

Environmental Audit Committee

Oral evidence: [Nitrate](#), HC 656

Wednesday 21 March 2018

Ordered by the House of Commons to be published on 21 March 2018.

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Members present: Mary Creagh (Chair); Colin Clark; Geraint Davies; Mr Philip Dunne; Zac Goldsmith; Mr Robert Goodwill; Caroline Lucas; Kerry McCarthy; John McNally; Dr Matthew Offord; Alex Sobel.

Questions 203 – 307

Witnesses

I: George Eustice MP, Minister of State for Agriculture, Fisheries and Food, Defra and Helen Wakeham, Deputy Director of water quality, groundwater and land contamination, Environment Agency.

Written evidence from witnesses:

– [Defra](#)

Examination of Witnesses

I: George Eustice MP, Minister of State for Agriculture, Fisheries and Food, Defra and Helen Wakeham, Deputy Director of water quality, groundwater and land contamination, Environment Agency.

Q203 **Chair:** This is our final session on our nitrate inquiry, so we are delighted to welcome the Minister, George Eustice, to be here with us today, and Helen Wakeham from the Environment Agency. Thank you very much indeed for coming.

Perhaps I could begin by asking you about some recent EU proceedings where the Government were in breach of the Urban Waste Water Directive. The case was brought against us in 2009, and last year the ruling came that we had breached this directive in Wales, Gibraltar, Scotland, Northern Ireland, Durham and parts of England, Essex. Why—this is to both of you—were we not compliant between 2009 and 2017, especially because this affected environmentally sensitive areas? What went wrong?

George Eustice: I am going to ask on this one if it is okay for Helen Wakeham to lead on the answer, because urban waste water is something that Thérèse Coffey specifically deals with, but Helen is very familiar with it and I deal mainly with agriculture.

Helen Wakeham: I have a general idea with issues in England only and the judgment was much broader than that, so it is hard for me to talk outside of England. I will be honest and say that I do not know the details of that case, so can we give you a written answer on that, please?

Q204 **Chair:** That is fine. We would like to know when the UK will be back in compliance, particularly in Gibraltar, because that is not an area that people tend to give a lot of attention to, and when will we have the data to see this. How can we be confident that it will not happen again? Those are the key things, particularly in light of the Brexit negotiations and what is happening, and the plans in the 25 Year Environment Plan.

Helen Wakeham: Can we give you a written response on that, please?

Chair: That is fantastic. Thanks. Okay, Zac?

Q205 **Zac Goldsmith:** The first question I want to put to the Minister, George Eustice, if I could. The Environment Agency has said, “86% of river water bodies have not achieved good ecological status” so I am interested in hearing from you what milestones you have set for improving this, who is going to deliver those improvements and what is it going to cost.

George Eustice: It is important to acknowledge that some good progress has been made, particularly on surface waters. When it comes to nitrate there is a particular problem with groundwater and it can take up to 60 years for the water to move through the aquifers. For a number



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of years we are still going to be suffering the consequences of overuse of synthetic fertilisers, in particular during the 1980s and 1990s. When it comes to surface water we have seen a reduction of around 25% to 30% in those pollutants, but you are right, there is still much further to go.

There are a number of things we are doing. First, you have the existing EU frameworks that we are working to—notably, the Water Framework Directive—and which commit us to get to good environmental status. Secondly, we have introduced some new universal rules for all farmers, in particular requiring them to take measures to reduce soil erosion and to better manage the application of nutrients, and those take effect from this April. The really exciting opportunity is the way that we are redesigning agriculture policy, so that rather than having an arbitrary area-based single farm payment we have an opportunity to switch that quite large budget to payment for the delivery of public goods. The really exciting opportunity is to use that to incentivise a different approach to farm husbandry.

Generally speaking most people say that the progress that we need to make is on diffuse pollution from agriculture into our water courses. Because of the scale of agricultural land, it is natural that it would have quite an impact. Some progress has been made on water companies but there is still much more that they need to do as well.

Q206 Zac Goldsmith: For a Committee like this, or for environmental conservation groups watching the progress of Government, what should they be looking out for? What are the milestones? How are you going to judge your own success in relation to this issue?

George Eustice: I might ask Helen to come in. The 25 Year Environment Plan that we had set out a number of key targets, in particular on improving water quality. It talked about our river basin approach to try to manage those catchments and improve water quality through that. My own view on a lot of environmental issues is that we need to be looking at the trends, and getting trends moving in the right direction. We should perhaps be obsessing less about arbitrary targets, and making sure that the trend is in the right direction and that policy interventions are supporting an improving trend rather than a deteriorating one.

Q207 Zac Goldsmith: A last point on that. The first review of the 25 Year Plan is in five years' time, so by that time do you expect these trends to be clearly moving in the right direction? Would that be a milestone?

George Eustice: Yes, the trends in a lot of these things have been moving in the right direction anyway for 20 years, albeit faster for surface water than groundwater. As I said, we have some new rules that require farmers to basically conduct soil nutrient analysis so that we can try to refine the application of nutrients. Those take effect this April, so we would anticipate those starting to have an effect and as we roll out our new agriculture policy starting probably from 2021 over maybe a five-year period, we would see progress during that period too.



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Q208 **Zac Goldsmith:** Trends in relation to groundwaters are not heading in the right direction and that is true today, yes?

George Eustice: They are moving in the right direction but very slowly.

Q209 **Zac Goldsmith:** So the answer is the trend has turned and they are moving in the right direction?

George Eustice: Yes.

Q210 **Zac Goldsmith:** We are told again by the Environment Agency that the groundwaters that supply 30% of the drinking water that we drink in this country continue to deteriorate in quality and have been deteriorating for the last 60 years. That is a figure that you recognise?

George Eustice: Yes.

Helen Wakeham: Perhaps it is helpful for me to come in there. What we are seeing on nitrate in surface water is a very gently declining trend, but, as I know you have heard in previous evidence sessions, there is a chunk of nitrate sitting in our groundwater and a gradually increasing trend that may increase for another 60 years and then we would expect to see a decline. We cannot tackle the nitrate that is already in the groundwater. What we can do is to stop additional nitrate reaching it.

Q211 **Zac Goldsmith:** When will we see the trend clearly moving in the right direction? When will the groundwater trend be—

Helen Wakeham: It will be 60 years before all of our groundwater is headed in the right direction.

Q212 **Zac Goldsmith:** Sorry to interrupt you. Going back to the point the Minister made, is that because of how slowly the water moves through the rocks? Is that the same issue?

Helen Wakeham: Very basically it is because of the nature of the geology and the overlying soil.

George Eustice: As well as that it will differ across watercourses. It does depend on the soil type and the nature of the aquifers underneath. We have seen from 1990 to 2010 quite a significant reduction in the use of fertilisers, down by close to 40%, particularly on grasslands, and less of a decline when it comes to arable crops. You would expect that to start to filter through, if you will excuse the pun, sooner in some areas than others, but it could be up to 60 years.

Q213 **Zac Goldsmith:** Is it possible to build contingency plans for localised hotspots of nitrates? Is there anything that the agents of the Government can do to tackle those hotspots?

George Eustice: Helen, perhaps you want to explain the groundwater zones that we can designate, and protection zones where there is a really specific problem, particularly when it relates to water quality from a health perspective. There are around 200 of those now.



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Q214 **Zac Goldsmith:** Practically, what does that involve?

Helen Wakeham: That might involve us taking a different approach to permissions to spread waste to agricultural land. It might involve farmers doing something different within those zones. That might be partly our regulatory effort, but with more incentive so that we can take land out of production in certain places if we have an acute problem.

Q215 **Zac Goldsmith:** So there is nothing that you can do about the nitrates making their way through the rock formations?

Helen Wakeham: Once it is already in there, there is nothing we can do.

Q216 **Zac Goldsmith:** You are saying the contingency involves making sure you do not compound the problem through other activities, and that is something that is already in place and already being applied in those areas that are acutely affected.

Helen Wakeham: Absolutely, so we have safeguard zones, and we have countryside stewardship options that help farmers to reduce the intensity of production in some places. We also have the Catchment Sensitive Farming initiative that operates over 40% of England, where there is more advice and grants to farmers to effectively reduce the risk of nitrate getting into groundwater and surface waters.

Q217 **Chair:** Minister, can I take you back? You talked about the reduction in fertiliser. The figures we have here are that it has fallen from 157 kg per hectare in 1984, when we were both children or at least teenagers, to 146 kg by 2015. That is not a huge reduction, is it? That is for crop to land use.

George Eustice: That is for crop to land use. My point is that I think overall it is staying at around 35% to 40%. There has been a much more significant reduction in applications on grassland.

Q218 **Chair:** It is 131 kg down to 56 kg. It is a 60% reduction there but almost nothing on the crops.

George Eustice: That is right, and it has been more stable, as I said, on crops. There just has not been the same reduction—only a slight reduction.

Q219 **Chair:** Do you think that is an issue?

