no specific ban on autumn applications of organic manures, which was what was in play in the summer. That needs to be communicated very clearly to the farming community very soon so that people can prepare for the coming season.

Secondly, we need to bottom out this issue that the professor has been talking about of what soil health is. We have other bits of government thinking about soil and soil health, particularly through things like the sustainable farming incentive. How do we bring those into play so that there is a systematic approach to soil, not just a siloed approach to soil, which is what we have seen to date?

Thirdly, how do we deal with the issue of significant risk? How do we put in place the necessary measures to ensure that we are not creating pollution problems? Let's be blunt. There are people within the farming industry who are not doing the right thing by the crop, by the soils, and are applying manures in ways that are inappropriate, and we would want to call them out because they are not doing anybody any good. Simply raising the regulatory bar is not going to stop them from doing what they have been doing wrong previously. We need the agency to be more gimlet-eyed in its enforcement of the existing rules, rather than simply applying a bar that brings everybody who is trying to do the right thing into play in that game.

It is about dealing with this issue that autumn applications are not routinely banned, ensuring that we have a better understanding of what soil health means and should be about in a systematic way, and dealing with the issue of how you minimise significant risk of nitrate leaching.

Ian Byrne: Thank you, good answer. Professor, would you like to add anything to that?

Professor Neal: I should warn you that I could talk the back legs off a donkey.

Chair: We will stop you before you do.

Professor Neal: I am sure you will, yes. There is tension here between what ELMS is trying to achieve and what the Environment Agency has to make decisions about.

Chair: Yes.

Professor Neal: Clearly, you are all aware of it, so I can shut up.

Q14 **Chair:** No, I think it is a good point. It is not taking the overall soil content, is it? It is just taking one particular nutrient, not the whole thing. You made the point that holding water in the soil with organic matter is an advantage, and it seems to have completely missed that one.

Professor Neal: If we are going to reward farmers for doing the right thing and behaving the right way, and one of those requirements is to sequester carbon in soils, that is where the tension comes from. This could prevent farmers who want to do the right thing from being able to do it. If they are now having to rely on payments for doing that, you are almost tying their hands behind their backs.

Q15 **Chair:** We will talk about the payments in a minute. I am conscious of moving on. Stuart, do you have any final points?

Stuart Colville: One very brief thing, if that is all right. I agree with the three points that George has outlined. The context around that that I would add is there is some urgency to this. These are not abstract questions that we can trundle through over the course of many months. This has been going on for quite a long time and for various reasons now we do need to find a solution, ideally in a matter of weeks rather than months.

Chair: Yes, we are hoping that this inquiry today will help to facilitate that.

Q16 **Mrs Sheryll Murray:** I would like to turn to the impact on the agriculture and biosolids sector. Could I start the first part of my question with you, George, and go along the three of you? Then, Stuart, I have one specifically aimed at you. If there are no changes made to the EA's approach, what impact will it have on your industry?

George Dunn: If we are continuing to operate within a framework where the autumn application of organic manures was routinely banned, it would grind things to a halt and it would drive people more to the inorganic fertilisers that the professor was talking about, which we know government policy is to try to avoid from a climate change and carbon perspective.

Obviously, we have a readily available nutrient in terms of organic manures from the livestock industry, which is a valuable resource for the soil. We have the biosolids, which again is a valuable resource for the soil. It would be a humungous waste to say that that stuff could not be used in productive ways and in ways that benefit the environment and provide public benefit at the same time. It would have huge consequences. Happily, because of the intervention of this Committee and Minister Prentis, we have moved away from that Armageddon scenario, but as Water UK rightly says, we need to move fast to get communications out to ensure that the industry is well placed for the coming season.

Mrs Sheryll Murray: Thank you. Professor, do you have anything to add

to that?

Professor Neal: No, I don't think so.

Mrs Sheryll Murray: Stuart?

Stuart Colville: In that worst-case scenario that you describe, I would see that as the most environmentally irrational outcome and operationally undeliverable, at least from my perspective. On the one hand you would have a loss of what we know is a really good material for soil, not just for crop yield but for all the environmental reasons that we started to talk about. There is also an implication for the water sector, of course, because at the moment 87% of the 3.1 million or 3.2 million tonnes of biosolid that we produce is distributed on to the land bank. If we were to stick with the worst-case interpretation of farming rules, we would lose about 60% of our ability to continue using that destination for biosolids.

There are a few things we can do to try to mitigate that, but ultimately we would be looking at around about, post those tweaks to try to find alternative outlets and so on, 1.5 million tonnes every year of biosolid with no obvious destination. At the moment, we do not have a solution for that increasing stockpile of material, which is one of the reasons why I mentioned this question about urgency. I would like to get to a solution as soon as possible.

Q17 **Mrs Sheryll Murray:** Thank you, Stuart. Could you answer this supplementary question from me? If biosolids cannot be spread on the land, what will happen to them? Are there alternatives to incineration?

Stuart Colville: There are some alternatives to incineration. At the moment, around 87% is spread to the land, as I mentioned. The sorts of things we can try to do in response to this kind of worst-case interpretation would be either to spread more to grassland, but there is a finite amount of that, or we can try to use pyrolysis and other advanced technologies to reduce the volume, but most of those are experimental. I think that I am right in saying that there is no commercial-grade facility that would be able to do that in Europe. Then we are left with a very small number of alternatives—land reclamation and so on—all of which are just a few per cent of what we currently do. Even pushing the boundary, we have very limited options there.

Ultimately, then, we are left with storage and incineration. We have this 1.5 million tonnes every year that we will need to find storage for. We have limited ability to store it on water company grounds because we do not have huge amounts of space to put this stuff, so we will need to find storage for that. If the interpretation does not change, then we will be driven towards incineration. Currently, there is very little margin in domestic incineration in terms of its ability to absorb new material, so we would be pushed into constructing new incinerators at significant cost and disruption, with all the environmental disbenefit that would flow from

that, which is one of the reasons why I think that would be an environmentally irrational outcome.

Mrs Sheryll Murray: Professor Neal, you look as though you are keen to add something.

Professor Neal: It was something that Stuart said. Stuart mentioned that one of the options is disposal on pastures and grasslands, and I wanted to point out that those soils are probably the soils in the United Kingdom that are already in the healthiest state. They will not sequester any more carbon. Although they may be a good source of disposal, we are not thinking about these products as just something that needs to be disposed of. They need to go on arable soils that are desperately in need of carbon.

Chair: Yes, to help those arable soils that have been depleted of organic matter?

Professor Neal: Yes, exactly.

Chair: Absolutely.

Mrs Sheryll Murray: George, so that you do not feel left out, do you have anything further to add?

George Dunn: I don't feel left out at all, thank you very much.

Chair: I do not think George has ever been left out.

Mrs Sheryll Murray: I did not ask that second part to George and I felt as though I was leaving him out.

George Dunn: Thank you very much, no. I appreciate your concern.

Chair: Geraint would like a supplementary.

Q18 **Geraint Davies:** Professor Neal, I and indeed the Chair have heard compelling evidence that plants that are grown in organic conditions are more nutritious, have a natural pest resistance and add value, and that increasingly we are going to see apps and the like where you can test a carrot to show the level of antioxidants and nutrients in it. Presumably, that is the direction of travel we want for added value in terms of trading and a competitive economy. Do you feel that the current rules being imposed by the Environment Agency that are, in essence, pushing us towards chemical as opposed to organic fertilisation are, in fact, pushing us precisely in the wrong direction?

Professor Neal: I am a little sceptical that the crops that are grown organically have a higher micronutrient content. In that sense, no, I don't think that there are problems. Organic producers are always going to make claims that they are including more nutrients in their products, but there is no strong evidence that inorganically fertilised plants have less iron than organically grown plants.

Q19 **Geraint Davies:** I do not know whether this Committee might want to investigate some of the evidence in particular emerging from the United States on this, but I guess the answer would be that if there is evidence, then that would be in favour of less chemical fertiliser and more organic fertiliser. Obviously, you are a sceptic.

Professor Neal: If there was evidence, then yes, that would be an implication.

Q20 **Geraint Davies:** George, do you have any feelings or views or knowledge of this in particular?

George Dunn: Obviously, we have members who farm organically, and we have members who farm without an organic certification. The food that they produce is, in our view, equally as good and readily available for the marketplace. We just want to make sure that our members have the right framework to manage their farms and their soils in a way that is providing private benefit through the food that they produce and the wider public benefits through soil health, clean air and clear water. What we need is a sensible framework to do that, whether they want to farm organically or whether they want to farm without an organic certification.

