

Environmental Audit Committee

Oral evidence: National security assessment and COP-17

Monday 18 May 2026

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Members present: Mr Toby Perkins (Chair); Julia Buckley; Jonathan Davies; Carla Denyer; Barry Gardiner; Chris Hinchliff; Blake Stephenson; John Whitby; Sammy Wilson.

Questions 1-40

Witnesses

I: Lieutenant General Richard Nugee CB CVO CBE, Non-Executive Member for the Defence Safety and Environmental Committee, Ministry of Defence; Laurie Laybourn, Leader, Strategic Climate Risks Initiative, Associate Fellow, Chatham House, Associate Fellow, Institute for Public Policy Research, and Visiting Fellow, Global Systems Institute, University of Exeter; Dr Sarah Redicker, Interdisciplinary Researcher, University of Exeter; and Georgina Chandler, Head of Policy and Campaigns, Zoological Society of London (ZSL).

Examination of witnesses

Witnesses: Lieutenant General Richard Nugee CB CVO CBE, Laurie Laybourn, Dr Sarah Redicker and Georgina Chandler.

Q1 Chair: Welcome, everybody, to the first meeting of the Environmental Audit Committee in the new 2026-27 parliamentary Session. We have a special session today on the Government's national security assessment of global biodiversity loss, ecosystem collapse and national security. For the benefit of those watching who are not aware, this was a document evidently provided internally within Government as a national security assessment that was not intended to be published, but was ultimately published as the result of a freedom of information request. We understand that the document the Government published was effectively the highlights of such a report, not the unabridged version, which, despite our request to see it, has not so far been forthcoming. Given that the report itself was both important and fairly stark, this Committee wished to have a session to discuss its findings and learn more about it.

We have with us a distinguished panel. I will invite each witness to introduce themselves and their area of expertise as it pertains to this report.

Laurie Laybourn: My name is Laurie Laybourn. I am executive director of the Strategic Climate Risks Initiative think-tank. I also hold fellowships at Chatham House, the University of Exeter, and the Institute for Public Policy Research. My work focuses on the very complex, escalating threats to our security that are now here and will only grow as a result of climate change and nature loss.

Dr Redicker: My name is Sarah Redicker. I am an environmental social scientist at the University of Exeter. My expertise is in climate change adaptation. I have been working over the last years on climate change impacts on migration and mobility.

General Nugee: I am Lieutenant General Richard Nugee. I authored the report on climate change and sustainability at the Ministry of Defence. I am also a director of the Climate Change and (In)Security project at the University of Oxford.

Georgina Chandler: I am Georgina Chandler, head of policy and campaigns at the Zoological Society of London. I am an expert in global nature and climate policy and delivery through multilateral environmental agreements.

Q2 Chair: Thank you very much indeed. General Nugee, what do you believe was the likely genesis of the assessment that we have in front of us today?

General Nugee: I don't know what the genesis was, but certainly the Ministry of Defence and others have been asking for some time for a report to go to the National Security Council to understand the security



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implications of climate change and environmental degradation. I think this report is part of the answer to that. The report is certainly welcomed by those who understand that there is a security angle to climate change and biodiversity loss.

- Q3 **Chair:** On the findings of that report and the production of it, would you agree with the Minister for Nature who said this is simply “part of routine cross-government resilience planning”, or do you think that both the production of this report and what is contained within is a little less routine than she indicates we should believe?

General Nugee: My personal view is that it is a seminal report. I think it is the first time outside the Ministry of Defence where climate and security have been linked—climate and biodiversity loss, I should say. They are both part of the report. It focuses on biodiversity loss, but it mentions climate change as well. For that link to be explicit in a Government report by our intelligence organisations is different from run-of-the mill normal work from DEFRA or DESNZ, or one of the other Government Departments. It is important that it is done by the intelligence authorities and agencies rather than by a single Government Department. I think that is different, and its conclusions are different from what you would normally expect.

- Q4 **Chair:** From your perspective, who do you think is likely to have commissioned this work and who is likely to have undertaken it?

General Nugee: Again, I do not know, but I would hope that the National Security Adviser had a part to play in commissioning the work. As I understand it, the way it works is that the National Security Council asks for information about a subject and a report is commissioned. I would assume—I don’t know—that that is how this report came about.

I go back to the fact that this is different because it is our highly respected intelligence agencies who have written the report from an intelligence perspective, rather than from an environmental, defence or security perspective. Our intelligence community have put this together, and they usually respond to the Cabinet Office and the National Security Council.

- Q5 **Chair:** The assessment applies uncertainty frameworks used in intelligence assessments. Can you talk us through what that means and how we should interpret the assessment compared to the policy documents we might normally see from the Government?

General Nugee: What usually happens is that there are two types of uncertainty. One is the uncertainty over sources. If your sources are perhaps slightly more or less reliable, you would put more weight behind a particularly reliable source. I think that, in this case, in this report, those sources have largely been scientific reports rather than individuals.

The other one is the time aspect to it. If they make a prediction of when something might happen, that is also part of the uncertainty. They would try to put a probability and a time element to each of those aspects, whether it is high, moderate or low in this report.

- Q6 Chair:** You described it as a seminal report. The findings, which we will explore in more detail as we go through this session, were very stark and alarming. What sort of action would you expect the Government to take following a national security assessment exposing the potential dangers to our national security in a report like this?

General Nugee: I would expect, first of all, for it to be taken seriously. This is not a report that can be dismissed easily, because of the reasons I have mentioned. I would expect, from that, a strategy and a plan to come out to be able to deal with the threats that this report identifies. I would expect work to be going on by Government—I do not know whether it is or not—to respond to the eight key findings that this report had, of which arguably the most important is that our food security is at risk. They should be doing something about that in terms of planning and potentially action after that.