George Eustice: It may be, but one of the important rules we are bringing out is to require soil testing, so that you are getting much more attention to detail. Rather than farmers just putting on fertiliser because it is part of their standard process and they assume they need to put it on, they will actually check what is in the soil first. I would guess that when you have arable crops in particular they are often higher value crops, and farmers want to make sure that all the nutrients are there. Because they are higher value crops they are more likely to be able to afford the fertiliser to go on the land, whereas fertiliser costs have gone up quite significantly during that period. That has probably been one of



the key drivers of reduced use, and on grassland systems they have tended as well to improve the breeding of grasses so that they are deeper-rooted and make better use of nutrients, and so they have been able to see a reduction in the use of those fertilisers more easily. The economics of the livestock industry have probably driven it that way as well.

Q220 Chair: I am sure we do not want just a market-based approach on this, do we? This is costing us as taxpayers and water company bill payers a lot because the water that is going to be eutrophied for possibly the next 60 years will have to be blended, and that is an expensive process.

You talked about changes to the area-based system. With the news on the transition or implementation deal everything is going to be status quo until 2020, is that correct?

George Eustice: Basically yes, but even if we were free to we have always been clear—as we are in our command paper—that there would be what we call an agricultural transition to distinguish it from the implementation period or transition, and we have suggested that that period might run for five years. We have left the timing open to seek views on that but, as the Secretary of State has pointed out, we envisage that we would commence the move from the system we have to the system we want to get to, probably in 2021 after the end of the implementation period.

Q221 Chair: So the cash payments at the levels that they are now are guaranteed to 2024?

George Eustice: The guarantee is that the cash payment—the manifesto commitment is that the total amount of cash going into agricultural policy and the farming environment will remain exactly as it is now, so that is roughly, depending on exchange rates, around £3 billion a year until 2022. We also have a manifesto commitment to phase in a replacement scheme that will be a funded scheme coming thereafter, starting probably just before 2022 and rolling that out as we phase the old scheme down through a system of caps.

Q222 Chair: When do you think that new system will be fully bedded in?

George Eustice: Probably fully bedded in—as I said if I had to estimate, something like five years after we start, so probably 2026.

Q223 Chair: So you are starting in 2022. You say five years, is that not 2027?

George Eustice: It could be, yes. It depends. We would probably want to seek to start that transition from the moment that we are able to do so, and from the point that we leave the European Union.

Q224 Chair: We heard on the natural Environment Plan yesterday that there were some concerns from the nature groups, the NGOs, about this transition to area-based payment for public goods. Obviously you have a 25-year plan and you have just said now that we will not have a new



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system up and running potentially for another nine to 10 years and that is half of the Environment Plan timescale gone.

George Eustice: I do not agree with that. I think the important thing is that you would be beginning the transition from the point that we end the implementation period. What we have outlined in the consultation is that you would potentially have a declining cap on the maximum size of single farm payments, and then migrate across to a new scheme some of your larger enterprises that are affected by the cap first. This achieves a number of things. First of all it means that we can gradually phase in the new scheme, rather than have a big bang revolution with all of the problems you can get with that, such as new IT systems and 100,000 farmers trying to become familiar with the new system. You gradually roll that out. You start with the larger enterprises that often have more management resource available to them to make that change, and they are probably more financially resilient to make that change. It also means that your potentially more vulnerable smaller family farms are given the maximum amount of time to prepare for the new world.

It is never easy moving from a system that we have now where there is a high level of dependency on subsidies based on an area payment, to something that makes far more sense. Our view is that you need to begin it as early as you can and do it in a phased way over a period of five years. It is not right to say that there will be no change for five years. It simply means that you will be rolling out that change in parallel to winding down the legacy system.

Chair: Thank you for explaining.

Q225 **Zac Goldsmith:** The new system is not just about payment from Government to landowners for delivering public goods. That is an essential part of the change, but it is not the only change. There will be an element, we have been hearing, of the polluter-pays principle being introduced, and it will be backed up necessarily by a regulatory system that prevents the worst practice.

The question for you is that the problem we are discussing now, which we will be dealing with for at least the next 60 years because of the geological nature of some of the areas affected, is a problem that is perfectly legal. These are not farmers who have broken the law, but nevertheless the misuse of fertilisers is forcing society as a whole to bear a very significant cost, which is why we are having this inquiry in the first place.

Alongside the reforms to CAP, the money for public goods, and the polluter-pays principle, do you anticipate that the regulatory bar will also be raised to prevent these kinds of practices and to prevent society having to bear an unfair cost going forward? Is that part of the package, in your view?

George Eustice: As I said, we have just brought in some additional rules now. These are universal rules applying to everyone. They cover things



like how to store slurry, for instance, and rules around the need to test soils. That is a start.

Once we wind down and phase down the single farm payment, the one thing you will lose is the so-called cross-compliance regime, but that is an incredibly clunky system of fines and penalties that largely does not do anything that is not already in our legal baseline.

We will, though, need to think about how we ensure that we adequately enforce that legal baseline, and of course there will be an opportunity to review the legal baseline.

My view on this is that some of these issues are quite complicated and probably we have a golden opportunity, as we remove and phase out these direct payments, to really use that funding in a creative and imaginative way to change the way we manage our soils. There are big linkages to the way we manage our soils and the impact on water quality. We ought to be thinking of the types of incentives that we can put in place to encourage the right kind of farm husbandry in the round and not always reach for the regulatory solution, which by definition always ends up being a little bit clunky and often ends up not achieving its intended outcome.

Helen Wakeham: From an environmental perspective, the regulatory baseline we have at the moment is not a very flat line. It is, as you say, very clunky. It applies here, there and everywhere and we have some UK-based legislation—we have the Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Fuel Oil) (England) Regulations, and we have things that apply under urban waste water treatment, under the Water Framework Directive, under NVZs. It is very complicated to administer and one farmer in one location may be subject to a range of regulations that his neighbour is not. It is complicated. What we have is an opportunity. If we start with the farming rules for water we have the opportunity to reset and have a baseline that is credible, which will be easy for farmers to understand. That will be easier for us to regulate and it will be easier then I think to see what public goods we want to pay for, because we will know what our regulatory expectation is—at the moment that is very difficult to do.

Chair: Okay. We have some specific questions on regulation, so we will come back to that. Thank you. Geraint?

Q226 **Geraint Davies:** Minister, you will know that nitrogen in fertiliser is released as ammonium ions, which act as precursors for particulates in air pollution. What contribution do you believe that nitrates through ammonium ions make towards air pollution, giving rise to 40,000 premature deaths a year directly from nitrate-causing particulates?

George Eustice: Yes, it is significant. Helen has just told me that basically the agricultural sector does account for about 88% of the ammonium emissions so, yes, it is significant and is why we put quite a



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lot of emphasis on schemes to help farmers to invest in improved slurry storage. Putting lids on slurry stores can help reduce this problem, and also we are looking closely at some of the things that have been done in countries like Denmark and the Netherlands, where they have looked at encouraging and supporting farmyard manure banks so you can put applications of farmyard manure in the places where you need it, rather than where it is created. There are also other technologies such as direct injection equipment, where you can significantly reduce the emissions that come from it.

Q227 Geraint Davies: There is domestically produced nitrate ammonia causing particulates that give rise to air pollution, and there is also trans-boundary air pollution coming over from Europe. What proportion of the pollution from particulates caused by nitrates is domestically produced and what proportion is blowing over from time to time from Europe?

Helen Wakeham: I can perhaps answer that in generality. We do a periodic ammonia assessment that tells us exactly what is happening, but because our prevailing wind is from the west it is more likely that our ammonia is heading to Europe than the other way around most of the time.

Q228 Geraint Davies: My understanding is that when from time to time we have pollution peaks, in particular in London, from particular pollution environments and our meteorological environment, if the wind is going in the wrong direction these trans-boundary particulates coming from Europe can in fact make a difference of as much as 15%. For people who are vulnerable, like old or very young people, in polluted areas this can make a significant difference. After Brexit, what arrangements will be in place to engage with our European partners to minimise trans-boundary air pollution? You will be aware that there is an EU directive on trans-boundary air pollution at the moment. Minister, will you continue being aligned with that or contribute to that, or will we just pretend the pollution is not blowing over? I realise we are blowing ours over there as well, as Helen has said. What is your view?

George Eustice: If I am honest we have not discussed that particular directive yet, but in general terms the Withdrawal Bill brings across in the first instance all of the commitments that we have now. Alongside that we are very clear that we want a comprehensive future partnership with the EU that will include mechanisms to have such discussions and co-operation in this form. Behind that as well there are other conventions that cover these issues and go wider than the European Union. We have never said that in leaving the European Union we want to cut ourselves off and cease co-operating in these areas. We are just saying we want control of our own laws again and then still continue to co-operate and work together on certain technical challenges, particularly when they pertain to the environment.

Q229 Geraint Davies: You are obviously aware that four Select Committees came together to talk about air pollution. Are you conscious of your own



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critical role in this in terms of air pollution and the relationship between nitrogen and fertiliser and particulates, and also the trans-boundary issue? Will you be looking to put this on your agenda and act on it?