Q21 **Geraint Davies:** Obviously, there is a growing marketplace in organic production in any case. Have you any views to raise on the issue of incineration? Certainly, I have quite strong views about not just climate change but public health. There is a plan for the Government to double incineration by 2030, and it seems to me that if this went ahead this would again literally add fuel to the fire.

Chair: I think that question is probably better answered by Stuart because he was talking about it earlier.

Geraint Davies: Sorry, okay, over to Stuart.

Stuart Colville: Specifically on the risks that would flow from additional incineration?

Chair: On incineration.

Geraint Davies: Yes.

Stuart Colville: I think it would be severely environmentally detrimental and not the right solution to be burning a beneficial product as a waste that should be going into the soil as something that would benefit crop yield and ultimately soil health.

In the case of biosolids specifically, we have done some back-of-the-envelope calculations, and we think we would be looking at multiple additional facilities to handle the kind of volume that we are talking about. It would probably take 10 or 15 years, particularly going through planning and so on, to put these things in place and the cost would run into the billions, although the precise capital expenditure would depend

on the kind of incinerator that you need and so on. For all those reasons, it has to be the wrong solution for this particular product.

Geraint Davies: I would agree with that. Thank you.

Q22 **Derek Thomas:** Stuart, you have set out quite clearly what might be described as unintended consequences of this particular policy, but do you think the policy is effective at reducing the water pollution itself? Does it actually work if you put aside all the problems that you have established?

Stuart Colville: Farming rules for water, if implemented properly with the right controls in a way that is practically deliverable, should have a significant beneficial impact on the water environment. I think the question becomes what the detailed controls are and what the specific bits of guidance are that sit around the rules that make sure that they are implemented in a way that on the one hand is doable, but on the other has the effect that they are intended to have.

I will briefly mention the case of biosolids. We have our own assurance scheme that goes above and beyond statutory minimums, and that for me is how you implement both the letter and intent behind farming rules for water. Building around that assurance scheme with additional controls and additional strengthening would enable us to implement all of the intent behind farming rules for water without leading to some of the perverse consequences that we have started to talk about.

Q23 **Derek Thomas:** Professor Neal, I was glad that you mentioned run-off because I had tried to get that into the questions early on. To avoid all that Stuart and others have set out as the problems, is the alternative to work our land better so that we avoid the run-off and effectively potentially stop the pollution that would be caused by this organic material? Is that how we should be looking at this?

Professor Neal: Yes, and all that reduced run-off to some extent is a function of a much healthier, more porous soil system. The biosolids or the organic matter is part of that solution. Yes, I would completely agree.

I would also say that the focus just on nitrate is neglecting our ammonium pollution and is neglecting our phosphorus pollution. It is very effective at doing that, but when are we going to be worried about everything? We are worried about it coming out the back of cars, but we do not seem to be worried about it coming out of piles of manure dotted across the landscape.

Q24 **Derek Thomas:** My concern is that the water runs off and into our rivers and streams, and the sea. We do not ever think about how we stop that happening and protect the soil erosion and improve the quality of soil. We worry about what is in the stuff that runs off. Is that fair?

Professor Neal: It is, but it is an easy solution to fix: maintain soil with a cover on it at all times, so green manures and cover crops. Leaving soil

bare, especially over the winter, is one of the worst things that anyone can do to create run-off.

Q25 **Derek Thomas:** Can I come to you, George Dunn? Do you accept that there is a need to reduce water pollution?

George Dunn: Absolutely, yes. I would be completely naive if I came before this Committee and said that we did not have a problem. There is a problem, and we need to resolve it. We need to find a way to collegially resolve that between farmers, water companies, policymakers and policy implementers.

Your question was whether you stop the risk of pollution if you stop applying this stuff. Yes, of course, but do you stop the risk of being run over by a car by not crossing a road? Yes, you do, but you still have to cross the road. Those types of corner solutions are not helpful in trying to deal with this issue in the real environment. We need the focus to be around how we avoid significant risk of pollution, not just nitrates but, as Professor Neal has said, phosphates and ammonia. How do we look at this in a systematic way to find a workable solution in a practical environment that is well communicated to farmers and allows them to apply this stuff on a reasonable basis for the crop need and the soil need without creating a significant risk of pollution?

Q26 **Derek Thomas:** There is definitely a need for change and the Environment Agency is not wrong to try to address this?

George Dunn: It is not wrong in trying to address it. It was wrong in the approach that it took to effectively overnight attempt to stop a standard practice of applying organic manures in the autumn by dint of their own thought process rather than reliance upon the regulation.

Chair: Derek, I am sorry to interrupt you. Can I bring Kirsty in for a quick supplementary and then you can go on to the next question?

Q27 **Kirsty Blackman:** Thanks very much, Chair. Specifically, is there a material negative impact on water quality caused by autumn spreading? Is that a thing? I am getting that there is a huge amount of negative impact caused by not autumn spreading, but are there negative impacts on water quality caused by autumn spreading?

George Dunn: Again, it would be naive for me to come here and say there weren't because there are inappropriate practices and there are things that happen by accident as well that have not been planned for, which is why we are saying to the agency and to DEFRA that we need to have a proper dialogue around how we minimise that risk. What are the measures? What is the science? What are the practicalities around how we reduce that? It can be done, and it is done on a regular basis where there is not pollution. We need to learn from those scenarios and ensure that they are applied more widely.

Q28 **Chair:** Professor Neal on the science, please?

Professor Neal: I have said it before, but it is about balancing all the risks, not just the risk to water. That is what I would say.

Stuart Colville: Chair, do you mind if I just interject very briefly? The AHDB, with other stakeholders, regulators, academics and so on, has produced a report that looks at the comparison between autumn spreading versus spring spreading, and the effect on various metrics and pollutants as a result of making that shift. It found that there would be a benefit to nitrate leaching, I think, of 1.5% of current agricultural losses by moving from autumn into spring, but at the same time it would increase phosphorus losses by about 5%, increase ammonia losses by about 2%, increase sedimentation, and so on. The key question for me is: how do you try to grab that 1.5% benefit to nitrates, get as much of that as possible, without getting some of these perverse consequences that would otherwise ensue? I think that is possible with the right controls in place, which looks a little bit different to some of the interpretation that we have seen to date.

Chair: Good point. Carry on, Derek.

Q29 **Derek Thomas:** That is helpful. George, can I come back to you? You kind of referred to bad practice. I do not want to misquote you. Are we talking about a few bad actors across agriculture in parts of the country or are we talking about the pollution as a general problem that the Environment Agency is trying to fix?

George Dunn: I genuinely do not believe that there is a widespread problem of people wanting to create the circumstances within which they are polluting the environment. We are talking about people who are desperately trying to do the right thing in difficult circumstances on an ongoing basis. What they need is good advice, good information and good support. They need to have access to FACTS and BASIS advisers who can assist them through that. We should be ensuring that they have access to that advice and that there is an opportunity for them to do that within the wider policy framework that we are talking about.

I do not believe that there is a widespread sense that there are bad actors out there doing stuff because they can get away with it. There are individuals, as in every walk of life, who will take chances and will try to do things that they should not be doing, and we need to come down heavily on those individuals who flout the rules because they are not providing any benefit for any of us. Fundamentally, the vast majority of farmers want to do the right thing by their crops, by their land and by their wider environment.

Derek Thomas: Thank you. I do not know if anyone else wants to add anything.

Professor Neal: I will just add that we are talking here as if all organic matter is created equally, and it is not. There is a wide range of available nitrogen that is in a variety of different organic matter put into soil. There

is a lot of room there for nuance in how we control losses to water while still allowing organic matter to be put into soil.

Derek Thomas: Thanks, that is brilliant.

Q30 **Chair:** A much more nuanced approach is needed by the agency, is that right?

Professor Neal: What I think is that we need a national strategy about how to use organic matter. The reason we are all here today is because we do not have a national strategy. If we did, everyone would know what the rules are. Everyone would know what they need to do. In the absence of that, we end up having this rancour that should not exist because we are all trying to do the same thing. Everyone in this room and behind me is trying to do the same thing.

Chair: They will put you in the Foreign Office, Professor. Thank you very much.

Professor Neal: Parties are good in the Foreign Office, aren't they?

Chair: I do not think they will put me in the Foreign Office, don't worry about that.

Q31 **Kirsty Blackman:** Starting with Professor Neal, in terms of the way that the Environment Agency has looked at these rules and the wider implications of them—so not just the implications of what is happening for farmers on a day-to-day basis or even what is happening to the water industry in terms of the biosolids but thinking about the wider environmental issues that there are—what are the implications for air pollution or biodiversity, for example, of the Environment Agency's interpretation of these rules?