- Q7 Carla Denyer:** Welcome, panel. Why do you think the Government were reluctant to publish the assessment and are still refusing to publish the unabridged version that we understand exists?

General Nugee: My first comment on that is that the report that was published is itself so stark that I am not sure that it matters too much, but let me come back to that.

I produced a report for the Ministry of Defence that was never published. What the Government did was publish a completely accurate and unabridged synopsis of it that was much shorter and easier to digest, which had all the salient points in it, from which action has been taken. If this report is the same, the published version does not pull its punches much. It probably does not need the level of detail that the actual report has, so I should imagine—I do not know—that the Government would say, “You’ve got a report that is stark enough. You don’t need to see all the detail behind it that is probably not very easy to read.”

Certainly, my report was 120 pages long and would not have made good bedtime reading because it was really detailed and was trying to get to an answer. I would suspect that this is the same—that it is enough to show the report that they have published, because we can act on that, and they should be acting on that.

- Q8 Carla Denyer:** I certainly agree with you that the abridged summary report is stark. However, there are some fairly shocking specifics in the unabridged version, according to reporting that we have seen on ITV and elsewhere. That is about how, for example, the decline in Himalayan rivers could increase tension and even cause a nuclear incident between China, India and Pakistan, and there have been mentions of diseases and mass mortality events. That detail makes it starker still. I would be interested in the rest of the panel’s views on whether you feel the publication of the full report would make a substantial difference.

Dr Redicker: I agree with many of Richard’s points, but I still believe there is value in publishing a full report. I understand that these reports are not always published because they invite a lot of scrutiny, but this



valuable discussion is possible because part of the report was published, so we could look at it and think about what it means. It needs to be quite clear that this report is a security assessment. It should not be treated as a scientific summary or review report. I would be very interested to see the rest of the report, especially some of the stronger claims about impacts and timeframes, and the scientific evidence for many of those.

Laurie Laybourn: More information is always useful here, because some of these threats are now not things that we might cleanly avoid but that might happen to us. More readiness and understanding of this in society will be quite important to weather those kinds of things. One thing that we might be concerned about in the context of this is something that we call the delayed disclosure trap, where basically, the later you admit the scale of a threat—whether that be as a Government or a private company and so on and so forth—the incentive to not admit then grows further, because it is quite horrendous to find out what has been growing up underneath. That means you do not fully reveal information, which then gets in the way of people doing something about what that information says, so the underlying risk grows. When you come next time to want to admit it, it is that much more scary and disruptive when you make that admission.

We have to make sure that we are breaking from this potential delayed disclosure trap here, because it is clear from the report that climate change and nature loss—two things that cannot be separated—have now reached a level of threat that presents profound implications for our national security. They have caught up with this now, and that is what this report is clearly showing. I agree in part with what Richard is saying. What we have published publicly points to that severity anyway, but we are now in a situation for society where entire sectors, and society at large, need quite detailed information on the kinds of threats that might exist.

Q9 **Carla Denyer:** You read my mind; that was going to be my follow-up question. Given the very stark warnings in even the abridged report, it seems clear that lots of individuals and organisations will need to take action. Whether that is politicians other than those in Government, such as those in local government and devolved nations, disaster response specialists or NGOs and so on, they will need to take action to help reduce the risks and respond to the ones that might still happen. How is their ability to do that affected by not being able to see the detail? Even if your average Joe Bloggs may not need that detail, there are lots of people outside of Government who might. I invite further comments on that, as well as your thoughts on the report.

Georgina Chandler: Transparency is a critical part of the way that we do government. It depends on the content and how much the content of the unabridged version matches what we have in the summary, and that is hard to know without seeing the full report. From our perspective, with a role in terms of accountability, it is hard to know without more detail whether the scale of the response matches the scale of the threat that has been outlined, without understanding what the detail of that entails. From a transparency and accountability perspective, it is important that the

abridged version matches the full report, which you do not know unless you have seen the full version.

Carla Denyer: Quite. It is worth me being clear that I have not seen the full version. We on the Environmental Audit Committee have asked the Government if we can see it confidentially, and the Government are still considering our request, so we are in this unknown unknown situation as well.

Q10 **Julia Buckley:** Mr Laybourn, I was interested in your delayed disclosure comment. I know that you have been involved in some other reports in this area. Could you help us to understand what similar pieces of work exist around the world, whether published or not?

Laurie Laybourn: It is a great question. There has been a greater move towards assessing climate change, nature loss and the threats to society from a security perspective. There are a few things to say here. The first is that, historically, assessments around those issues have been somewhat siloed into environmental departments. In the UK, for example, we have a climate change risk assessment. That is a hugely useful and important product, used both in and outside Government, but it is not a security assessment. It does not ask questions like, "What is the very worst thing that climate change could do to our food security?" which are the kinds of questions that you would ask for other major threats as well.

There has been an effort to start to ask those questions, as this report does. We have seen examples in the context of Germany where some details have been published publicly. There have also been a number of assessments that are not public. One example is in the Australian context, where the Australian Labour party made a pledge prior to getting into Government in 2022 that they would undertake a national security risk assessment. They then did, but elected not to publish that information, though some of it has subsequently been published in another assessment.

We are, across the world, in a situation where those two issues—the breakdown of stability in our climate and other natural systems and the profound security implications—have not been put together. That is why I strongly agree with Richard's point that this assessment is seminal, not just in the UK context or because of its conclusions on biodiversity, but more fundamentally because it applies the best risk assessment tools that you use for the biggest threats countries face, no matter what they are, to climate change and nature loss. That is one of the most important things about this assessment.