George Eustice: Yes. I have attended a number of EU councils where we have addressed issues around land use and livestock emissions of ammonia and what can be done to improve that. Some sectors have made quite big improvements just by changing their feeding regime. They have managed to make some improvements. Others have further to go. This is an agenda that we will continue to pursue, and we hope that through the new partnership that we will have with the EU, while we will not be adopting or following the EU regulations, on some of these technical challenges we will be in a position to work jointly and have bilateral agreements on these things.

Q230 **Chair:** It does put at risk some of the SSSIs under the Habitats Directive and the trend has been upwards over the last two years. Can you see a reason for that? The trend line was down until 2015 and it is now very definitely up, both in total and from agriculture. Why is that?

Helen Wakeham: It is a recent increasing trend. What I anticipate, and the same issue applies to water, is that the intensification of the dairy industry has led to increased emissions from dairy all round. For example, we know that in the last 10 years the rate at which dairy farms cause pollution instances has doubled, so there is something there around the intensification of the industry and whether or not the infrastructure to support that industry has grown at the same rate.

Chair: We did hear that from other witnesses as well. Kerry?

Q231 **Kerry McCarthy:** When there was a campaign against the Nocton dairy farm, which was going to be one of the biggest, most intensive mega-farms, this was an issue that very much came up about how you would deal with this slurry. Is the response to say that we are not going to have these intensive farms, or is there an environmentally responsible way of managing them?

Helen Wakeham: Technically there are ways of managing it, including appropriate slurry storage, enough land to spread that slurry, or anaerobic digestion, which gives more consistent product that can then be exported or used more consistently on-farm. There are covers for slurry storage and management of yard space so that more slurry is not created than is necessary. Technically there are ways of managing large farm units, yes.

Q232 **Kerry McCarthy:** How would you deal with it? Would you deal with it through the planning application and process? In the future we could perhaps deal with it through the way that the subsidies are granted to farms if you are looking at the public goods side, but how would you ensure that was done?

Helen Wakeham: We do not have a regulatory mechanism for it at the moment. We could certainly with the right resource ensure that new



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slurry stores that are built are fit for purpose, because there are the Water Resources (Control of Pollution) (Silage, Slurry and Agricultural Fuel Oil) (England) Regulations that require storage to be built to a certain quality. There is certainly a gap there in terms of emissions to air, for example, from dairy farms. Where pig and poultry units are subject to the IPPC regulations and we regulate them, the same regulations do not apply to dairy units. I understand that it was considered a few years ago—it is a European regulation—and not considered cost beneficial. There is a regulatory gap there as it relates to dairy farms.

Q233 Geraint Davies: I am thinking that nitrogen dioxide is the second or third biggest contributor to global warming after CO₂ and methane. We have already mentioned the problems with agriculture with methane with cows and pigs, and then in terms of the responsibility of the farming community we also understand therefore that nitrogen and fertiliser is a major contributor on top of all that. How conscious are you of your duty towards not just clean air but also climate change in agriculture being something that the Government does not talk about very much? We have this appalling background in methane and nitrogen dioxide.

George Eustice: It is an area that we are looking at. Quite recently Rothamsted has produced an interesting paper around whether we could improve the way that we use organic matter—farmyard manure principally—on our soils, and arable soils in particular, and whether we could use grass leys as a break crop and get more livestock back into our arable areas, as that could have quite an impact on carbon sequestration. You would be locking more carbon into the soil. It is an area we are looking at very closely. We have put a lot of emphasis in our consultation on future farming on soil, and soil husbandry and soil health.

We have a bit of a challenge at the moment. The arable tends to be in the east of the country and we have seen increased specialisation and far fewer livestock farms, particularly dairy and beef in that part of the country, and we have seen a concentration of dairy farms, broadly speaking, in the west country. We have a problem, put simply, that we have too much slurry and farmyard manure in the west, and then we fret about how we are going to manage that and we give farmers grants to put lids on their slurry stores, and we find that we have to grant them derogations to put more on the land than probably they should at times. Then, paradoxically, in the east we have soils that are probably being eroded and losing organic matter, and we are seeing too much specialisation and the pressures of pests and diseases.

The magic solution, if we could find a way of doing it cost effectively, would be to find a way of moving the slurry from the west to the east, mixing it with the straw that is the by-product of cereal production and then putting it back on the land so that you are then mimicking that central principle of synthesis and production in plant growth, decomposition, and the recycling of nutrients where they are needed. At



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the moment we have a bit of a mismatch because of the specialisation of our farming industry.

Chair: We are going to move on. Before we do I would like to welcome the young people who have joined us. We are the Environmental Audit Committee. We are discussing with the Minister and one of the deputy directors of the Environment Agency about water pollution and the way that farming and water pollution interacts, so there is a lot of discussion about slurry. That is just to bring you up to speed with where we are, and you are very welcome. We are going to move on now to a question from Philip Dunne.

Q234 Mr Philip Dunne: On the subject of water quality. You have touched on how we are going to move from pre-Brexit CAP payments into the new regime. Could you highlight for us how you envisage moving from the current Water Framework Directive that has water quality standards covering all water systems, to the proposals under the 25 Year Environment Plan that are somewhat more limited in scope and do not appear, given some of the evidence we have received, to be as ambitious as the current directive?

George Eustice: What will happen initially is through the Withdrawal Bill the Water Framework Directive, complete with all of its existing targets and commitments, will come across. Our general view is that the Water Framework Directive while not perfect has some benefits in terms of the way it is structured. It creates a commitment to put together plans to deliver improved outcomes, rather than trying to proscribe through direct legislation how to get those outcomes. In that sense it is designed in quite a different way from, say, the Nitrate Directive. What some people say is that a Nitrate Directive in terms of the way it is drawn up and designed, while having good intentions, is probably a bit clunky and a bit outmoded and probably a bit unresponsive and does not really deliver what it is trying to. The Water Framework Directive has built into it that flexibility to basically enable you to pursue outcomes and is more outcomes-focused. Those will come across through the Withdrawal Bill.

As we have made clear many times we have no intention of watering those down. The 25 Year Environment Plan obviously is a much more general, broader framework so probably would not have got in to listing each and every commitment that we have on every area. It is more about the approach and the principles.

Helen Wakeham: The 25 Year Plan refers to clean and plentiful water but it does also make the commitment that we will reach or exceed our water quality objectives. I do not see anything in the plan that suggests that we would row back on our water quality objectives.

Q235 Mr Philip Dunne: The Minister has just said that transposing the Water Directive across includes the commitment that all water should be in good status by 2027. We were advised that the 25 Year Plan refers to 75% of our waters being close to their natural state, and there was a



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suggestion that there is a conflict between those two. I think what you are suggesting is that there isn't, but perhaps you can elaborate.

George Eustice: I do not think there is. As Helen pointed out, the 25 Year Plan, while not listing all those things, also said that we are committed to the water quality objectives that we have, and those will become retained EU law once the EU Withdrawal Bill has completed its passage.

Q236 **Mr Philip Dunne:** You said in answer to one of the earlier questions that you are not intending to introduce arbitrary interim targets or measures. Can you indicate how you intend to monitor progress if you are not going to have targets for this water quality improvement?

Helen Wakeham: We are currently looking at the metrics that will support the 25 Year Plan delivery, but before we even get there, the river basin management planning process sets out what we intend to do in each water body to meet the requirements of the Water Framework Directive, and that cycle of river basin management planning goes on. We have plans in place that run from 2015 to 2021, and we are now starting to look at the plans that run from 2021 onwards. I think that system of water quality planning that is now really well-established in the UK will continue.

Q237 **Mr Philip Dunne:** These are five-year plans. Do you expect each of these to have their own milestones attached to them?

Helen Wakeham: Each of those plans has its own targets and milestones attached to it, yes.

Q238 **Mr Philip Dunne:** I am not sure if we have that evidence. It might be helpful if you are able to write to us, if we have not already received it. I don't recall seeing that. Thank you. Final question from me, and this is perhaps a question for Helen: does the EA feel that it has the resources needed to be able to deliver this ambition?

Helen Wakeham: River basin and management planning is not just about our ambition, and the way we are now organising in England to deliver water quality objectives is around the catchment-based approach. That is the planning unit we are using to work with all sorts of partners, generally led by the Rivers Trust, to look at what actions we need. Some of those are actions for the Environment Agency. Some of them are actions for water companies, some of them are actions for farmers, and some of them are actions for others. That system of planning is well-established, and that creates a resource that the Environment Agency on its own could not possibly hope to fulfil.

Q239 **Mr Philip Dunne:** Could I just commend to you a Slow the Flow project that you are running in my constituency to help alleviate and retain the waters higher up the water courses? I think it is unusual and is a groundbreaking pilot for the UK. It seems to be working well and your team is doing a great job.



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Helen Wakeham: Thank you. It is a great example. I hope it is less unusual than it was.