Professor Neal: I will start with air pollution. One of the major pollutants lost from organic matter that just lies around because it cannot be applied is ammonium losses. That is a critical plant nutrient so losses of that not only create pollution that we are very worried about because of our own human health, but that loss of nitrogen to the atmosphere also means that lots of money and effort is then put into using the Haber-Bosch process to bring it back out of the atmosphere again, put it in a bag and send it to a farm. It is a very inefficient way of using nitrogen. It is a very environmentally expensive way of using what is a natural product that should be in the soil and is of great benefit when it is in the soil. I agree that there are issues about when it gets there, but as far as air pollution is concerned that is one of the biggest ones.

From poor quality soils we also lose a lot of nitrogen as nitrous oxide. There you are not looking at human health but an environmental issue to do with global climate change. There are lots of issues to do with the loss of gaseous emissions from piles that are just sitting around. Your second question was about?

Q32 **Kirsty Blackman:** It was about biodiversity. We have received some evidence saying that an increase in chemical fertiliser threatens biodiversity in the soil. What are your views on that?

Professor Neal: I do not think using inorganic fertiliser necessarily threatens biodiversity. What we do know from our own work at Rothamsted is that a good, complex diet for soil, just like you may have, has a great effect upon the microbial communities there, not necessarily the diversity of the species but the number of genes that they have on their genome. We can lose about 1,300 genes per microbial genome in soils that are abused. That is a capacity to do functions that are very useful for the environment. There are many ways of thinking about diversity but clearly not getting a rich diet into soil—and farmyard manure is a good, rich diet—does not sustain that diversity of function that the soil can perform. Yes, there are, but there are many ways of describing that diversity loss.

George Dunn: I think that this speaks to the need for us to take a systematic approach. How do you stop traffic around junction 15 on the M25? Shut junction 15 and junction 14 on the M25 and you will not have any traffic, but you will allow it to spill over into other parts of the system. Here we have a gimlet eye on a particular issue, which is nitrogen, when in fact, as the professor says, we need to be looking at this much more systematically to ensure that we are doing the right thing in a wider environment. The siloed approach that we see so often from government— and here is a clear example of that—is not doing any of us any good.

Q33 **Dr Neil Hudson:** Thank you to our witnesses for being before us today. It is a very interesting session.

I want to come first to Professor Neal and get on to the subject, which he has touched on in some of his previous answers, of soil health and the benefits of some of these processes. I declare an interest as a constituency MP for an area of significant farming footprint. Having a vibrant farming industry is so important to our area in Cumbria, and having healthy soils and healthy waterways as well, but equally you will be well aware that Cumbria is at the forefront, sadly, of some of the flooding episodes that we have. I was very interested in the evidence that you touched on about the importance of soil health for potential flood mitigation as well. You have answered this a little bit earlier, but what would be the impact of the current interpretation of the rules on soil health?

Professor Neal: I would break it down into three. The first is the capacity for soil to hold and look after water. That has social issues, and it has issues to do with how crops behave. There is also this detrimental effect upon atmospheric pollution, and nitrous oxide from arable soils is a big problem. It is a very powerful climate change gas, which is also long lived. So, there is that, too, and then you also have this whole issue to do

with a loss of biodiversity, a loss of microbial diversity, as well as invertebrate and fungi diversity in soils.

This whole concept of health has very human issues as well. We know that for rain-fed crops in the United States—maize predominantly—and the cost of insurance claims due to drought, if you increase the organic matter by 1% in soil you can reduce the claims of losses by 36%. Yes, soil health sends tendrils into all parts of the environment and our society, and carbon is a main driver for that soil health. I would encapsulate it like that.

Q34 **Dr Neil Hudson:** I am focusing in on the flooding mitigation and protection. Can you give us any more direct evidence to say that healthy soil will potentially mitigate floods?

Professor Neal: I guess the best example I have is from our own soils at Rothamsted. We have a wide range of soils, some with less than 1% of carbon, some with well over 4% of carbon. There is probably twice or three times as much porosity in the soil that has a lot of carbon in, so you can very roughly equate that to twice or three times as much capacity to store water when you get inundation by heavy rain. Of course, the fact that there are more pores there means that water absorbs into the soil much more rapidly and readily. That is the direct route to mitigating flood risk because you are increasing that storage space in the soil.

Dr Neil Hudson: Thank you. That is very helpful. Healthy soil is potentially helpful soil as well in many ways?

Professor Neal: Absolutely, yes.

Q35 **Dr Neil Hudson:** I will come to you, George, in a minute, but first I will stick with Professor Neal. We have talked about the funding changes for farmers moving forward and we have talked about the sustainable farming incentive and so on. How does the interpretation of these rules align with the Government's aims with the SFI? We have heard the Secretary of State before us and in public talking very much, importantly, about the importance of soil health and that people will be rewarded for improving the health of their soils. How does the interpretation of the water rules square with that—that farmers are trying to improve the soil and ultimately will be rewarded for making the soil healthier by improving and increasing the organic content? How do we square that?

Professor Neal: I do not think we can. Right at the centre of that legislation is the requirement for farmers to do something about sequestering carbon in their soils and an active encouragement to measure the carbon that is in their soils. That gives a clear path that at some point in the future there may be regular measuring of carbon in their soils and that the reward will come about due to a gradual accrual of organic matter. If you are farming in soils that are too heavy to apply organic matter in the spring, that effectively completely prevents you if you are not allowed to apply them in the autumn when your soil may be

more structurally able to cope with large tractors moving over it. How do you access the ability to sequester carbon in your soils if you are in that predicament? It not only stops a farmer from doing the right thing for all the reasons we have discussed, but it also completely prevents them from accessing any of that funding. That is my real concern here. The two bits of legislation are cancelling each other out.

Q36 **Dr Neil Hudson:** I guess that shows the importance of what we are trying to do today, and what these working groups are trying to do to square the circle and move forward so we can all work together. As you said earlier, we are trying to do good things and we are trying to do the same things; it is about how we get there.

Can I come to you, George, then, from the farming perspective with that question about the challenges of adapting to the new funding schemes if there are interpretations of rules that are making it harder for people to do that? What would your perspective be on that?

George Dunn: Absolutely, Dr Hudson, that is exactly where we are on those discussions with the Government. That was why Minister Prentis got so exercised about this particular point, given the wider aspirations of government to find a new way in which those public benefits for public good could be funded and brought into the system.

When we listen to the polemic around what we can do in the context of being outside the European Union, we can think about things in a different way. We are not tied by the European rules and regulations. Everybody that I have spoken to thought that the NVZ directive in 1991 was an appalling piece of legislation that was applied badly within the UK framework, but it almost seems like the system wants to go back to those much-loved pieces of legislation and pick up the playbook in order to continue to play those things through in the context of being outside the European Union.

We have the opportunity to be much bolder and braver, and systematic in our approach. Sadly, we have not seen much within DEFRA or the agency working with DEFRA to see that approach being taken forward, and there is the challenge that we hear from the professor: where is the strategy for nutrients? We should be in a good position to produce that, but we are not. SFI has been produced in a silo over here and it almost feels like landscape recovery and local nature recovery is being developed in a silo of its own as well. Bringing in these wider issues is vitally important, in our view.

Q37 **Dr Neil Hudson:** Before I hand back, Stuart, do you have anything to add on that in terms of the differing agendas? We want good things, we want the public goods, and we want the same things, but it is how we get there. From your perspective from Water UK, what would you say to that?

Stuart Colville: I think the key word that George used was a systematic approach. It is a classic example of going after one good or one benefit and potentially risking others. I don't think anyone can blame the Environment Agency for taking agricultural diffuse pollution incredibly seriously and specifically nitrates as well because that is clearly something we need to do something about.

The issue comes when you look at it in the round. Whether it is what it is forcing the water industry to do with capital expenditure on new incinerators, whether it is some of the issues that the professor has raised around putting structure and carbon and so on into the soil, we have to take that rounded view and come to a position that tries to get as much benefit as possible, not solely focusing on the one issue but assessing things in the round.

Chair: We have a supplementary from Julian and then one from Kirsty.

Q38 **Julian Sturdy:** I wanted to come back to Professor Neal. In answer to Neil Hudson's question, we were talking about the integrated farming policy and the drive to improve soil health. When we are talking about organic matter and improving soil organic matter, can you outline what is the best and quickest way to improve soil organic matter? Obviously, there is a lot of talk about cover crops, the incorporation of biomass from cover crops and so on. I know water companies have done a lot of work on cover crops as well. They have other environmental benefits as well, but would you say that they are as good at increasing organic matter as actually putting physical organic matter back into the soil?