Q11 **Julia Buckley:** Let me ask you a different question. We were also briefed about reports in America—one that was published and one that was not. Why is there no collaborative international report that brings everything together? We are talking about a global problem.

Laurie Laybourn: That is a very good question, and others may have an answer, but I think it goes back to the very beginnings of climate change and nature loss as an emergent threat. If you go back a number of

decades, when people were really becoming aware of this, states and Governments were basically presented with a relatively novel thing: climate change. What is the threat here, relative to other threats that they are routinely used to assessing, such as state conflict, terrorism, nuclear escalation and so on?

There was not really the analytical muscle memory in those institutions, so they turned to climate scientists. That is absolutely appropriate, and climate scientists are critical to us understanding this. However, to understand the security threats to society, you need more than just scientific modelling; you need to bring in lots of different expertise. As we focused on this as a climate issue, and as one relating to science and energy—which is all appropriate—it created a kind of path dependency: there are climate change risk assessments, which are about carbon and energy and some other elements as well, and they will be undertaken by environmental departments and individual Governments, and so on. That meant that, as time went on, we did not really put this into the domain that it might have been appropriate to put it in from the beginning, which is the very top-tier threat assessments that you would undertake as Governments or international institutions.

Yes, ideally, we should have been in a situation where from day one the appropriate international fora—UN Security Council, G8 back then, G7, G20 and so on—were presented with a global security threat assessment of climate change and nature loss. That still has not been undertaken. There was a major comment piece in one of the top academic journals recently making this point: that there has yet to be a major security assessment presented to world leaders on these issues. It is about time that that was done.

General Nugee: I agree with everything Laurie said, but I offer a slightly different perspective. One is that our own Prime Minister, Boris Johnson, for the month he had the presidency of the UN Security Council in 2021, used it to talk about climate and security. He was followed by David Attenborough, who said, “Make no mistake, this is the greatest security threat to humans since we have existed”—I have not got that quote exactly right, but that is pretty much what he said. They both talked about this as a security threat.

So there has been an understanding at the UN. I also know that not everyone at the UN agrees with that, and there is the right to veto, to say that it is not a security threat. Lots of people say that it has been securitised and therefore you should not touch it with a bargepole as far as security is concerned.

I would suggest there is another much more pragmatic view as to why this has not happened internationally. Laurie talks about putting it into a different domain of intelligence and security analysts. Every country has a different security analysis because, from a traditional security perspective, every country is affected in a different way. However close we are to America, Germany, France or any of these countries, we all have a slightly different analysis of what the security situation is in our country.

Therefore, national security assessments tend to be exactly that—national rather than international. That is because it is much easier and more relevant to look at it from a national perspective.

Julia Buckley: That is really interesting.

Georgina Chandler: To build on what has been said, it is a really important framing. It is also important to reflect that the evidence base, and what it tells us, is not necessarily new. We have known that ecosystem collapse and biodiversity loss is a huge threat to society for many years. As we have said, what is helpful is the framing and how that translates into other areas of Government—how it is taken a step further to make sure that nature is mainstreamed into a whole of Government approach.

We have the evidence base from things such as the World Economic Forum risk register, which has put biodiversity loss and ecosystem collapse in its top 10 risks for many years now. I had a quick look at the national risk register for the UK for 2025 and it does not feature the word “ecosystem” once. It also features the word “biodiversity” only twice.

There is a bit of a disconnect there between what we know the evidence base to be, and what we know the impact of nature loss is in terms of underpinning a lot of systemic issues that we all work on, versus what our national response and reaction to that is. Like all these things, they are only useful based on what you do with them. That is the critical part: what will we do in response to this and what will we change to be different so that it meets the threat and the scale of need?

Q12 **Julia Buckley:** Dr Redicker, do you agree with the assessment that this has been a collaborative exercise and that, by moving this into the security sphere, we are understanding greater impacts through a different lens?

Dr Redicker: I would like to add a note of caution to that because, as we have seen with climate change over the last 20 years, and we are now seeing with biodiversity, if you frame it as a security issue, it often boils down to border security. Ultimately, that leads to things about migration, biosecurity, disease and so forth. There are also other very helpful frameworks that we should not discard. As has just been mentioned, the economic and systems value of the environment is one.

There is also an inherently important idea around the intrinsic value of nature. For example, in New Zealand, India and Colombia, we have seen rivers being treated with their own legal personalities. That is important for protective and restoration efforts.

There is also a very important justice lens, especially when it comes to things such as access to fisheries, land rights and so forth. To go back to what we said earlier about why there is no security assessment on a national level or international stage, there is also a bit of focus shift between countries. If western countries from Europe or North America do the assessments, the thinking often goes around border security and

migration issues. In other countries, issues might be different—they might be around supporting vulnerable populations. There is a mismatch between countries in how they assess them.

The security framing that we now have here is important and really highlights biodiversity loss as a crucial issue. I do not want to downplay that at all, but we need to be very aware of what policies usually follow from the security framing versus intrinsic rights, justice or socioecological system framing.

Q13 Julia Buckley: That is really helpful. Ms Chandler, you made a powerful point about how moving the framing into the security sphere escalated it in a different arena, so why do you think that so few assessments have been published in this area?

Georgina Chandler: It is an interesting question. In terms of the number of assessments from a national perspective, I am not sure why we have not had this sooner, to be honest. It has been one of those things where we have had an awareness of the issue, but not a dedicated, focused assessment that has put it into this framing, which has been incredibly helpful.