Q240 **Geraint Davies:** On water quality there are growing public concerns about public health risks surrounding clean water, and in particular about us not only slipping behind the EU levels, but getting nowhere near close to World Health Authority levels. In the light of what Zac Goldsmith was talking about, and the 60 years of seeping nitrates into groundwater, what reassurances can you give us that our water quality will continue to improve above the level required by the EU, or can't you? It seems that our air and water is going to get a lot worse after Brexit.

George Eustice: As I said earlier, particularly on grasslands we have seen a significant decline in fertiliser use. We are introducing now, coming into effect from April, some new regulations requiring soil testing, so we are doing what we can. We know that for the last 25 years we have seen a decline in use of fertiliser and that will come through the system eventually.

The other thing that we have is a very rigorous monitoring programme. We monitor some 6,000 sample points on surface water and some 2,400 on groundwater where we frequently and regularly test the water quality. In addition water companies also test their water and will, as the Chair pointed out earlier, do techniques such as blending of water in order to make sure that they get the nitrogen level down so it is safe to drink.

There is a rigorous testing regime in place to monitor things. We expect the trend to move in the right direction, given the sharp reduction in fertiliser use. As I said, there is an opportunity in the way we design future agriculture policy to try to drive things further in the right direction.

Q241 **Geraint Davies:** Do you feel that the nitrate time bomb that we have heard of in terms of water quality could be made in certain places a lot worse by things like fracking, which would add to the problems of water quality? Can you give us any guarantees now that in the next 10 years there will not be a public outcry about water quality, be it in isolated places around the country?

George Eustice: I can ask Helen on the fracking. I am not an expert. I understand it is highly regulated.

Helen Wakeham: Fracking is one of those activities that is very highly regulated and there is no way that we would permit fracking activities into strata that is used for drinking water.

Q242 **Geraint Davies:** Putting that to one side, on the nitrates, is there going to be a further public health risk from nitrates anywhere in Britain in terms of our water?

Helen Wakeham: No, there should not be, because we know where the trends are still increasing and we are working with the water companies



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to make sure that they either have blended sources or treatment. If we look at water quality more generally there are other hooks in the 25 Year Environment Plan. For example, we have the commitment to a chemical strategy and an early warning system for chemicals, so we are starting to build mechanisms by which we can look ahead at our water quality, which I think is a big step forward. In general, the regulations that we have look back at legacy issues that we know are there, and I think the real step forward from the 25 Year Plan will be to enable us to look forward a bit more.

Q243 Caroline Lucas: I wanted to push a little bit further on the point that Philip Dunne made in his first comment about the divergence between what the 25 Year Plan and what the Water Framework Directive says. There is quite a big difference between the Water Framework Directive saying, "Good status for all ground and surface water by 2027" and the 25 Year Plan basically saying 75% as soon as is practicable. To be honest "as soon as is practicable" is utterly useless as far as any meaningful target is concerned, and we have heard lots of evidence in a parallel inquiry we are holding in the 25 Year Plan saying that one of the absences in it is of legally binding targets. Would the Minister accept that he would give greater reassurance to those of us who are worried about that divergence if the same language with the same date and all water were repeated in the 25 Year Plan, rather than this much more vague and less stringent aspiration?

George Eustice: I think I can only repeat what I said: the 25 Year Plan is an overarching framework covering a multitude of issues. We then do have, though, the Withdrawal Bill, which we all have the pleasure of going through.

Q244 Caroline Lucas: That is not entirely true. I think all of the critique from the NGOs and so forth about the 25 Year Plan is about the absence of legally binding targets. The idea that they were never going to be appropriate in the 25 Year Plan does not seem to be a very good defence to me. The people want to see reassurance in that plan that if Brexit happens we will have something as rigorous as we have left behind. If you do not have the targets in there that does not give us that reassurance.

George Eustice: With all of these things it is much more important that you have the management and the interventions to get progress in these areas than worry too much about—

Q245 Caroline Lucas: We know that retained EU law can be deleted. It is not going to be difficult to delete that, whereas if in your new, shiny Environment Plan you had a legally binding target, then that would be a much stronger signal that you would be giving out. You could just say "yes" and then we can move on.

George Eustice: I just think that the plan is a way. There are some targets in there but we have deliberately not tried to have targets for



everything. To address the point I said earlier, in a lot of these areas, we are looking at soils at the moment in quite a bit of detail, and a number of you have said to us that it is very hard to have a measure of soil health. There is no uniform understanding of soil health, how you should measure it and what emphasis you should put on different features, and therefore it is all a bit too difficult. My argument is no, it is not. Let us start somewhere. Let us have a proxy. Let us develop some kind of soil health index, and let us measure our trends so that we know things are moving in the right direction, rather than trying to say that it is all too difficult and that if we cannot set a target in a complete, statistical fashion we should not even go there.

I think there are areas of environmental policy where we need to get better at recognising that you may not have perfect data all the time. You may not be able to pick a perfect figure all the time, but you should, in every area, be trying to move trends in the right direction. It should be possible to develop this concept of an improving trend in environmental health in a number of areas, including in soils.

Q246 Chair: I think we emphatically agree with you, particularly on soil health where our report of two years ago was in great detail and recommended the soil measurement index, which one day we hope we will see.

Can I just press you on these numbers? The Water Framework Directive says 75%—no, all—should be in good condition by 2027. At the moment, or on the figures that we have, 86% of river bodies were not in good ecological status in 2016. In 2014 78% of surface and groundwater bodies failed to meet good status. There is a distance to travel, isn't there? Ms Wakeham, do you have more up-to-date figures? Are we wrong, and if we are not wrong, how are we going to get to everything being good in nine short years?

Helen Wakeham: They are the most up-to-date figures.

Q247 Chair: Is it not just fantasy then to say that 75% of water should be in a good condition?

Helen Wakeham: Member states in general are talking to the Commission at the moment about the challenge of meeting good ecological status everywhere in 2027, and we are keeping an eye on those discussions. It is not just the UK that is finding that a challenge because good ecological status requires all of those waters to be in a near-natural state.

Q248 Chair: Almost 90% of our rivers aren't.

Helen Wakeham: It involves every single determinant—all the chemical, the biological factors, the fish, the plants, the near-natural state. The Thames in London could never achieve it because it is modified. There are real challenges with getting to a near-natural state for all our waters in Europe for 2027.

Q249 Chair: Minister, you signed off on this plan—75% of water in good



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condition. How much is in good condition at the moment?

George Eustice: As you said, I think we have quite a high number of waters that are not in good condition.

Q250 **Chair:** It looks like 12% of rivers are in good condition, and if my maths serves me right 22% of surface and groundwater. When do you think 75% will be in good condition?

George Eustice: I do not have a precise figure that I can give you, for the reasons that I gave earlier. I think the important thing is to have the trend moving in the right direction, and that you are putting in place the right measures as soon as you can to get the trend moving in the right direction. You should have targets that stretch you, and that is exactly what a lot of these EU targets do.

Q251 **Chair:** We have been in this directive for nearly 18 years, have we not? This directive came in in 2000?

Helen Wakeham: Yes.

Q252 **Chair:** So over 18 years we have 12% of our rivers in good status. Okay, we are going to move on. John?

Q253 **John McNally:** Thank you, Chair. I want to go back to what Geraint was saying about fracking, and I would be very interested where you get these reassurances that these wells will not leak. I can assure you that the chairman at one of our public meetings out in Falkirk said there is no guarantee that these wells will not leak, and the perception of leaks alone is enough to scare the wits out of you. I think you could save yourselves a lot of work and a lot of future grief if you just decided to say no. To add to that, I think under the terms of confidentiality they cannot tell you what chemicals they are using when they are putting it down the well.

Helen Wakeham: I am not a technical expert in the process, but I am responsible for the water quality permitting in England, and we would not give a permit. There is something around where the drinking water sits within the strata and where the hydrocarbon sits within the strata, and we are not permitting where the groundwater for supply is.

Q254 **John McNally:** Back to my own question now. At this Committee we have heard from several prominent scientists that they are greatly concerned about the current monitoring and measuring situation of the pollutants, and we were told that they are inconsistent, often measuring the wrong nutrients, and that it was too infrequent. They suggested that this could lead to an incomplete evidence base, poor policies and the wrong investment decisions. Those are very serious comments that these people made. My question is: are we measuring the levels of nitrate, phosphorus and ammonia correctly and consistently across these different bodies of water, geology and landscapes, and are we measuring them frequently enough?



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Helen Wakeham: That is clearly one for me. We monitor in more than 8,000 places in England, so there are 6,000 surface water monitoring points, and 2,400 groundwater monitoring points. Those will be monitored on a weekly, monthly, or annual basis depending on where they are and how much is changing. In those places we are testing we are doing 2 million tests a year on our water. When we go out and take a sample we test for lots of things at the same time, so we have a very rigorous system of monitoring. I think we have world-class understanding of our water systems, far better than most other places in the world. I really do not agree that we do not understand.

Q255 **John McNally:** Professor Jarvie told us that the present monitoring system regime for nitrogen pollutants is not fit for purpose. Do you disagree with that?