Professor Neal: Those sorts of questions are right at the heart of the research I am doing right now. I would probably say that we do not know enough about how different forms of organic matter behave when it is put into soil, to really be able to answer that unequivocally. My own hunch is that organic matter that have already gone through a process of digestion—for want of a better word—so whether that is as farmyard manure or as human biosolids, is probably in a state where it can be used much more effectively by the soil microbiota to turn into that structure that we were talking about.

Green manures are excellent, but they probably take longer to break down, and so there are undoubtedly going to be rates at which improvements are accrued but I am not sure that we have sufficient evidence to answer your question very specifically to say, "This is clearly much better than this because you only have to wait two years instead of 10". That data does not exist, but I think it is very important because it addresses some of these concerns here and it addresses the issue of having soils that have not enough carbon and we need to understand what is the quickest way of getting them back to where they should be.

Chair: Thank you. We will be very interested in your research, Professor, when you finish.

Professor Neal: It would go much quicker if you gave me more money.

Julian Sturdy: It is the wrong Committee.

Professor Neal: I know it is the wrong Committee. Someone in here must have some power and persuasion.

Chair: Duly noted. Over to Kirsty, please.

Q39 **Kirsty Blackman:** A quick one to Professor Neal on what he is talking about, about carbon. You have spoken an awful lot about carbon. It seems to me the key thing that you are discussing is that carbon is being put into the soil. The Environment Agency's farming notice for water seemed to not give that level of primacy to carbon or to carbon content. It talks about other things much more importantly. Which is the proper view? Professor Neal, are your views unusual? Is it unusual to give such a high level of importance to carbon or is it just odd that the Environment Agency has chosen to give much less of importance to carbon in their decision making here?

Professor Neal: I think it has been forced into that position because of the demands that society places upon having clean water to drink. I think the Environment Agency has a difficult job to do and I am sure that if you were to speak to every single person in the Environment Agency, they would tell you the same thing as me: that carbon is critically important in soil. I do not know anyone that says it is not. Our great-grandfathers and grandmothers knew that organic matter was—this is not a sudden revolution in thinking, but there are practical issues about how it is used, and it can be abused.

So, no, I do not think this is anything new and I certainly hope that the Environment Agency is not disagreeing with anything I am saying here. I just think it is trying to do a very difficult job and trying to keep everyone happy, and that is very difficult.

George Dunn: I would not be so apologetic about the Environment Agency's approach here. We elect Governments and we have Government Departments who are supposed to be making these difficult decisions and working for solutions in the round that balance risks, balance public benefits and, yes, there is an issue around nitrates in water, but the agency needs to be mature enough to look at that in a rounded way rather than in the siloed way that it has done to date.

Chair: Yes, and naturally very much part of the DEFRA family as well, so that is what has to be taken on board I think.

Q40 **Robbie Moore:** Before I start, while I don't, I just want to declare an interest in that my family are farmers as well.

I suppose this is the last question of this panel so I want to ask some questions about how we have reached this situation, particularly with the points that George has picked up with communication interpretation by the EA and how we go forward from here in terms of working with the EA

to have a positive impact on what we all want to achieve, which is improving soil health but also ensuring that water quality can be as best as it can be without having excess pollution and run-off.

If you look at a field anywhere, the makeup of soil is very different across wherever it is from one part of a field to another part of a field. There seems to be a different interpretation of the regulations by the EA compared to the industry. How have we managed to get to this point? George, do you want to start off?

George Dunn: I can. I may be at risk of repeating myself because I do not know how we made the left turn in the summer of last year to say that an autumn application for organic manures was routinely going to be a thing that would not be allowed. That came only from the agency and only from correspondence from the agency. We began to see letters and correspondence being issued by the agency that was making that position very clear. When we had the first two meetings of the working group, which was established to look at this issue, the agency was very clear that that was its position—that it could not see how we could comply with the farming rules for water in an environment where we were applying organic manures in the autumn for a spring crop need.

Frankly, I cannot answer your question as to what changed but what I can say is that when we discussed it with the DEFRA Ministers, they did not consider that there was a change. They were always of the view that an autumn application of organic manures was part of the standard practice within the industry, and we needed to be looking at issues of significant risk, so the agency seemed to be out of step with everybody on this particular point, and I don't know why that came about.

Q41 **Robbie Moore:** I want to pick up on the letter that you referenced that the Committee received from Sir James Bevan because I read that letter and I could not understand it, I was unsure about what it was exactly meaning. Therefore, if a Committee cannot, I dare say, how can your average farmer on the ground understand the intentions of the Environment Agency? How do we get over this hurdle to be able to then start moving forward in a practical way that enables the objectives that all of us want to achieve going forward?

George Dunn: I genuinely believe that the dial has moved on that. It has moved because of the work of this Committee, the Clerks of this Committee, and the work and time that Minister Prentis has put in to looking at this issue.

Now we have a new guidance group, established under the chairmanship of DEFRA, not the agency. It is good to have the client in the seat as opposed to the agent in the chair. We have a terms of reference that has been agreed with the members of that guidance group to look at the real issues of concern here, which is: how do we ensure that we are reducing the risk of pollution from a continued autumn application of organic manures for a spring crop need and for the soil health? At the same time,

we are up for the conversation about: if we do have to move more to the spring how do we do that and how do we do that without creating the pollution swaps that we have been talking about just recently?

That is a very long-term approach, so I do genuinely believe that we are in a better place than we were at least a few weeks ago. The issue that we now have is that all of this is happening, in a sense, behind closed doors, and we need to get a communication strategy out there fast, so that the farming community and the water industry know what is going to happen for the remainder of the year come the autumn.

Q42 **Robbie Moore:** I want to get to the bottom on moving forward with communication with the wider industry, because there will be many arable farmers out there thinking, "We cannot apply organic fertiliser on our land because we have heavy clay soils. We cannot do that during the spring periods when the ground is more wet. We can only do it in the autumn period". Then we have had that confusion from this growing season. At what speed do we need to be getting to so that there is that much more reassurance going into the next growing season?

George Dunn: As Stuart said, it is weeks not months and we literally need to move with that sort of speed.

Robbie Moore: Do either of you want to add anything?

Q43 **Chair:** Yes, Professor, you talked about compaction as well because my type of soil is similar to Robbie's. We compact it in the spring and then, if you did get a lot of rain, you would get a huge run off because you have compacted the soil. The water is not going to go into the soil. It is going to run straight off. Perhaps you can describe a little bit more scientifically than I have what has happened.

Professor Neal: I don't think it needs a scientific explanation. We have already discussed how you can think about soil as a sponge. Running heavy machinery over it effectively squashes that sponge. The collapse, that pore structure that is holding water that we discussed, and it takes an awful long time, in fact some soils will never recover from that. What I mean by "recover" I mean to get back to a similar porosity that is storing water. If you squash all that porosity out it is not going to store water. It is not going to allow water to penetrate into the soil, which is why you get flooding. There is evidence that soils that have a lot of organic matter in are more resilient to that collapse, so again carbon has a beneficial point there as well.

I have my own opinions about how we got to this place here and I touched on it earlier. I think we got here because we don't value soil. I don't think that nationally we value organic matter that should be going into soil. I am sure that if the EA was told that it had to make sure every farmer had at least 2% of organic matter in their soils that it could rustle up some legislation that would make that happen. They have never been asked to because organic matter and soil are always left out of these discussions about how we farm. It is always about nutrients and crops. I

think we need to redress that balance and then discussions and arguments like this will not happen because we all know what we are driving at and what we are targeting. I think that is how we got here, and I think that is how we move away from it as well, a national strategy.

Q44 **Robbie Moore:** Is what has been outlined enough to get us into a good place in a quick timeframe?

Professor Neal: Soil moves very slowly. You know that. Not at the speed that Stuart suggests, so we need to prepare soil for the future, but we need to act right now with what Stuart is facing. If we don't sort this out, soil is going to be stuck in a doom loop where we can never get past the situation that we are in now because legislation prevents us from doing it. That is my real concern.

Chair: Thank you, gentlemen. It has been a very good session. I think what we have brought out today is the value of organic matter in the soil, the fact that we don't actually value our soils enough. Professor, you have really brought that home to us, and I think, George and Stuart, together we have had a very good panel. We have some very good points to put to our next panel as well and we have some very good points from your evidence today to put not only to Ministers but to this working group that is looking at getting a solution to this, because we want a solution, and we want to be able to apply organic matters to our soil to build up the carbon in them. The message has come over loud and clear, so thank you, gentlemen, very much.