We have heard how it has been used across Government. It has reached different audiences for sure. People have mentioned it to us in strategy meetings across Government, and not just from a DEFRA context. When we have spoken about biodiversity loss and the risks, we have quite often talked about a siloed approach that can come from one Government Department. This has helped it to get through to an FCDO and DESNZ audience. A lot of people have paid attention to this in a way that they have not necessarily before. It has been really useful from that perspective.

Globally, there are more assessments of a similar framing; they just might not have been as explicit about the security angle. It reflects the nature of geopolitics and the world that we are in at the moment.

Q14 Chair: Ms Chandler, before I bring my colleague in, we have spoken about the starkness of this report. For those who do not have it in front of them, to touch on a few of the things in it, it says: "Global ecosystem degradation and collapse threaten UK national security and prosperity." The risks include "geopolitical instability, economic insecurity, conflict, migration and increased inter-state competition". It focuses on "major global food production" and the impact on our own food security. It warns that rainforests could start to collapse from 2050. Given the starkness of those warnings, are you surprised that there is so little public awareness of the report? It feels to me that the extent to which this document has not dominated discourse or even broken through into public awareness is minuscule. Would you agree that it has had much less public focus than we might have expected? Does it pose a challenge to all of us who are concerned about the reality of this kind of collapse that we are failing to get a message across?

Georgina Chandler: Yes. The way the report was released did not help in terms of public traction and public awareness of its findings. The coverage has been surprisingly low. It is our job now to make sure that we consistently use it and that it does not get left on a shelf somewhere and forgotten in six months. We need to continue to use the narrative and the framing in the case that we make.

It is important for us, as conservation professionals and people trying to work on the solutions to a lot of these problems, to make sure that we are focused on solutions. The messaging in the report is very stark. When we are talking about public communication and raising public awareness, it is about being able to say, "Yes, and this is what we do about it. Here are some really good examples of what we can do, both nationally and internationally, to help to solve some of these problems." We need to demonstrate where nature can provide critical services and infrastructure—mangroves are an excellent example of that—and the other services that nature provides. The most important thing for us to take away from it is to focus on the solutions lens.

Chair: Absolutely.

Q15 **John Whitby:** To what extent does the panel agree with the report's central findings, notably its assessment with high confidence that global ecosystem degradation and collapse threaten UK national security and prosperity?

Laurie Laybourn: That has been a well-known and well-studied area for a very long time. In many respects, that judgment and many of the others, including the key judgment—No. 7 at the beginning of the report—reflect the state of the knowledge for quite some time.

General Nugee: You have to ask what national security is. Until reasonably recently, national security had very narrow boundaries for an enemy aggressor. A lot of people still think national security is just about the Russians invading, or whatever the threat happens to be. Yet, in the last couple of years, national security has been talked about more and more as a multidimensional piece about the security of this country from whatever threat.

It is interesting that NATO's article 3 is quite explicit in talking about how any threat to a country should be protected against. It is all about a resilient homeland and the preparedness of our homeland to allow our armed forces to deploy. To many people's thinking, that side of it now incorporates threats from biodiversity loss and climate change. We have got to ask what national security is. You will see goodness knows how many definitions if you google it. It is not clear. There was one helpful response which said that the Government do not want to define national security so that they are allowed the freedom to say something is a national security issue—that is actually quite helpful in this context. However, I think that we are seeing that national security is about our ability to lead the life that we as a country choose to, and that will be different per country as it is a national security assessment and not an

international one. As a result, I think it is absolutely right to turn around and say that if you have continued climate change and biodiversity loss, that will affect the way we can lead our lives, so it is right to say that it is a national security issue.

Q16 John Whitby: Dr Redicker, are there any specific problems associated with framing biodiversity loss as a national security threat?

Dr Redicker: I would generally agree that biodiversity loss and ecological decline are structurally extremely dangerous to the UK and any country. However, I want to draw the distinction between a structural issue and a security threat in the sense of the securitisation debate.

The report also very carefully highlights the ecological issues arising from biodiversity loss, but then makes very general claims about the social and political implications. For example, it suggests mass migration to the UK because of biodiversity loss as one of the main threats. From a scientific viewpoint, that is just plainly wrong. The evidence quoted is really poor scientific evidence. It is based on a World Food Programme study that specifically investigated conflict-driven refugee displacement and food insecurity connected to conflict. That has nothing to do with generalisable results as to how climate change or biodiversity loss is impacting migration flows generally. I think that the distinction between migration and refugees is very important in this context as well.

We wrote a report about this and a commentary about the specific part of the report because it is important to highlight. It goes back to what Richard was saying about what we mean by a security threat. I absolutely agree that food and water security are essential problems that we need to tackle. The UK is the most environmentally depleted country within the G7, so there is a lot to do at home.

Q17 John Whitby: As we have had oil price shocks for 50 years now, the report suggests that we could have food price shocks due to food scarcity. Would you recommend to a group of MPs that we produce more of our food in the UK—and produce our own fertiliser?

General Nugee: Yes, although 100% food security with food from this country is probably not the right answer. We only need look at the effect, albeit a long time ago, of the potato famine in Ireland. In that case, we see that with a single crop, if you get a devastating disease to that, it ends as a disaster for the whole country because it does not have any resilience by having alternatives.

I think we still need food trade and frankly we cannot grow everything here. There are certain things that we need to import. However, I think there is an opportunity to look at whether we can grow more food more successfully in this country. I also think that if we can get to a point where we can rely more on organic fertiliser, which will not be easy and will take time, then obviously we will not be subject to the sort of shocks that are coming out of the fact that a third of inorganic fertiliser comes through the straits of Hormuz and is stopped at the moment, and therefore the price has already risen. Urea has gone up ridiculous amounts. There are other



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parts of fertiliser; they have all gone up in price, and that has a direct influence on the cost to our farmers.