Helen Wakeham: I would refute that. I would say that there is a difference created by the way we have applied the Nitrate Directive in the UK and in England where we have gone for Nitrate Vulnerable Zones. To do that, that requires us to take a lot more samples and to understand the water environment in far more detail than those countries that have gone for whole territory designation. We do take a lot more samples and we look at nitrate a lot more closely than those other countries in Europe with a whole territory designation.

Q256 **John McNally:** Would you have a percentage of water bodies that are monitored and how often? Would you be able to give us a figure of the amount of water that is out there and how often it is monitored? Two million sounds quite a lot but it does not tell you anything. It is a lot, but it depends on the scale of things. How often is that? It might be a week, it might be a month, depending on the type of water. There is an awful lot of water out there.

Helen Wakeham: That is true—certainly this winter, happily. I think it depends on what we are monitoring to try to establish. If we are trying to establish the state of our environment, our monitoring programme could be a lot more modest than it is now, because we could understand the state of our environment through a mixture of monitoring and modelling. If we want to understand what a problem is in a particular locality we might want to monitor more, but we might also bring together different sorts of evidence such as pollution incident evidence, chemical monitoring, biological monitoring, and information from our catchment partners. Monitoring of water and taking samples is only part of the information that we use to understand the environment.

Q257 **John McNally:** Would you say that you measure 20%, 30%, 40%? What kind of figure of all the water that is out there is monitored?

Helen Wakeham: We have 8,000 monitoring points, so we monitor almost everywhere.

Q258 **John McNally:** Everywhere? Almost everywhere is monitored?



Helen Wakeham: Almost everywhere but we do not—

Q259 **John McNally:** Yet Professor Jarvie said that the present monitoring system for nitrogen is not fit for purpose. Is that taken out of the water bodies altogether? What is she saying there?

Helen Wakeham: I am not entirely sure what her point is. I think she is right to say that our monitoring programme has evolved and we monitor for a number of purposes and a number of different places and in a number of different ways. We are midway through a strategic review of our monitoring at the moment, which will look at exactly what type of monitoring we need, where to inform the state of the environment, and where to inform our regulatory work and the 25 Year Plan. We are looking across all of our monitoring to understand how we can do it better.

Q260 **John McNally:** I will press you a wee bit further on this very straightforward question and hope you can answer it. How much does the current regime cost at present? How many staff are involved and how has this changed over the past five years?

Helen Wakeham: I cannot give you the overall cost—I saw it on a piece of paper this morning, but it is not in my head. We will supply the total cost of our monitoring programme.

Our monitoring programme varies over the years in response to what we need to do. So in the last 10 years it peaked in 2013 because we were preparing the evidence that we needed to inform the cycle of river basin and management planning. In 2013 we were doing the maximum amount of evidence collection to inform the plans for 2015. We have now scaled that back because we do not need to prepare the next set of plans until 2021. By that time we will be monitoring in a different way. I do not think the overall number of samples is the best indicator of how efficient and effective our monitoring programme is.

Q261 **John McNally:** In the last five years, is it more or less the same, or has it dropped? Has it gone up? I know you said you peaked but—

Helen Wakeham: Where are we?

John McNally: 2018.

Helen Wakeham: Yes, I am working back. So it peaked in 2015. We are taking fewer samples than we were taking in 2013, but that was a peak of our monitoring activity in support of the river basin management plans, so in 2010 it would have been broadly where it is today, just because of where we are in the cycle.

Q262 **Chair:** So it ebbs and flows? I couldn't resist that.

Helen Wakeham: Irresistible.

Q263 **Chair:** Okay. Are you going to review the monitoring regime?



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Helen Wakeham: We are reviewing the monitoring regimes now. We are doing something called the Strategic Monitoring Review, and we are looking at all the monitoring we do with our partners with a view to making a distinction between the monitoring we need to do to understand the state of the environment broadly, which will be a small standing programme, and a larger agile programme that enables us to look for particular problems in particular locations.

Q264 **Chair:** When will that be completed?

Helen Wakeham: We are talking about it at the moment, so we should be completing it in the next two years. We are at the point of talking to our partners about what that programme looks like. In particular we want it to be far more partner-led in talking to the catchment-based approach, for example, about what people want to see from our monitoring programme.

Q265 **Colin Clark:** A number of witnesses that we have seen have claimed that the Environment Agency is under-resourced, and that despite having the powers it needs it is unable to carry out enough inspections to ensure compliance with existing legislation and water quality and pollution. Would you like to comment on that?

Helen Wakeham: The Environment Agency is very efficient with the resources that it has. It is certainly true that we do less farm inspection than we did in the past, perhaps. However, the inspections that we do are very highly targeted and they are part of a number of activities that are led by Natural England, by catchment partnerships, or by Catchment Sensitive Farming Officers that are attempting to help farmers comply with the legislation and reduce pollution. The Environment Agency is part of a much bigger picture.

Q266 **Colin Clark:** How has the spend changed over the last five years? You are saying it is targeted. Has that reduced the cost of doing it?

Helen Wakeham: Yes, it has reduced the cost of doing it, but it is very hard to compare like-with-like, because as the Environment Agency has done less general farm inspection, the amount of effort that has gone into, say, catchment sensitive farming, which is targeted at the places of most concern, has gone up.

Q267 **Colin Clark:** How many staff are assigned to inspection and compliance activities and how has this changed over the last five years?

Helen Wakeham: Currently we have around 80 to 100 officers involved in farm inspection, but that probably amounts to 30 full-time equivalents. I do not know exactly how big it would have been five years ago, but certainly more than that.

Q268 **Colin Clark:** Your inspection regime has become more targeted to the number of people?

Helen Wakeham: Absolutely.



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Q269 **Colin Clark:** What has been the number of inspections and successful prosecutions for non-compliance over the same time period?

Helen Wakeham: Since 2012 there have been 20 prosecutions—2016 I think would be the last year we had figures when we did 600 inspections. However, I do not think across any of the Environment Agency's regulatory regimes we would use the number of prosecutions we do as a measure of success. When we inspect we give advice and guidance to farmers. If we believe there is something wrong we produce a farm action plan. We expect to see action taken on that and then we use our enforcement and prosecution policy, which tells us what we do when, and so we might issue warning letters; we might issue cautions. Prosecution is at the end of a very long road. It is not our most efficient mechanism because it takes a lot of our resources to take a prosecution case.

Q270 **Colin Clark:** You want to achieve positive outcomes rather than get to prosecution?

Helen Wakeham: Absolutely, and prosecution is very rarely the best way to do that.

Q271 **Colin Clark:** Minister, what role does the Rural Payments Agency play in ensuring compliance?

George Eustice: The RPA runs the cross-compliance inspection regime, so there is a risk-based model where it will do random visits—I think to about 5% of farms. Then there is also overlaid on that a more targeted top-up where there is a particular history of non-compliance.

Q272 **Colin Clark:** You go back to offending farms?

George Eustice: Yes, I think it is several thousand farm inspections per year. All of the water quality requirements that we have in law are also cross-compliance requirements as well.

Q273 **Colin Clark:** Do you have the figures to hand on how many inspections the RPA makes and what resource it has to do this in terms of numbers?

George Eustice: I do not have them here, so I would have to get you the precise figures. Broadly speaking we have in the region of 400 or 500 field staff out doing these inspections—from memory I think it is in the region of around 4,000 inspections a year in England, although some of those can be using remote sensing technology rather than necessarily a physical farm visit.

Q274 **John McNally:** Following on from Colin there, am I right in saying that the What's in Your Backyard? service is closing, or is it suspended? The Environmental Agency, I believe, is closing this. Is that correct? If so, what effect will that have on measuring?

Helen Wakeham: It is not closed because I looked at it last week. There are certainly conversations going on about what aspects of the What's in Your Backyard? service need to be retained. There are certainly parts of it



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that are actively used by farmers and farm advisers and we are looking at how we retain the parts that we need.

Q275 **John McNally:** Thank you for that. I thought the whole service was closing.

George Eustice: Just to clarify, there had been a proposal to close it and replace it with something that did a similar job but not all of the functions.

Q276 **John McNally:** Has it been remodelled?

George Eustice: No. I think it is an important service. It is something that about nine months ago I said we should retain and keep until we ensure that any more modern platform to deliver this activity is delivering all of the same functionality. It had a reprieve. You may have had some comments or intelligence that was out of date.

John McNally: Okay. Thank you.

Q277 **Mr Robert Goodwill:** We have heard already from a number of witnesses that for more progress to be made in water catchment areas, enforcement has to go hand in hand with more incentives for farmers and water companies to go the extra mile beyond best practice. Could I ask you both how we ensure that incentivising stakeholders is linked to proportionate compliance activity to avoid perverse outcomes that may result in paying the polluter, and who should pay for such incentivisation?

George Eustice: In terms of the way we are redesigning our farm policy, moving away from direct payments based on an arbitrary area to targeted payments for public goods, I am really interested in how we could incentivise farmers to participate in catchment-sensitive farming schemes, to support them to get the advice and the capital investment that will help them to deliver against that advice, and possibly also to incentivise different approaches to soil husbandry that can improve the problem.