Examination of witnesses

Witnesses: Kevin Austin and John Leyland.

Q45 **Chair:** Thank you very much for joining us in our second panel this afternoon. You were here to listen to the first panel, so some of what we ask you I suspect you will have heard before, but we very much welcome you here. John, would you please, for the record, introduce yourself, and then Kevin, please.

John Leyland: Of course. Good afternoon, everybody. It is great to see you all in real life. I have been with the Environment Agency for nine years. For the last four months I have been devoting my focus to helping the agency solve some of the problems such as we are discussing today, with a focus on water and water quality.

Kevin Austin: I am deputy director for agriculture, fisheries and the natural environment in the Environment Agency, and I have been with the agency for four years.

Q46 **Chair:** Thank you very much both for joining us. My question to you both is: does the interpretation of the Environment Agency require most farmers to stop spreading organic fertiliser in the autumn? Who wants to

start?

John Leyland: Perhaps I will start. The first thing I would like to say is that we agree with huge amounts that the previous panel has just said. I hope that the intervention of this Committee will help us find that we have a lot of common ground, and I hope that we will be able to mainly clear up the disagreements, either through clarification or through some of the working groups that we already have.

I would like to say that water is essential to life and the economy, shaping everything from the cost of food and drink to urban planning, where we live and where we work. With that in mind, we are slightly confused, and happy to clarify that there is nothing in the Environment Agency's position that bans the use of organic soil materials and manures in the autumn where there is a crop need.

Q47 **Chair:** I will try to be kind to you. Was there a breakdown in communication? Because, certainly, as far as George Dunn from the Tenant Farmers Association and many of us as farmers—and I am a practical farmer and I have already declared my interest—feel, we are going to be stopped from spreading organic matters in the autumn. I have soils that will not spread; you will not spread it on arable land very easily in the spring because of compaction and other things. Can you clearly say that that is not the case?

John Leyland: I will come to Kevin in a second on that. You started off, Chair, around communication. I have taken a look at some of the communication that happened around 2017-18 when farming rules for water came into force. I agree that there could have been better communication and there can still be better communication. In fact, I am sure Kevin will say that he has spent all of his time in the last 12 months personally appearing in front of groups, such as the Tenant Farmers Association and others, to try to personally explain and deal with any misunderstandings, and to rule out anything that we agree on to try to focus down on what we don't agree on. If I could go to Kevin to try to give you a simple answer to your question.

Kevin Austin: It would be helpful in this session if we can tease out the difference between interpretation versus what the Environment Agency has done in terms of implementing the rules, because obviously we receive a regulation from the Government. We do not draft it. At some points in the previous session, I think there seemed to be some confusion around that point, although I am sure not among Members here.

We have to interpret the regulation. We do a legal piece of work around that: where we think it comes from; what we think that means. We clarify that with the Government who confirmed our interpretation but then we decide how we implement the regulations. That has to be done taking into account some of the wider considerations that we talked about in this panel here about soil, about the potential risk of pollution, swapping and trade-offs.

A really important point to clear up is that we have not changed the rules in the last year. What happened in the last year is that we were requested by Water UK in October to issue what is called a regulatory position statement. For the benefit of doubt, a regulatory position statement is a tool used to enable us to apply a degree of discretion and relaxation in how we implement a piece of legislation. Unfortunately, it is true—I think this comes back to the communications point and one that George made earlier—that that landed in a way that I think a number of farmers out there, who probably were not necessarily fully aware of the farming rules for water or, indeed, rule 1 at that juncture, thought that a new rule was being introduced, and made them also think that it was a new rule that was going to cause them immediate concerns this autumn.

So, there is a communication issue here, but we have not changed the rules in the last year. The regulatory position statement was introduced to enable greater flexibility. Over 4,000 farmers benefited from that regulatory position statement in the last autumn and enabled us to enable significant amounts of organic material to go on to land in the autumn that has just passed.

Q48 **Chair:** Do you accept, as we have been talking about this afternoon, that on many soil types, especially heavier soil types, it is much better to be able to travel in the autumn to spread, and that as long as you don't overspread, you are not close to watercourses and so on, it is a good time to spread?

I think what has got the farming community particularly worked up in a way is the fact that we feel that if we do spread the right amount at the right time in the autumn, on the right types of soil, we are actually doing good to our farming soils. We are not doing bad. We are not doing bad practice—my Somerset coming out now in my English—but, seriously, I think that is the issue. Do you accept that there is a case that, like I said, spread properly in the autumn a good organic matter to increase the carbon in the soil that will then enable those soils to hold more water during the winter does have some benefits? Would you accept that?

Kevin Austin: One of the difficulties is that there has been quite a lot of generalisation about spreading of organic material. You will know very well that there is a very diverse range of organic materials that you can tackle. I will come back again to what I said about risk-based implementation, what the EA has actually done.

So, 2018-19, we were mostly out there. We were still dealing significantly with slurry storage issues and out talking to farmers around that. In 2019, we started to get on to the farming rules for water. What we were focusing on is we will go first where we think there is the biggest risk of water pollution, understandably. We don't have that many staff. We do about 350 farm visits for water a year. In going out, we focused in that first year very heavily around the anaerobic digest state sector. I know, Chair, because I have spoken to you about it previously, that that is a cause of personal interest.

The anaerobic digest state sector is often taking some farm wastes, some food wastes, and produces a product—an organic fertiliser—which is very, very high in readily available nitrogen. Professor Neal touched briefly earlier on the fact that there are differences in types of materials. If you put down an organic material with very high readily available nitrogen in the autumn, almost certainly the vast majority of that nitrogen will end up in a watercourse if there is not a crop there in situ to take it up.

In the past we have had a lot more oilseed rape grown in winter. For various reasons you will know that oilseed rape grown in winter is not out in so much quantity anymore. What we are picking up is a lot of situations where—

Chair: I do not think we will get into that this afternoon but, yes, carry on.

Kevin Austin: Yes. I think the point being is that what we were seeing is assumptions about how spreading had taken place with a crop in winter that was very, very high in nitrogen demand. There had been changes in the crop cycle and the crop types, as there were bound to be in farming over periods of time, and there was a degree of complacency in terms of, "We are just going to carry on doing what we have always done".

Q49 **Chair:** Sorry to interrupt you. I understand the point you are making, and I think some of the leachate that comes from some of these biodigesters is particularly strong. My question to you really is, surely, we have rules that should control some of that rather than saying, "All organic matter, all farmyard manures are treated the same". That is where I think that perhaps there needs to be a different interpretation. Certainly, I have talked to Sir James Bevan about this particular issue.

Kevin Austin: There could be a case for more specific rules for some of the highest risk products. We talked about sewage sludge earlier today. We think sewage sludge from a nitrogen perspective is generally speaking a good product, and in answer to the question earlier: certainly, the Environment Agency wants more carbon in our soils. We are definitely not in disagreement with that. Sewage sludge is relatively low in readily available nitrogen. We think there is a case if properly applied in the autumn that you could continue to go there.

At the same time, there are other components in sewage sludge, for example, microplastics, and there are issues around antimicrobial resistance. There are other chemicals used in the treatment that are fairly new, novel chemicals, so we would like to see sewage sludge moved to a proper permitted EPR—environmental permit regulations—situation going forward.

The difficulty in terms of the farm waste is that there is a broad spectrum even there. You all know that in pigs' slurry—fairly fresh pig manure—we see leachate rates in excess of 100 kilograms a hectare potentially arriving in the watercourse if it is applied in the autumn when there is no

crop. There are also huge differences between the type of soil it is being placed on. If you are spreading it on a sandy soil, it is much more likely—again, if there isn't a crop in situ—to end up in the watercourse very quickly. Heavy soils are a different situation again.

I don't think it is so much in the case of the farm materials having a particular regulation for a particular material, and that is why in some ways the farming rule for water is quite helpful because it is outcome focused and gives this option to look at significant risk.

Q50 **Chair:** I don't want to hog all the questions. I just want from you that you are prepared to sit down and look at a much more nuanced approach. We accept that there are different types of material being spread—different types of nitrogen, different soils, all of these things. I feel that what has been proposed so far, certainly the farming sector believes, is a very blunt tool and not properly nuanced. Can you assure us this afternoon that you will look much more at the soil types and the type of material that is being spread, rather than just saying "Thou shalt not"?