Our farmers are really struggling from massive increases in the cost of fertiliser, at a time when they are getting less for the food that they are producing, so there is a double crunch. We need to look after our farmers. Why is a general saying that? Because at the end of the day, it is about food security, and we need to make sure that we have food security. One aspect of that is growing more food in this country.

Georgina Chandler: To be clear, the UK imports 40% of its food, so in terms of what we should do, it is a dual approach. One aspect is making sure that the food that we produce in the UK is sustainable and supports our domestic ecosystems and biodiversity as well. We cannot forget that we also have a responsibility nationally to meet our goals and targets under the global biodiversity framework. As has already been mentioned, we are one of the most nature-depleted countries in the world, so it is important for our own domestic nature that we do that in the right way.

Overseas, it is really important to draw out that a number of the ecosystems mentioned in the security report are forest ecosystems, and we have a large global footprint as the UK, especially on forest ecosystems, where we depend on supply chains connected to these regions and countries. There are mechanisms in place that we can use, as the UK, to make sure that we are safeguarding those ecosystems overseas. The long-awaited due diligence framework is a good example of something that we can do now—it is already in train and was committed to five years ago in the Environment Act—to make sure that we are we are tackling our footprint as well as making sure that what we produce at home is as nature-friendly as possible.

- Q18 **Sammy Wilson:** The Chair asked an important question earlier about why this report had not received more public attention and concern. The author of “The Population Bomb” made a prediction very similar to this in the 1960s, in which he talked about ecological degradation, resource over-exploitation and over-population, and made equally strong predictions as we see in the assessments made on this: that there would be mass starvation, not just in third-world countries but in Britain and America within 10 years; that most of the mammals in the ocean would be extinct within 10 years; and a whole lot of other predictions. Of course, we had other predictions in the 1970s and ’80s about the impact of climate change. How does this assessment differ from some of those discredited predictions of the 1960s, ’70s and ’80s?

General Nugee: Was that aimed at me?

Sammy Wilson: Any of you.

Laurie Laybourn: It differs in a few ways. First, they are being done by some of the top threat assessors around—not, as in the case that you are talking about, with “The Population Bomb”, by a single academic writing

essentially a popular opinion piece in the form of a book, however interesting that was at the time.

Secondly, since the time when that book was written there has been considerable destruction and destabilisation of natural systems. When Paul Ehrlich was writing that book in the late '60s, climate change was just that much more underdeveloped compared with where it is now. We had not seen the subsequent consequences of it. If we just take the UK position, for example, we have had some of the worst harvests the UK has ever had on record, driven by weather that has largely been unprecedented in the historical record as well. So the destruction has wound on that much further.

When you strip away a lot of the opinion that was being written at the time and compare it with the robust scientific assessment that was done at the time, it did not necessarily say the same things, but it warned that there are certain structural trends to things such as the integrity of the environment. It warned that if we do not get on top of those trends and we fast forward into the future, we will not be able to rule out huge security threats. We are now in that future where the fact that we cannot rule out some of these things is very unsettling.

In a security setting, we apply certain thresholds on what we see as tolerable—for example, on the potential for terror attacks, major public health problems and state conflict. Applying those thresholds now to the environmental situation means that we have to treat it with the same caution. While some of the outlandish opinions spread around in the '60s might not have come to pass, at the same time a lot of the stuff that was warned about has happened and we are in a very difficult situation.

The last thing that I will quickly say is that population was a different issue that Paul Ehrlich was writing about at the time. He was saying that there are certain trends in population that could then lead to this kind of environmental destruction. It was imprudent, perhaps, to write about that when it came to population, because there was a lot of evidence to show that what he was saying was not going to come true and so on. The environmental domain is a different one. There is a lot of evidence. The structural damage to the environment is different from what was happening to population at the time.

- Q19 **Sammy Wilson:** The assessment does make it quite clear that the resilience of human systems to ecosystem degradation is moderately uncertain, and that the wider geopolitical context is highly uncertain. Even with the predictions that are made about things that will impact on our security and everything else, according to the analytical ratings, there is not total certainty there, and indeed, there is low confidence in even the timing of some of these impacts. What I am trying to get at is that during the 1960s, nobody saw the green revolution leading to India—which had a starving population—becoming a net exporter of rice. Do the timing and uncertainty around these things not make it very difficult for the Government to come to conclusions about what policy should be?



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I will give you one example, which was mentioned earlier. The Government seem intent on reducing, not increasing, our ability to produce our own food. We are giving more land over to solar panels, forests and other non-agricultural purposes, and there is a tendency to try to push away from intensive farming. In your assessment, do the Government see this report as something that is there in the background but cannot and will not have a major impact on the policies that are currently being followed—some of which are contradictory?

Dr Redicker: I think the point I can speak to is the timing thresholds for some of the tipping points in the report. My colleagues in Exeter, like Tim Lenton and his research group, who publish the “Global Tipping Points” report, could probably speak even better about this.

The science around tipping point analysis and some of the thresholds that I mentioned is still developing, but they are certainly based on solid science. What is still a bit lacking is the actual timing, which is, like you mentioned, how long we have until we see these things. The problem with that is that once they are reached, then it is basically too late. It is really important to integrate biodiversity loss and ecological decline into policy now while we still have the full range of possibility to enact policies on protecting the environment.