My own view is that while the "polluter pays" principle is important and it is there in our Environment Plan, we must not allow it to become an excuse to basically sit there with our arms folded saying, "The polluter can pay for this. It is not our problem". We have an opportunity in the way we are redesigning agricultural policy to be much more proactive in terms of saying that we want farms to join these schemes. Such schemes have a good track record. We are willing to support this type of activity, and we are willing to support farmers to make investments that will help tackle this problem of pollution, whether or not there is a regulatory requirement alongside it. In the past there has been too much of a binary divide and the result is that we have not seen the progress we need in some of these areas. I suppose what I am saying is that the quid pro quo for leaving behind a subsidy system is that we should not allow arbitrary principles and rules to get in the way of delivering effective policy. I think catchment-sensitive farming schemes have been a great success.



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Helen Wakeham: We have covered some of this already, I think. When we have a coherent set of baseline standards it will be much easier to assess compliance. The time the Environment Agency, the Rural Payments Agency and Natural England spend on farms is absolutely dwarfed by the amount of time that assurance schemes are spending on farms. The Red Tractor scheme, for example, does 45,000 farm visits a year to our 600.

Part of the answer, I think, is some kind of self-assurance through the supply chain that will give us some confidence in our regulatory baseline. When we have that, the “polluter pays” principle stands and payment for public goods sits on top of that. There is something around the supply chain that gives us that assurance that that regulatory baseline is met. That is the bit that is missing from the system we have at the moment and the opportunity we have in the future, when we can decide for ourselves. We already talk to the assurance schemes and we exchange information with the Rural Payments Agency but there is much more scope for us to share monitoring information, and to share regulatory compliance information between ourselves, the water companies and the assurance schemes. It seems to me that that will give us a much more robust way forward.

Q278 **Mr Robert Goodwill:** We have already heard in evidence that much of the groundwater nitrate is a long-term problem that will need a long-term solution. Indeed, I have even read that some of the nitrate down there is the result of ploughing out grassland in the Second World War to produce more food at that time. A number of witnesses argued that there needs to be more support and incentives for water companies to invest over the longer term—more than the current five-year regulatory cycle. Could I ask the Minister specifically what steps you have taken or can take to encourage this more long-term approach?

George Eustice: Obviously Ofwat as the regulator has regular dialogue with all of the water companies about their investment plans. When there is a discussion on water pricing or water charges it is always linked to what investment they might need to make improvements. I have seen a number of very imaginative schemes. In Exmoor I visited the Mires project run by South West Water, which basically performs a number of functions. It can slow the flow of water in winter, reducing the flood risk, and release a bit more water in the summer when you can have the challenge of drought. It can lock up carbon, and it can improve the quality of the water because you do not get these drainage channels flushing nutrients down. Some of these softer schemes or soft defences that have holistic outcomes and deliver a number of wins can be really important. Ofwat, as the regulator, are the key people who keep progress moving in this area.

Q279 **Mr Robert Goodwill:** Do you think nationalisation of the water companies would help or hinder in this process?



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George Eustice: Personally I do not think it would help but there is always a case for saying that we should keep the pressure on Ofwat to make sure they have the right expectations of the water companies and that they are delivering what we need them to.

Q280 **Mr Robert Goodwill:** Minister, can I further ask what incentives you are currently offering farmers to take a longer-term approach such as alternative ways of managing manures, wastewater or crop cover, and what plans you might have in future to introduce more of these incentives?

George Eustice: We have a number at the moment. We have tried to flex the Rural Development Programme, which is the Pillar 2 part of the common agricultural policy, to make available capital grants in particular. Last year we ran a scheme that was heavily subscribed to provide grants to help farmers put covers on slurry stores. That can be particularly powerful to help air quality but also to make sure you do not get rainwater going in and aggravating the problem with slurry stores. That was subscribed and we are looking at a similar call for projects in that space at the moment, which we expect to go out shortly. That will be looking at both slurry storage facility improvement through things such as lids and covers, and also rainwater management systems as well, so that you ensure that run-off from shed roofs and the like does not end up in the slurry store.

Q281 **Mr Robert Goodwill:** Do you see in the future money that is currently being used for direct payments being switched into that type of scheme?

George Eustice: That and more. I envisage the future scheme having capital elements to make sure we are really supporting that kind of investment in infrastructure. Coming back to what Helen said earlier, we have seen specialisation and a concentration of dairy production in the west country but probably not a corresponding increase in the infrastructure you need to manage that. We should be willing to support investment in that kind of infrastructure, but also try to incentivise different approaches to the way we manage soils and the way we use fertilisers, maybe by reducing the use of chemical fertilisers in some arable soils. I am quite interested in an idea Denmark or the Netherlands have of a “farmland manure bank”. They move it around to where it could be used properly so that you are recycling the nutrients, rather than worrying about waste in one part of the country and buying chemical fertilisers for another.

Q282 **Alex Sobel:** We have been told that there tends to be a single-track approach on pollutants, tackling one over another—for instance tackling nitrates over phosphorus. Can you give some examples of how you have implemented the directives on water quality and pollutants in a joined-up way and taken account of other issues of climate change? Professor Jarvie told us last week that there is an opportunity for a more coherent and holistic approach and an overarching nutrient strategy. I would like to hear if that is something that you are planning on doing.



George Eustice: Yes, she probably makes a very good point and one of the opportunities that we have as we leave the EU is to think about what type of environmental regulation we have and how we should design it to have that more holistic approach. As I said earlier, the design principles of the Water Framework Directive are better than the Nitrates Directive for that reason. Often the Nitrates Directive is targeting a problem on a particular watercourse. Eutrophication, for instance, is a challenge but we know phosphate is the main driver of that and managing phosphate pollution is probably more important if your target is to deal with eutrophication. There are differences. The environmental challenge of phosphate is probably a more serious one and we should be trying to do more to address that. When it comes to water drinking quality, nitrate is still, as has been pointed out, over where it needs to be, particularly on groundwater, and it remains a particular challenge.

In summary, phosphate is probably a greater challenge in our surface waters and rivers and we probably should be trying to identify more that we could do. Nitrate remains the primary challenge in our groundwater.

Q283 **Alex Sobel:** Can you give me any examples of trying to link up these different types of pollutants?

Helen Wakeham: The place where we see it is the farming rules for water. At the moment they will sit alongside the Nitrates Directive because they have to, but having a set of standards that relate to how we manage air, soil and water together, putting the responsibility on the farmer to describe how they do that taking into account their local soils, their local weather and so on, will give us that coherent and consistent approach that we need. I entirely agree with Professor Jarvie that trying to tackle all of these separate things through the separate instruments that have evolved will not get us to where we want to go.

There is something around having a coherent set that takes soil, air and water into account, but there is probably something around the professionalism of the industry. What we have got from the nitrate vulnerable zone experience is that, particularly in the east of the country, arable farmers have professionalised and are much more cognisant of the nutrient value of what they have on the farm. For me, more professionalism in the industry will be required to get us where we need to go, if that helps.

Q284 **Alex Sobel:** Has the emphasis been right in the Environment Agency in terms of how you have been tackling this, or do you feel that you have maybe overemphasised nitrates over phosphorus?

Helen Wakeham: The Nitrates Directive is what it is and we continue to enforce it because we have to. What we have done around the Water Framework Directive is much more interesting, modern and effective because the catchment-based approach does give us a proper opportunity to have a catchment-based conversation about what the solutions are. They are very rarely about tackling one pollutant in one



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way in one location. A catchment partnership looking at what needs to be done in a locality to deliver the improvements that are needed is the way to do it. I think we are doing the right things but there are things we would seek to do to modernise some of the regulation that we have to get that consistent baseline. At the moment we are stuck with certain standards and ways of working that we must meet, particularly under the Nitrates Directive.

Q285 Alex Sobel: In terms of how DEFRA is monitoring and reporting performance on organic nutrients—organic nutrients are managed to make sure that they are properly recycled and reused to reduce the need for inorganic fertilisers. Are you reporting performance on that particular aspect currently?

George Eustice: In terms of those basic rules, the Environment Agency would enforce those through their usual procedures and usual inspections. Farmers would be expected obviously to demonstrate that they had carried out the requisite soil tests that were necessary to reach an understanding of what is needed.

Q286 Alex Sobel: How are you reporting that? What is the reporting mechanism for that?

George Eustice: We will know, as we do now, how many inspections have taken place. We will have evidence and the Environment Agency will record any breaches that it notices. Obviously that is then fed back through the system. These do not come into effect until April. They are about to start and they will be enforced from that point on. While they will not be formally published as such, this information is always open and indeed Committee discussions like this is where it tends to come to the fore.

Alex Sobel: There is a question for you on it later in the year.

George Eustice: I am sure there is. I look forward to the PQ on this issue.

Helen Wakeham: DEFRA has just set up a project to look at what the baseline is against which we will measure progress and to look at the different ways in which we will monitor and assess both compliance and progress against the farming rules for water.

Chair: Okay, thank you. We are going to move on.