Kevin Austin: This is exactly the conversation we had before the regulatory position statement came in. Back in June we had a smaller workshop with the farming and water company sectors. I actually said, "If you need a regulatory position statement in the short term, we will offer that to you. What we would like to develop with you is a risk-based approach, which is around tackling those materials that offer the highest risk and where they offer the highest risk". Because a lot of this is geographical too. You will know that we are under a lot of pressure in terms of the neutrality question—these issues of catchments, where the protected sites within them are failing to reach favourable conditions, and that is impacting on planning consents too.

There might also be a case for slightly tighter rules where you have particular geographical and place-based problems too but, yes, in answer to your question, we are up for a risk-based approach.

Chair: Right. Kirsty, you wanted a supplementary.

Q51 **Kirsty Blackman:** Yes, just a quick follow up on that. The NFU says that farmers and members do not understand what soil and what crop need is. Have you defined crop need, and if you have defined it and people still don't understand it, is there a case to have an additional definition or to communicate that better with people?

John Leyland: I think it is part of Kevin's point previously: we have tried not to be overly prescriptive. We have tried to take a risk-based approach so that the farmer can make an interpretation. Soil samples and nutrient tests would help to define what a crop need is.

We are always there as a source of support as well for farmers. Indeed, since farming rules for water have been introduced, we have worked with hundreds of farmers all across the country to help them with a particular

situation that they have: if they need expertise, if they need interpretation, if they need pointing in the direction of good practice. Indeed, to date it is worth mentioning, Chair, that we have not taken any enforcement action against any farmers, even if they haven't been in compliance with farming rules for water. We have taken an advice-led and supportive approach, using incentives and so on.

Q52 **Kirsty Blackman:** You have not defined it because you do not want to be prescriptive, but do you not understand that saying, "You can autumn spread if there is a crop need", without defining crop need, makes it very difficult for farmers to make that decision without worrying that they are going to be on the wrong side of—

Kevin Austin: Do you want me to come in, John? I think the point is that, because of the fact that you have all of the different types of organic material, you have different soil types, you have different types of crops, the onus is placed on the farmer to refer to the agronomic manuals, perhaps get advice from an agronomic adviser first, which we strongly recommend, and then to do those calculations to say, "Is what I am putting on the land going to result in a surplus of nutrients, in which case there is a risk of pollution, or is it going to meet the needs of the crop that is going to be growing?"

Q53 **Chair:** Without putting you in too difficult a position, it is a fairly open secret that there has been an interesting situation regarding DEFRA perhaps, yourselves, as the Environment Agency, and the Minister for Agriculture, Victoria Prentis, who has taken a very keen interest, as have I and others. We have seen a change in the chairing of the working group to DEFRA rather than yourselves. Do you think that perhaps there was a problem, but hopefully that problem is getting better? I do not want to put you in too difficult a position because I understand you are all part of the same family, but I think there has been a slight family falling out, if I could be quite so bold?

Kevin Austin: I completely refute that. Just concerning the chairing, we had a meeting with DEFRA before Christmas and in my recommendation to them, I said, "It would make more sense for you to be the chair of this working group, partly because there will be recommendations that come out of this which will relate to the support that farmers will need". George referred to that in relation to ELM, whether there is investment needed in terms of improved storage requirements and that sort of thing. I said, "We do not own those recommendations, and as the Government will be owning those recommendations it makes more sense for you to chair this group". That was very quickly taken up, but that was my suggestion.

Chair: I am keen to get a solution this afternoon rather than cause complete warfare. We will park that one there. We appreciate your straightforward answers, but we do want a solution to this. Julian, you had a point?

Q54 **Julian Sturdy:** My supplementary has been touched on by Kirsty, but I

just wanted to drill down a little bit further. You were talking about the growing crop definition, and you were saying the crop must not go into surplus. The classic example, as you touched on, is oilseed rape because oilseed rape will use a lot of the nitrogen, phosphate and potash in the autumn anyway. Technically that would not go into surplus, I think I am correct in saying, so that is where you can apply manure and organic matter in the autumn. But winter wheat and winter barley will not use its nitrogen in the autumn—it will use it in the spring—so that would run into surplus.

This is where I think the confusion lies. Also, you were also talking about the definition of "crop". Would a cover crop going into the autumn be defined as a crop that could aid to stop any run-off and hold it for the spring crop coming in?

Kevin Austin: I am possibly getting into a bit too much technical detail. I will have to come back to the Committee with an answer to that last point of yours on the cover crops.

On the previous point, you are right. The winter wheat is the situation where, if you refer to CoGAP and RB209, they specifically say that there is not a need for nitrogenous fertilisers over the autumn and winter period, and that has been at the crux of the conversations that we have been having with the sector. It is around coming up with a risk-based approach about being able to apply something which is probably going to be the bulkier more kind of lower readily available nitrogen manures as opposed to maybe allowing some of the more high-risk slurries, where the liquid fraction is separated from the solid and could then be placed on the crop in the spring. That would be the direction of travel we would like to see the industry moving in.

To be honest, we had a lot of discussion around environmental trade-offs; that is a win, win, win. If you are placing too much fertiliser at a point when there is no crop need you get more nitrous oxide, which is terrible from a climate change perspective? If you have the storage in place to enable farmers to have a more balanced application, you are doing more in terms of methane capture and potentially methane reduction. These high readily available nitrates, like the anaerobic digestate, go on the soil. That is not good for the soil. It is terrible for the soil biota. That is not good practice.

We think there are win, win, wins. Indeed, there was a DEFRA report that also said getting this right in the places where it is wrong is good, not just for nitrate, phosphate, but also for faecal contaminants into the water environment too.

Q55 **Julian Sturdy:** What you are saying there is work in progress to re-evaluate the position where they started to where they are going to end up at?

Kevin Austin: Absolutely. As George alluded to, there is work going on behind the scenes. I completely agree with George in terms of the way

forward, particularly the importance that we can get communications out to farmers at some point in the spring so that we are not put in a position, as we were with the regulatory position statement, where the EA was rushed to get out a position at the request of Water UK and the NFU in August, which is far too late to then remedy any kind of concerns that people have. Yes, we are working behind the scenes with industry and with DEFRA officials, and we hope to get guidance out in spring around a risk-based approach. We are talking about doing something for the duration of the agricultural transition plan, which makes sense, but then also looking at what will be best practice in the longer term, and what is the kind of investment and other measures that could be necessary, and what government support might be needed.

Q56 **Chair:** When you say the "transitional plan", do you mean over the next six or seven years?

Kevin Austin: Yes, a discretion period.

Chair: Okay. That is quite useful to have on the record.

Q57 **Robbie Moore:** On the impacts of what has happened over the last few months or so, the amount of organic fertiliser and manure that has been able to be applied on to land has decreased. I was wondering what your expectations were of how that manure would be used going forward, in terms of being stored or incinerated? What was your understanding of the implications of the decisions that are being made?

Kevin Austin: One of the difficulties here is ever since artificial fertilisers came in we have had a disconnect. We used to have a circular economy genuinely in farming where the livestock was near the crops, the muck went to the crop and you could only grow as much crop as the muck—everything was circular. Artificial fertilisers and inputs of feedstock for animals have created what we now have, which is huge clusters of intensive dairy in the south-west, intensive chickens along the Wye, arable breadbasket in the east. At a geographical local scale, you no longer have a circular economy. What you have, in terms of the muck coming out, and the animals have been fed with lots of imported feed, is a sink economy.

On a local scale, you have a nitrogen sink economy, and we see that. There was a question of what the impacts are; I think 700,000 tonnes is the sink economy impact of nitrogen in the UK. At the last estimate, 270,000 tonnes are going into rivers.

Q58 **Robbie Moore:** I am keen to understand how you feel, from the Environment Agency's point of view, it is best to manage this material that is being produced?

Kevin Austin: We do not believe incineration is the way forward from the perspective of a sewage sludge, or anything else for that matter. We think better storage, for a start, gives farmers more flexibility about when they use it—as I said, separation of solid fractions from a liquid fraction.

Then you could have something you can use in the autumn, which is lower risk: a liquid fraction that you could use in the spring too. We also think there is a lot of innovation going on in the slurry storage world, around perhaps generating innovation of product. These are bulky products. As you know, they are not easy to transport across to other parts of the country, but if there is innovation, there could be more transport.

The poultry sector produces pellets, which I am sure you have seen in garden centres and things. There has been some innovation in some sectors already and we would like to see more of that. Support, whether that is research—

Q59 **Robbie Moore:** You can only store manure for so long before you end up producing more manure and more manure. You have to get rid of it somehow. You can only store it for so long and then you have to get rid of it, either by applying it on land or doing something else. You indicate that it would give a farmer more flexibility on when to apply it to the land. The crux of this is many farmers are only able to apply that manure on to their land at certain months within the year, for not having worse impacts on the soil health or compaction issues. I want to understand what the EA is expecting to happen.