We can see that in the UK to some extent already. There is solid evidence that certain fish populations are migrating north because the water is getting warmer. The UK has committed to, for example, the 30 by 30 pledge—30% of land and water areas to be protected by 2030—and Scotland is doing quite a good job in the marine protected areas, for example, where we see certain fish stocks settling and growing again. There are things that should be on the agenda, as has been mentioned, to fulfil the pledges the UK has made as part of the biodiversity international commitments and financial commitments. That really would strengthen the position of the UK in the future in terms of net security.

Georgina Chandler: Collectively, beyond this report, the evidence base—and the weight of the evidence base—that humans are intrinsically dependent on nature and healthy ecosystems has been there for decades and decades. We are getting to the point where we do not have time to continue together. We need to respond to that evidence base with the urgency that it requires and, as we have said, integrate that ecosystem approach and ecosystems across the whole of Government and decision making.

We are potentially on the brink of a super El Niño year this year, which could have devastating impacts for ocean and coastal ecosystems worldwide. Those kind of shocks and impacts are happening tomorrow and now. This puts it in a useful context, but the weight of that evidence base has been there for a long time in terms of how we depend on pollinators and other parts of nature and ecosystems. It is now not necessarily about framing this continually in different ways; it is about what we do in response, which was part of what you were saying as well.



- Q20 Sammy Wilson:** General, I think you probably answered this question in your first answer to the Chair, but do you think that this assessment represents a fundamental shift in the Government's view of this issue? Or is it simply a reflection of what the Government have always thought about the importance of nature and what we need to do to avoid degradation?

General Nugee: I think this is a fundamental shift. It is not that we did not know before about the ecological consequences of what is happening, but to have put it into a security context, and to have got intelligence analysts to produce this rather than environmental scientists, is a fundamental change.

I have a theory. My experience of Government—I was on the executive committee of the Ministry of Defence for four years, so I saw quite a lot of how the Ministry of Defence operated on day-to-day basis—is that they are extremely good at understanding trends. What they are not good at is understanding the concept of a tipping point and the lack of control that a tipping point represents. If you go over the edge, you have lost control of that particular piece. I do not think that Government are particularly good at analysing or understanding that. I would go so far as to say that the only part of Government that has to deal with that on a day-to-day basis is the Ministry of Defence, because that is what happens in war.

You have a Government that are quite bold in expressing themselves from an intelligence perspective about tipping points, but the logical conclusion of that is that they need to think about how a Government trying to run a country on a set of themes and trends—every Government tries to keep the norm the least disruptive possible—can cope with the concept of a tipping point and a catastrophic failure at a point in time that they cannot predict. It is fair to say that even the best models are probably not sophisticated enough to take into account all the parameters that go into how our climate operates. The net effect of that is that the Government need to look at their own structures and ask, "How do we deal with a situation where we might be out of control of a certain circumstance?"

- Q21 Sammy Wilson:** That brings me to my last question, which another member of the panel may wish to answer. Some—in fact, most—of the degradation is outside the control of the United Kingdom Government, whether it is the cutting down of the rainforests in the Amazon, or the degradation in central Africa, where huge areas are being cut down to get cobalt and other precious metals. What is the policy implication of that for our Government and for the choices that they need to make, if the tipping point you referred to is to be avoided?

General Nugee: I will make two points and then let the rest of the panel say something. The first point is that we should not underestimate—from my experience of serving abroad a lot—the influence that the UK has. People listen to the UK, so if the UK makes decisions, policies and opinions known across the world, people do pay attention to it. There are others who have louder voices, but we have quite a loud voice for a country of our size.

The second point is that domestically the Government can do only what they can do. If we can improve the domestic biodiversity loss and reduce the degradation of this country, which is in the bottom 10% for biodiversity in the world, we ought to try to do something in our own space as an example to the rest of the world, but more importantly for protection of our own food security.

Georgina Chandler: The UK has lots of tools at our disposal in how we work and partner with other countries and Governments. We have trade agreements with other countries, and there are six critical ecosystems identified in this report. Thinking about whether nature and biodiversity is embedded into those trade discussions, for example, would be good. We have our funding, investment and infrastructure around finance as the UK, both in terms of investing in solutions that already exist to protect critical ecosystems, such as the tropical forest forever facility, and how we spend our ODA and making sure that solutions for nature, climate and people are central to that. Unfortunately, the UK did not commit its one third of nature-based funding as part of its ODA ICF4 commitment recently, which is not a reflection of the urgency of what we see in this report.

We have our partnerships overseas as well. The UK has the G20 presidency next year. In terms of how we work and collaborate with our Governments, I already mentioned our footprint, so I will not repeat myself on the due diligence framework, but we have lots of tools at our disposal. We should make sure that nature and solutions for nature and reducing the risk of ecosystem collapse are embedded across all the tools at our disposal. We are a very rich country in the amount that we have to work with. We should leverage all of it to help solve this problem.

Q22 **Barry Gardiner:** General Nugee, what you just said tees me up very nicely for what I wanted to ask Mr Laybourn. The report tells us that we have six critical ecosystems that could pass beyond a tipping point—a critical threshold that will present risks ranging from food insecurity to military conflict. What are the risk multipliers for those risks and how do we mitigate them? All six identified in the report, ranging from the Himalayas and the coral reefs in south-east Asia to the Congo basin, are beyond our direct control. What are the risk multipliers within our control that we can mitigate? What is the national resilience strategy—or, rather, why don't we have a national resilience strategy to mitigate them?

Laurie Laybourn: Brilliant questions. On your first one about what kind of levers we have, they are some of the ones that we have just heard about. For example, overseas development aid has the potential to be an extremely efficient use of monetary resources, in that it can help bolster our security in a way that has—

Barry Gardiner: You mean the 0.3% of GNI that we still devote to it.