Q287 Dr Matthew Offord: I want to ask the Minister's view on nitrate vulnerable zones. Would your assertion be that they should be on a nationwide basis or, like the Welsh Assembly, would you agree that they should be on a selective basis?

George Eustice: We looked at this in quite a bit of detail about two years ago because it is every four years, I think, that we have to review the zones that we have and review the watercourses. We looked at the option of just having a simple designation and designating the whole



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country, as I think Wales has done or Northern Ireland did. We decided in the end, looking at it, that the more proportionate thing would be to use the NVZs because quite a comprehensive set of things are required. More importantly, there is quite a lot of bureaucratic recording that does not necessarily add much to the endeavour but is a big frustration for farmers.

Rather than require that everywhere, even where you do not have a particular problem, we decided that we would simply extend the area. We added some additional areas and I think there were one or two areas that came off because they were no longer a problem and no longer crossed the threshold. We concluded that was the right thing to do. It is also that same point, that we said, "Let's introduce some proportionate national rules", and those are the basic rules for farming that I have described, which will take effect in April. Those will be the universal rules that try to improve things in this space. We just thought it was disproportionate to extend NVZs to the entire country, even where there was not a specific problem.

Q288 Dr Matthew Offord: Are you saying that the Department's policy is to look at other measures for nutrient issues, such as, for example, slurry storage?

George Eustice: Yes. My view is that if you look at the evolution of our approach to tackling this challenge, in the last 20 years or so it has been largely about just trying to follow the directive. I have been in DEFRA for a number of years now and one of the things that I sometimes find frustrating is that officials in our Department are so run ragged trying to do this report or that report, answer that questionnaire and say whether they have recorded this or that correctly, that we sometimes lose sight of what we are doing and what we are trying to achieve with it. It is all about compliance with the EU regulation.

We are now trying to build out from that and say: how can we completely reshape the way we run our agriculture policy, the nature of the regulations we have, the way we enforce them, the culture of enforcement, the advice that we give and the adoption of a catchment approach? How can we try to craft it into something that can deliver far better results as we go forward, not just relying on clunky regulatory intervention, but having an important regulatory baseline and also getting the incentives in the right place so that we can drive culture change?

Q289 Dr Matthew Offord: What about other measures that you can take to encourage an uptake of wetlands, cover crops, woodlands and other strategies to mitigate land-based nitrate? Does the Department do that?

George Eustice: It does in a limited way at the moment through some of the Pillar 2 schemes, the old entry-level stewardship and now the countryside stewardship scheme, but it is exactly that kind of work we want to do much more of. We want proper incentives for farmers who



have cover crops to reduce soil erosion over the winter, use of grass leys with nitrogen-fixing flowering crops so that you get a substantial reduction in your use of fertilisers. We must look at creative solutions on slurry and farmyard manure, so that rather than seeing it as a waste product that we do not know what to do with, we start to see it as a resource that is part of the cycle of life and that we can use to improve soil health without always relying on chemical fertilisers. If you get some of those types of genuinely holistic approaches to farm husbandry, and to the stewardship of our soils and our land, and if you recognise the interconnections between soil management, water quality and air quality, you can really start to get significant progress.

We have a lot of data from evaluations that have been done on various environmental land management schemes from roughly 1990 onwards that give us a pretty good idea of what works, what does not work and what, if we had a free hand, we could do more of. It is a real opportunity to put much more emphasis on catchment-sensitive farming and drive behaviours on some of these fronts.

Dr Matthew Offord: Thank you.

Q290 Chair: Before we move on, one of our witnesses yesterday on the Environment Plan talked about some of the farmers who had been involved in some of the entry-level and high-level Pillar 2 schemes just ploughing up what they had done because of the uncertainty over what is happening with Brexit and what the future payments are going to be. One of our witnesses suggested that a signal needed to be sent by DEFRA Ministers to say that in future, farmers who had received money for public goods who then destroyed those public goods during this period of uncertainty should not in the future receive payments for public goods. What is your response to them?

George Eustice: I know some people have raised that concern and it is certainly well-documented that we have had administrative problems on the new schemes. There have been a number of contributing factors to that.

First of all, the schemes used to be able to start in any month of the year, which spread the workload for Natural England in processing applications. The new EU regulations on the new scheme dictated that every agreement must start on the same date at the beginning of the calendar year. That creates a massive spike in workload in terms of processing those applications. They also adopted new regulations on the so-called IAC system of regulating people. There was a far greater amount of cross-checking that needed to be done with the farmer's main subsidy application.

The combination of those two things has caused a massive spike in administrative burden and that has hit us particularly hard because in the UK, on these Pillar 2 schemes, we have always had the view that the environment is complex, so we should have quite a long menu of options



that farmers can have and allow the flexibility for Natural England officers, working with the farmer, to put together effectively a bespoke agreement that works for their farm. That has delivered some great results. One of the lessons of the last 20 years is that that is what works. The problem is that the administrative changes that the new EU changes brought in have made that a very difficult thing to deliver in practice and it has caused us huge problems.

Certainly among people who have come out of entry-level stewardship there has been a reluctance for them to go back into the mid-tier countryside stewardship. We tried to strip out as much of the checking and administration as we could and to offer some simplified packages that are open for this year, but my understanding is that it is much more likely that people coming out of the old HLS will go into the new higher-level stewardship scheme of countryside stewardship. We have given clear undertakings that the Treasury will underwrite those agreements for the duration of the agreements whether we have left the EU or not. Those agreements, once signed, stand and are underwritten by the Treasury for the lifetime of the agreements. We have also made clear, and Michael Gove made this clear in his speech to the NFU, that anyone who enters an agreement now under the existing schemes will not have their interest compromised by the way that a future scheme is designed. I think, rather than approach it the way your witness suggested—

Q291 **Chair:** That sounds like it could be a yes.

George Eustice: Rather than saying, “If you come out then we might not let you back in”, I think it is better to say, “Do not come out. You do not need to come out. If you have an agreement that expires, we want you to go into the current countryside stewardship either at the mid-tier or the higher tier”. We fully intend that our future policy will enable agreements akin to those to be rolled forward thereafter as well because those Pillar 2 schemes, particularly the higher-level schemes, are one of the things that have genuinely delivered environmental outcomes and we should not lose that.

Chair: Okay. I have opened a Pandora’s box. Very quickly.

Q292 **Mr Robert Goodwill:** Could I just point out that I have the exact opposite situation in a field on my farm that has been set aside for some time because the bridge is no longer strong enough to carry combine harvesters? It has been about 12 years and bushes are starting to grow there. The Rural Payments Agency has written to me and said, “This land is no longer eligible because you cannot graze or put crops on it. Therefore unless you remove the bushes”—those are actually a great habitat for all sorts of wildlife—“we will not give you the subsidy”. I have taken the decision to take less money from the Rural Payments Agency and leave those bushes there. That might become part of a future scheme that we are applying for but it seems weird that I am being asked to remove this environmental feature of that field to enable me to maximise my subsidies.



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George Eustice: All I can say is that I completely agree. One of my deep frustrations managing the Pillar 1 part of the common agricultural policy is that there are lots and lots of perverse incentives of this sort. Our inspectors end up fretting about bushes in a field in Derbyshire or in your case Yorkshire somewhere, deeming them ineligible features under EU law. It literally creates a situation where farmers are encouraged to chop down trees because they are an ineligible feature when at the same time we are trying to encourage farmers to plant trees. I very much agree and those sorts of very clunky rules that are part of the eligibility criteria for the existing subsidy scheme are very much something we would want to leave behind.

Chair: Colin, do you have a comment? Could you make it very quickly?

Q293 **Colin Clark:** Yes. Just on that very same point, I know agriculture in Scotland is devolved but what we found was that EU policy ended up being short-term because they changed the scheme. In the same way Robert did, we ended up taking out water margins, ponds, beetle banks and even trees because they were no longer included in our agricultural land. Would you say that EU policy, maybe not deliberately, ended up being short-term and what we want to move towards is a long-term environmental policy?

George Eustice: Yes, I do agree. Everybody knows that I campaigned to leave the EU but I think that when it comes to the common agricultural policy, it always had good intentions. It has always been trying to do the right thing but the bureaucratic nature of the way it is designed usually means that it falls down in a heap on delivery. There are lots of these things that really do not work and we expend huge amounts of energy on them. We can do far better.

Chair: We will leave that. I am sorry I raised it, but I think we got some answers there that are quite interesting. We are going to go back to nitrates now.

Q294 **Kerry McCarthy:** My question is quite broad in that it is about the whole concept of public money for public goods. That would include better water and air quality, we would hope. I am just interested in how you will actually achieve this and whether you will be able to encourage farmers to take you up on this. We heard from the water companies that they offer incentives above and beyond what is legally required for farmers not to pollute land. They offer incentives to farmers. Some take it up but others just do not seem to be interested. To what extent do you feel that the carrot rather than the stick approach is going to have an impact?