Kevin Austin: That is the conversation we are having behind the scenes now. We have not stopped. It is not that we have shut down over the last two or three years; we have been looking at really high-risk, readily available nitrogen products. We have not been tackling farmyard manure at this juncture. Part of the guidance that we want to get out over the next three or four months so that there is plenty of forewarning for farmers this autumn is what is a sensible, risk-based approach so that some organic materials can go on the land in the autumn, and what would we like to continue to enable to be prohibited.

Q60 **Robbie Moore:** Just to finish off. Have we got confirmation from the EA that farmers and landowners can be in a clear position, going into the next season, that they will know what they can do quite clearly from an EA's perspective going into the autumn?

Kevin Austin: We talked about this issue of, "Are DEFRA and EA in dispute?". We are not. One of the reasons why DEFRA has partly taken this back in-house is because, as it stands, over the last couple of years the EA has been having to issue these regulatory position statements. We have issued one this year about the spreading, we have issued one to the water companies in terms of storage. We have been given the regulation by the Government; we have to implement it. If we are going to continue to have to apply these individual flexibilities, it does not look great from a joined-up DEFRA perspective. Part of the Minister's reasoning is that she wants to take some of the responsibility in terms of a risk-based approach back in-house, and to be able to give a clear and longer-term direction to us as the regulator.

Q61 **Chair:** The point that Robbie makes is that clear information has to come out to the farming community as to what they can spread and what they are not able to spread; that is essential. At the moment, people believe they cannot spread anything, which is not the case. I am afraid that is what they believe it to be—that they are going to be stopped from spreading anything in the autumn. That is largely what the farming community believes and that needs to be put right. Would you accept that?

Kevin Austin: I accept there need to be very clear communications coming out of that work for the autumn.

Q62 **Derek Thomas:** You made some really important points about how farming has concentrated in different parts of the country, based on what they do—that is a really important observation—and about the need for innovation and the possibility of that. But we are where we are today. We cannot suddenly put chickens back in Cornwall, and suddenly get innovation overnight.

Would it not have been better to set out where you want to be in terms of the pollution in three to five years, and allow the whole sector to work, innovate and readjust to reach that, rather than having what feels like a blunt instrument? I do accept the ways you are trying to improve the actual clarity of the information. I am just picking up on your last point about how things have changed.

Kevin Austin: We did not draft the regulations, so if they are a blunt instrument then that is not on the Environment Agency, although it is very clear in terms of diffuse water pollution generating harm to the water environment. I do not think the earlier panel disagreed with that point.

As I say, in terms of how we have been implementing the regulations, have we been blunt? No. We have been anything but blunt. We have tackled some high-risk issues, which is what we do for our regulations for the rest of farming. Just to give you a feeling for how many farms we have picked up for crop need when we have been out there—it has only been about 10% or 15% that we have had conversations with around crop needs.

The main failures under farming rules for water have been that they have not done the basics right, to be honest. We all accept these are the basics, but have not done the soil tests and have not got a nutrient plan in place—this is basic professionalism. They are the main flaws that we have been picking up when it comes to farming rules for water.

Some 10% to 15% of issues with crop need, compares to when we have been going out for the SSAFO regulations—the silage, slurry, and fuel regulations—and the nitrate regulations, which govern storage. I have been out in the south-west: non-compliance of 85% with regulations that have been in place for 12 years.

Chair: I believe you have too many here from the south-west. I would not pick on the south-west if I was you, but I understand where you are coming from. Can we park that one there because I am conscious of time?

John Leyland: I want to put it on record again. This is not the EA against farmers; I want to be clear about that. We heard from George Dunn and Stuart Colville that there is an acceptance that 40% of the pollution in our rivers comes from agricultural run-off. This is the EA against water pollution; the Tenant Farmers Association and Water UK stand beside us on that.

Unfortunately, Mr Moore has had to leave, but to finish off the answer to his question, we also do not intend to change our advice-led approach. Not only do we want to communicate better, but we are not indicating—and there has been nothing that we have said that would indicate—that we are changing that approach, to try to support farmers to come into compliance.

Chair: Thank you for that clarification. Sheryll.

Q63 **Mrs Sheryll Murray:** It leads me quite nicely into the impact of the Environment Agency's current interpretation of the FRfW. The Agriculture and Horticulture Development Board interpretation said the current interpretation would reduce nitrate leaching losses by 60%, but that it would increase ammonia emission by 10%, and phosphorous and sediment loss by 30%. How do you respond to this assessment?

Kevin Austin: I am really glad you have given me an opportunity to respond on the public record on that one, because the AHDB report looks at what would happen if you swapped all autumn spreading to all spring spreading. What I have already said beforehand at this Committee is that that is not what the Environment Agency has been seeking to do. We have talked about local areas where you can make a very large impact in terms of reducing nitrogen applications and nitrogen pollution, looking for a change in practice.

I talked about having picked up 10% to 15% of farms in our targeted inspections. Of those, where we have had issues of crop need, we have found that in many cases, the farmers can slightly change their practice and still spread in autumn. They might be spreading over slightly more land because they were putting too much down; it might be that they have had some thoughts about how they apply it in a slightly different way.

Q64 **Mrs Sheryll Murray:** Can I just ask you to explain how you are communicating this to farmers? The message needs to be clear.

Kevin Austin: That takes it back to the Chair's recommendation earlier that we need to have very clear advice out this spring and autumn.

Q65 **Mrs Sheryll Murray:** Have you not considered that in the past though?

Kevin Austin: We have communicated. John, do you want to talk about what we have done in terms of communication? It is probably one for you.

John Leyland: Yes, of course. There are hundreds of thousands of farms all of different shapes and sizes, and it is tricky to reach all of them. We have gone through some of the larger newsletters, we have gone through the NFU, we have gone through the TFA, and we have gone through the channels that we can. There is clearly more we can do. This is one of those situations where you cannot stop communicating—and maybe that was the issue. Maybe the communication was done, and we thought, "It is done now. Everybody has heard the message".

The way forward with this is to keep communicating and not to stop. We are relying on people being able to read a communication when it arrives. We may need to be able to go into where they are so that they can hear the communication, and that involves using industry newsletters. We had hoped that this would happen in the first instance—that the industry advisers would help to carry some of this message—because the information that we have provided is clearly available to industry providers.

We are working with TFA and NFU to see what other channels there may be. We do not have an exhaustive amount of communication resources, so we need to be as efficient as we can with it and to try to maximise that. We recognise that if something as simple as clarifying communication can relieve some of the stress that has clearly been felt by our farmers, and avoid pollution to water, then it is a worthwhile activity.

Mrs Sheryll Murray: Thank you.

Q66 **Chair:** Just one final question from me on this. Professor Neal talked very much about the fact that organic matter in the soil is very beneficial. I think his charge gently to you was that you were possibly concentrating too much on nitrates and not dealing with the phosphates, and the fact that if you increased organic matter in the soil you will also increase the absorption of water. How do you answer that particular slight criticism?

John Leyland: We welcome the suggestion, Chair. The EA is for holistic regulation, the EA is for any kind of position that takes into account the balance of carbon, nitrogen, phosphorus and ammonia. We welcome the call for a nutrients strategy, and we would welcome more focus on soil. I am saying I agree with him.

Chair: I am guilty of stealing someone else's question, I am just making my apologies here.

Thank you for that answer because we do need to deal with this whole thing in the round. What has come out this afternoon is that we are starting to talk about the different types of manures and the different

areas to spread it, and I think that is what has not come out enough to the farming community. I am hopeful that we will get to a solution. Kirsty.

Q67 **Kirsty Blackman:** The first question I am going to ask is about enforcing the existing rules about water pollution. How effectively do you think you can enforce the rules around water pollution, and what are you doing about agricultural water pollution that does not relate to autumn spreading, but to other sorts of agricultural water pollution?

Kevin Austin: It might be easiest for John to talk in the round about water pollution, and then I could come in on the specifics of agricultural water pollution.

John Leyland: Yes, of course; 40% of the water pollution or the reasons why our waters fail a good health assessment is down to diffuse agricultural pollution. About another 40% is down to sewage and sewage treatment, and the other 20% is various factors—run-off from roads and so on. That is very different around different parts of the country. Kevin said that there are very different farming practices in different parts of the country. There are very different causes of pollution dependent on where you are.

We need to make assessments in all of the rivers and all of the catchments that we can to try to assess where the sources of pollution are, understand points of pollution and put a plan in place for that catchment. We do that through a catchment-based approach, which is very much involving lots of our partners.