Laurie Laybourn: Yes. It has huge potential to be a very efficient use of spending, because it gets more to the root of some of these issues that could then cascade—domino—over to the UK. We have a lot of the levers that we just heard about. Of course, the UK's role in the reduction of its



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own carbon emissions, and in pushing that globally, is another thing, because climate change is the stressor of everything that exists here. I am just looking at a map of all these key regions, and climate change has its fingerprints over all those things. As you infer, as a country, the Government are not going to be able to forestall unilaterally the potential for these to tip or these ecosystems to break down, so it is absolutely appropriate to develop some kind of resilience strategy for the new world that we are in.

The reasons we do not have that so far are many. The approach to how Government spend money, and the assertion that they do not have much of it to actually do this, are a part of that, of course, but it goes a little bit back to our conception of what we might mean by security. From the beginning, climate change and nature issues have not been framed in that way, and therefore have not had the priority order in the context of Government. In some ways, you could say, "Oh, well, that was prudent," because they are yet to reach the point where they are presenting those kinds of security threats.

That moment has now come, but it requires us to have a different definition of security, as Richard has been talking about, and as we have been alluding to, that is much more akin to the kind of security threat that, say, covid brought. It was not just that it was non-hostile; it was also the fact that it stressed everything. To use the Whitehall parlance, it was a whole-system civil emergency; it affected everything. We are seeing that these things could end up causing whole-system civil emergencies. That means that your resilience strategy is thinking about something huge—it is just everything. This is the resilience strategy for a world that has been beset by environmental breakdown.

We have tried to look back historically and think of a moment where there has been such a paradigm shift. I think you have to go back to the emergence of the nuclear era. In August 1945, Clement Attlee, newly Prime Minister, sat down and wrote an extraordinary four-page memo in which he grappled with the fact that the invention of the nuclear weapon changed everything. We are in a similar situation now, where people are struggling, but we have not had a similar memo, as it were. We could say that this assessment in some ways is bringing us to that moment. What that basically means is that it is now incumbent on all countries, groupings of countries, and sectors that run across national borders to develop resilience strategies for a world in which the earth system—the system of systems that make up our natural environment—is fundamentally destabilised. No country currently has a resilience strategy for that, unfortunately.

Q23 Barry Gardiner: I am not sure that you have given me the full answer to the first part of my question, which was about what the risk multipliers are and how we mitigate them.

General Nugee, you will know that there is a statue, as one walks up Whitehall, of Field Marshal Alanbrooke. That statue always annoys me, because you will notice that somebody has swung on his baton behind his



back and bent it down. I always want to go and push it back up again—maybe you can do something about that. On the plinth it says, “Master of Strategy”.

You have just told the Committee that perhaps it is only the Ministry of Defence that has coped with these tipping points before, because that is what war is about. Should we not now be declaring that the country is on a war footing against climate change? Do we not need that wholesale systematic response and a master of strategy to implement an overview that gears the entirety of our economy to deal with the threats, because although we cannot control the six ecosystems that are about to collapse, we are certainly not responding to them?

General Nugee: I would absolutely agree that we need a master of strategy. The reason that Alanbrooke was so successful is because he was prepared to stand up against Churchill and say, “You’re wrong.” Alanbrooke was about the only person Churchill would allow to say that and get away with it. His predecessor tried the same thing, and Churchill did not respect him to the same extent, so he ended up being sacked—or moved on, to put it that way.

Yes, we definitely need a master of strategy, whatever the title of that would be—a national resilience co-ordinator or something. We need somebody who understands how more than one system operates and how they operate on each other, because that is exactly what happens in war. Things always seem to go wrong at the same time in war, and they are linked. Do we declare the country on a war footing? In the short term, my answer is, “Not yet.” The reason for that is that we have not yet really started the conversation with the general public about what this is all about. The Chair made the very apposite point that this report has not had the level of publicity that a report this stark ought to have had. If the Government declared that we are now, as a country, on a war footing because of ecological collapse, most of the country would turn around and say, “What on earth are you talking about?” It would backfire, rather than be helpful.

You need somebody to really understand what this means and pull together different Government Departments in order to be able to tackle the issues where we can in this country. An absolute corollary to that is that we should start to educate the public about what this means to us as a country and to the individual on the street—the person on the top of the Clapham omnibus, as they used to say. What does it really mean to them? It means to them, potentially, much higher food prices. It means much more flooding. It means all sorts of areas where we can’t get the food that we want, and a limit on what you can do. It means so many things that will eventually get worse and worse. That voice needs to be there before we start talking about putting the country on a war footing. Otherwise, it will backfire, and people will say, “No, you are just overestimating it.”

Q24 Chair: Do you want to come in quickly on that, Dr Redicker? Then we will try to move on a bit.



Dr Redicker: I will give an additional point of view. We already have a very good tool, which is not declaring war: we have international co-operation through robust institutions, but over the last years, there has been less and less funding towards them. In the past, DFID was really strong on international expertise; that was partially lost when it merged with the FCO. The FCDO has had several budget cuts over the last years. Rather than pulling out and underfinancing the tools that we have, maybe the way forward is to invest again in international co-operation. We have COP17 later this year—in October—and the UK could take a stand diplomatically. We also have the G7 coming up in June.

Chair: Thank you. I will try to move us on a bit, because things are taking a little longer than I intended.