George Eustice: I think it definitely can. The trick is in the design of the scheme and the options that you have that farmers can go into. The point I would say that is different is that if your model is the Single Farm Payment as it stands today, it is effectively a legacy payment that is being phased down and the writing is on the wall. It is eventually going to go and you are opening the door to a new scheme. If you get the timing of these things right, there is an opportunity for it to be a no-brainer for



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farmers to leave the old scheme and enter the new scheme in a way that means you are genuinely delivering those benefits, those public goods for public payments.

It is why you have to do the two in sync. If you do not, basically the concrete will set and then you will be trying to chivvy farmers to get into something after the event. If you are offering that at the same time as phasing down a payment on which they are quite dependent, and you are giving payments that are generous enough to be a proper incentive to get involved in catchment-sensitive farming, I think you get there. It is why, coming back to the point I said earlier, we should not allow things like the "polluter pays" principle to become an excuse for inaction, or for us to sit on our hands and not to bother trying. We should be trying to use the state of flux that we have, through phasing out the Single Farm Payment and phasing in a new system, to make it a no-brainer for farmers to make that switch.

Q295 Kerry McCarthy: At the EFRA Select Committee, which I also sit on, we had some interesting evidence from Tim Breitmeyer from the CLA about polluter pays. It was an inquiry into the Command Paper that has come out. It was slightly odd. He was talking about the danger of the regulatory baseline being pushed higher as we leave the EU and he said, "When it comes to terms like 'polluter pays', that is concerning language that just breeds greater uncertainty". I came in and said, "Well, polluter pays already is meant to apply to you. It is a principle". He elaborated then by saying, "It is extremely difficult to apply in the countryside when it comes to something like diffuse pollution because it is very hard to work out who the polluter is", and then he went on to talk about Severn Trent having a problem with the level of metaldehyde in their water but it coming from a whole catchment and not being able to work out who the polluter was. How would you answer something like that and how would you then reward people for trying to deal with pollution when they can say, "It is not me that is causing it"?

George Eustice: He probably makes a good point and it is similar to mine, that we should not allow that "polluter pays" principle to stop us trying to do positive things. We have something similar with the schemes that we have—

Q296 Kerry McCarthy: Could I just say, because I do not feel like I made myself clear, if they are being subsidised for trying to tackle pollution that is emanating from their land, how do you get around the issue of them saying, "I have done all I can. It is someone else who has caused it and it is coming from elsewhere in the catchment"?

George Eustice: Helen might come in here, but it is a question of degrees in my view. If there is proper negligence or even recklessness and that leads to a pollution incident, then clearly that is a regulatory issue. Sometimes with diffuse pollution there is no intent there. Sometimes it could just be that the weather is against you and you have ended up with some diffuse pollution that you otherwise might not have



done. You might have completely abided by the NVZ rules on spreading but then there was a weather event, a flash shower or something, and it led to a problem. In those circumstances, to come along wagging your finger and saying “the polluter pays” is problematic.

The other thing I would say is that with some of the schemes we have had, such as giving farmers grants to put lids on slurry stores and other such things, we have often had to go through the context or through the prism of this being a productivity gain for farms because some would say, “If it is to help them meet a regulatory requirement, that does not satisfy the rules”. My point is that sometimes slavishly abiding by those rules, and if they then become an obstacle to the delivery of your objectives—you just have to be careful you do not allow that to happen. I do think there is an argument here that we should be proactively supporting and incentivising the right sorts of behaviours. We have a chance to do it.

Q297 Kerry McCarthy: You talked about increased productivity, more competition and so on. How do you balance that against the public good side of things, particularly in this context? We have already briefly touched on whether intensive farming goes against some of the things that we are trying to achieve. Do you think there is a way of balancing that?

George Eustice: One of the things I want to try to do, and one of the ways we designed this agricultural policy, was to try to remove some of this antagonism that you get between green NGOs on one side and farmers on the other. You get farmers who say that if you talk about the environment you obviously do not care about food, and green NGOs—I am paraphrasing—say, “You are talking a bit too much about farming. We are worried about the environment”. We have to try to break down that antagonism and recognise that if we change our approach to farm husbandry and farm in a different, more sustainable way, you can have productive, profitable farming and those big environmental gains.

It is one of the reasons why, when it comes to the specific design of the schemes, I do not want it just to be environmental experts. I want farm agronomists as well, involved in the nature of the schemes that we design, so that we are really getting those synergies of a sustainable approach to farming.

Q298 Kerry McCarthy: Just a final question about the enforcement system and monitoring. Does it need extra investment to be able to deal with all of this?

George Eustice: What I have suggested that I would quite like to get to in terms of a system of farm support is, rather than having a chaotic annual application process as we have now with a deadline that everyone has to hit, farmers could maybe enrol on a system at any time of the year, like the old ELS used to be. You might move to agreements that could be three, four or five years, so that you did not have to have this annual bureaucracy going on. You might try to move to a system where



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you would have a Natural England officer who was effectively an account manager for a group of farmers in a geographic area, and they would become a known, named contact for those farmers. He might visit the farm, say, once a year, just to check that everything is in order and that they are actually doing what they say they are doing. That would take some of the bureaucratic tension out of it so that we use our time and our energy doing things that really matter. That is the kind of system we would like to try to move to.

Q299 **Kerry McCarthy:** How soon can we move towards that?

George Eustice: As I said, we would like to start this as soon as possible after we leave the EU. In practice, that probably means after the end of the implementation period. We envisage us rolling this out over a period of, say, five years.

Chair: Thank you very much. A final question from Caroline.

Q300 **Caroline Lucas:** The Republic of Ireland and Northern Ireland obviously have shared water areas, so if we do leave the EU how will they be managed?

George Eustice: Do you have the answer to that? I do not have the answer to that, and when I have tried to answer these questions—

Helen Wakeham: The Environment Agency only operates in England, but there are lots of cross-border issues already within the EU and within the UK. In general, delivery bodies work very well to manage those. There are always practical ways in which we can work together because essentially we all want to achieve the same thing. Our experience at the moment in working cross-border is that it works very well with common sense.

George Eustice: It might be useful if we write to the Committee saying what happens at the moment with Northern Ireland and the Irish Republic. The approach we have in the rest of the UK is that when you have a watercourse that transcends a boundary within the UK—we have examples of rivers between Wales and England, or Scotland and England—one of the devolved Administrations or the UK Government will take the lead on the whole watercourse.

Q301 **Caroline Lucas:** That is obviously easier if they are both within the broad context of EU legislation. If one bit is and one bit isn't—for example, apparently three out of four river basins are shared between the Republic and Northern Ireland. You will not be surprised that we heard from the Northern Ireland farmers' representatives, who are extremely concerned about this. I think that just saying to them, "It will be down to common sense" is not going to reassure them in the way they would like to be reassured.

George Eustice: We have a model that we know in the UK works quite well, where somebody takes the lead and they consult the others. In the



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case of Ireland, we will write to the Committee specifically on how they approach management of effectively shared watercourses and river basins.

Helen Wakeham: There are technical advisory groups. There is a technical working group that provides technical advice to the different Administrations.

Q302 **Caroline Lucas:** That is going to be easier as long as there is greater convergence between the standards. If there is a divergence over time, would you acknowledge that that is going to be a lot more complicated?

George Eustice: Potentially, but my view in this, as in so many areas, is that while politically we are going to become separate, it is entirely possible that in a lot of these areas you could still have a shared approach when it comes to getting a technical understanding of evidence, for instance, and the evidence base on different factors.

Q303 **Caroline Lucas:** If one bit of the river basin has to meet certain standards and another bit of the river basin has to meet lower standards, and obviously they are connected, then how do you resolve that?

George Eustice: It will be one of the issues we can add to the list of Northern Ireland border issues in the context of Brexit. It is—

Q304 **Caroline Lucas:** Are you consulting about it now? Could you tell us who you are consulting with and what the timetable is for such a consultation?

George Eustice: As far as I am aware, negotiations with the EU have not progressed on that particular issue. As I say, we can write to the Committee to confirm what happens now and what discussions there are on what will happen in the future.

Caroline Lucas: We look forward to it.

Q305 **Chair:** Do you think the UK will still be complying with the Nitrates and Water Framework Directives after Brexit?

George Eustice: Yes, we have been clear that those will come across through the Withdrawal Bill and yes, we are not going to reduce our standards. As we said earlier, it is fair to say that the design and structure of the Water Framework Directive—I think a number of your other witnesses would probably concur with this—is better than the Nitrates Directive in terms of its design, and so you would over time have an opportunity to try to look holistically at how we manage all the pollutants in the water, and maybe consolidate some of these different instruments into one that is more effective and more consistent.

Q306 **Chair:** If that is the case, why does the 25 Year Environment Plan not aim for all rivers and all water areas in good ecological status for 2027, given that we are going to be complying with that?

George Eustice: As we said earlier, the 25 Year Environment Plan is a broad plan. It does not list every single target that is in every single



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directive, but those directives are coming across through the Withdrawal Bill.

Q307 **Chair:** Okay. Thank you very much indeed, Minister and Ms Wakeham. We will leave it there.