Enforcement is one of the areas that the Environment Agency has continually struggled with over the last 10 years. Our enforcement is mainly funded through a Government grant, which has dropped from around £120 million in 2010 to around £40 million at present. That does significantly change the way that we can enforce. We have to prioritise high-risk activities, and sensitive waters in high-risk catchments. It does cause difficulty, especially for our staff, who are incredibly passionate about protecting the water environment.

But where we do find that people are not in compliance with the legislation, farming rules or other rules, as Kevin has said, we lead with advice first. The people who are often causing the pollution are the people who can clean it up, and we need to work with them.

Kevin Austin: In terms of farming, the situation in the past has been similar, with funding limits to go out on the farm. We were doing about 350 visits a year, but we did get additional funding from the Government—summer last year for this year—which we hope is going to be then carried forward into the forward spending review. That will enable us to do something like a tenfold increase in farm visits.

This is still a relatively small proportion of the industry, but we do think it will enable us to get out with those advice-led visits. Particularly as that is timed during our cultural transition plan period, it would be really helpful in terms of linking farmers up with the other support that is out there. Government has also put significant additional funding into the catchment-sensitive farming scheme, which is run by Natural England. Our advice-led approach works very closely with Natural England, so we will go out, we will find a problem with, say, a farmer's slurry storage infrastructure, we will signpost them to the catchment-sensitive farming scheme, and they will go there. That scheme can also link farmers up with any grants that come on tap too.

There is a lot that looks really positive about our agricultural enforcement going forward, so I think I would rather focus more on that perhaps than the retrospective, when it was obviously harder to do as much when we had fewer people on the ground—always advice led would be my main onus.

Q68 **Kirsty Blackman:** Do you accept that around this issue of the farm renewals for water and what has happened, the Environment Agency has unintentionally done something wrong? You have ended up in a situation where people do not understand the situation because of the Environment Agency's actions and, therefore, you will endeavour to fix it, or you are endeavouring to fix it. Do you accept that something has gone wrong, and the Environment Agency holds some minor culpability for it?

John Leyland: Something clearly has gone wrong because to hear George, who I respect a lot, speak the way he did and make some of the statements that he did, clearly shows that something has gone wrong. What I do not want to do—and, again, I would like to go on record—is say that the staff or the teams in the Environment Agency have incorrectly implemented something. They have done an incredible job of trying to interpret the rules that we have and to try to get the outcome that we are trying to get, which is clean water.

What I want to make clear is that whatever needs to happen next, we are committed to doing it—so, yes.

Chair: We welcome that answer—thank you—because we have to work together to make this work. Derek, please question 16, and then Neil will do question 17 for me having stolen his question. I plead guilty.

Q69 **Derek Thomas:** It seems to be established—and our previous panel agreed—that pollution was a problem, and we think about 30% is attributed to agriculture. Is there a need for fundamental changes in the way we do agriculture and farming to try to reverse or even get back to what would have happened in the past?

Kevin Austin: It is a very broad question moving towards policy space rather than regulated space, so I will tread with a degree of caution.

Q70 **Derek Thomas:** Can I be more specific, to help you? You talked exactly

about how across the UK we have moved—in Cornwall, as I said, we produce 86% of the daffodils. I fought hard to make sure we had the labour for that, but I know full well that if daffodils are not done properly they create huge problems of flooding, run-off and so on. Some of these decisions are made around the climate, weather and connectivity. Do you think through ELMS, we should encourage more balanced farming that can use all aspects of farming, such as the stuff that chickens produce that can go on the farm next door?

Kevin Austin: The short answer is yes. The longer answer is to say there is quite a lot in what the Government has been announcing. I have seen the Secretary of State talking about the need to boost regenerative farming. For example, he spoke to the CLA around that. There is a lot within the component of the ELM scheme that will allow farmers to take a different approach. Every farmer has been driven by the markets in a particular way, and, indeed, driven by the previous funding schemes that came down from the EU in a particular way, which has felt at times almost a vicious circle. There is an opportunity to break that circle and look at fresh approaches. I think that is what Government is trying to do with the policies they bring forward.

In terms of the other suggestions made on the way forward by the previous panel around innovation, ELMS, the link between the sustainable farming incentive scheme and farming rules for water, we agree with all of that. As I say, in terms of the way forward there is an awful lot of common ground between us as a regulator and the industries that we are working with.

John Leyland: I have been working in this part of the Environment Agency for four months. In that four months, I can see it is incredibly difficult for farmers. I am for anything that makes it easier for farmers. Indeed, there are opportunities to streamline some of the governing regulations, such as on nutrient management and storage. We heard George talk about nitrate vulnerable zones. We would support having a look at that, and for farming rules, anything that makes it easier for them to understand their obligations—it is very, very difficult—will also be more effective for us as a regulator.

This goes to Kirsty's question as well. There is a role for the agrifood supply chain as well. Not to stray into policy, but Henry Dimbleby's food strategy was very good. We have worked in Yorkshire with Arla and producers who have provided cheap capital to farmers for them to be able to invest in some of the storage solutions that are needed, so looking at the wider supply chain. Again, back to the point, this is not EA versus farmers; it is EA versus water pollution, and if working with farmers means putting our shoulder to the wheel for reviews or whatever it needs to be, it needs to be, as long as we get to that end goal.

Q71 **Dr Neil Hudson:** Thank you for putting on record that you stole my question, Chair. You have given me the privilege of the take-home message summary question at the end. There has been a lot of talk today

in the political climate about not prejudging inquiries, outcomes and that side of things, but there is a working group on this to get some clarity and some decisions.

You have heard from our panel this morning. Given the views expressed by the stakeholders in the earlier session and the line of questioning, can you give any comfort to the stakeholders—to the industry at large—on whether you are planning to review your position on this?

Kevin Austin: I do not think it is so much about reviewing our position because, as I say, our position has been risk-based implementation from the start. It very much comes back down to that communication point. We need to be able to communicate more clearly what that risk-based implementation going forward is going to be. As I say, DEFRA are coming in to help us shape that, working with the sector as well.

We heard from Stuart earlier talking about how the biosolids assurance scheme could be something else we could work with in terms of applications of sewage sludge. We are having detailed conversations with Water UK and water companies about how that could work going forward as another route. It is not about changing our position; it is about clarifying what our position is.

Q72 **Dr Neil Hudson:** You started your evidence by saying that nothing had changed and that it was a policy statement in response to a request from Water UK. Moving forward, do you think when we come into autumn there will be that clarity? Will there be good communication so farmers and stakeholders know exactly what they can and cannot do in autumn in terms of spreading on their fields, and that they still will be able to do it so long as it has the required objectives around soil health and environmental support? Are you confident that they will know exactly what they can do, and that they will be able to do some of this in autumn?

Kevin Austin: I would be hugely disappointed if it took until the autumn for the farmers to have that clarity, if that answers your question in another way.

John Leyland: I am hugely confident that we will communicate what we need to communicate. It sounds like we have other panel members here that are willing to stand beside us, and that is a really important point. We are going to need the whole sector to communicate this because, as I made the point to Sheryll, it is a big, wide, diverse sector, and we cannot always expect farmers to be in the places we are in, so we welcome support from the Tenant Farmers Association, the NFU and others to help carry our message. You can be confident that we will communicate ahead of autumn 2022.

Dr Neil Hudson: Okay, thank you.

Q73 **Chair:** I take the Chair's privilege of asking the very last question. You say you will get this communication out. When?

Kevin Austin: Minister Prentis was mentioned a lot in the first panel. We met with Minister Prentis, DEFRA officials, George and several other representatives of the farming sector before Christmas. Minister Prentis, I believe, said, "In an ideal world we would be looking by the end of February". As I say, DEFRA has taken on the chairing of the group that is going to come up with those proposals, so I do not want to put words in its mouth. That was what was on public record in that meeting. It might take a little bit longer than that, but it needs to come out in the spring.

Chair: Early spring, we would hope.

Kevin Austin: Yes, something in the spring is the key point here.

Chair: The previous Secretary of State, Michael Gove, was always very keen on "hunt the seasons"; they used to get slightly expanded and contracted on occasions. I thank you, gentlemen, very much for a good session. You can understand the seriousness with which we take this matter. We also appreciate your direct evidence, and please take home, hopefully, the advice the first panel had: working together we can have a solution. We appreciate you coming and being very straightforward with us. We will carry on pushing the cause to make sure that organic matter that is safe to spread in the autumn can be on the types of soil that it needs to be spread on. I look forward to working with you in future. Thank you.