Q25 **Chris Hinchliff:** It may be useful if I make a brief point to set the scene before I dive into my questions, starting with Mr Laybourn. I think that the issue of thresholds—non-linear collapse—and what that means in terms of the risks of non-state actors, global resource competition and the collapse of food security is particularly concerning. We are aware of the risks around the thawing of the tundra and the collapse of ocean currents. Would you be able to set out briefly how close you think we are to some of those points of non-linear collapse?

Laurie Laybourn: I would first differentiate the thresholds. There are thresholds in natural systems within the climate—ocean circulations and others—which we now know can tip. They can reach points where they irreversibly change, like a Jenga tower reaching the point at which it falls over. A similar thing can happen in society. You can reach a tipping point where a financial system begins to buckle. We have studied the former far more, and the latter less so when it is connected to climate change. For example, I personally think that the potential for a major breakdown of UK financial security as a result of some of the things in this report is understudied, so we need more assessments. We do not need to wait around and assess everything, but we need threat assessments of the potential tipping points in our societies.

When it comes to tipping points within nature and the climate system—that is perhaps what is of particular interest here—one of the most significant advancements in the science in recent years has been to revise down the global temperature rise from climate change that could trigger some of those things. Of particular concern for this country is the potential breakdown of these ocean circulations that you are pointing to, which are critical to life on this island. We are effectively served by a conveyor belt that draws heat from the tropics northward and means that we have—climate scientists will probably take this as too much of a simplification—vineyards at roughly the same latitude that Canada has polar bears.

If those circulations break down, which we can no longer rule out, it will be a cataclysm for the UK directly; for example, one study shows that it would largely wipe out our ability to crop-farm on this island. It will also be a catastrophe for other places, which would then blow back and hit the

UK; for example, it would majorly disrupt all monsoons globally, which many people rely on.

We are now in a situation where the circulations have already declined, probably more than had been anticipated before, and the latest science is telling us to expect them to continue to decline over the coming years and decades. We are also approaching the point of irreversible changes, when these tipping points are reached. Some of the latest science is quite hair-raising in suggesting that that could be far sooner than we thought. Unfortunately, we effectively cannot rule out that the process might even have started. That means that we now have to pay serious attention to these as risks, as, for example, the Government in Iceland have in declaring it a national security threat to the nation.

- Q26 **Chris Hinchliff:** On the topic of this being very concerning and possibly coming much sooner than we feared, you referred earlier to the super El Niño that is potentially forming, Ms Chandler. Is there a risk of something like that pushing us over the edge of one of these thresholds?

Georgina Chandler: I am not an expert or scientist in the field of tipping points, but there is a lot of evidence of the widespread impact that extreme events have on ecosystems, and the knock-on impact that that has on such things as food security and on our very fragile coral reef systems, for example, as well as the examples that have already been given.

- Q27 **Chris Hinchliff:** The General referred earlier to national security as meaning that we are free to lead the life that we choose. Given what you have said throughout this session about the threats to our ability to feed ourselves and everything that would come from the decline and degradation of the ecosystems that we are talking about, can anyone on the panel comment on whether that is still a realistic prospect, and whether even just the process of adapting to the change that is already under way means that we will no longer be able to lead the sort of lives that we have led?

Laurie Laybourn: A lot will now change, yes. That could be because the world has done what it is supposed to have done for a number of decades: made fundamental changes to how societies work to deal with the problems at source. We must underline that although those changes would mean very different societies, in a way, they might mean even better societies. A lot of the things we need to do to deal with environmental threats are things that we should have been doing anyway. Things will also change because we have now passed the point at which we could have avoided a lot of these things. Worse things will happen to us and that will be highly disruptive. We will therefore have to adapt.

Those together mean that yes, we should now expect major change and disruption. The question is how well the action of Government can manage the manageable bits, and how to do that in a way that benefits and protects people. That is a big question that requires the kind of levelling with the public and wider society that Richard spoke about earlier.



Q28 Chris Hinchliff: I will turn to you, General Nugee, for my final question. Mr Laybourn spoke a moment ago about the cataclysmic potential impacts of going beyond these tipping points. If we were sat today on a Defence Committee to talk about a foreign power that had the ability imminently to cut off food supply to this country and seriously degrade all our critical infrastructure, we would be having a very urgent discussion about how we ramp up defence spending massively—indeed, that conversation is already happening in politics. Do you think that we are having similar discussions at the order of magnitude that we need to in response to the tipping points that we are reaching as a result of environmental degradation?

General Nugee: No, I do not think we are. It is interesting that in 1938, this country actually imported 75% of our food. Churchill famously said that the thing that kept him awake at night was lack of food. We were down to six weeks' worth of food and that was his tipping point. We had "Dig for Victory", which was extraordinary and produced 1 million tonnes of vegetables a year from people's back gardens, and guess what? People were healthier, but more importantly, people spent far less on food because they were growing it themselves. They would come home from work and the factory and tend their plot. But what was instrumental was that local councils had lessons for everybody. Everybody understood the importance of it. Everybody was taught about different rows of carrots: one was good, one was bad. They were taught exactly how to plant them. It was a civic responsibility to take it to heart and try to grow food, because they knew that they could not survive importing 75% of their food during the war.

We do not have that understanding at any level in this country at the moment. It is not enough just to say that the national Government should do it. It is local government and regional government. It is down to, in the old days, parish councils having the ability to inform people. Unless we do that and understand that it is a way of embedding the idea that we need to protect ourselves, I don't think it will have the impact that it needs to have. It is not about spending tons and tons of money on this as opposed to something else. Of course, as a soldier I would always say that defence needs more, but it is about the country understanding the situation we are in. And it is not about spending money; it is about people going off and doing what they think is right to be able to protect themselves and protect their local council and local region, or whatever it is. That is where we need to be and we are nowhere near it at the moment.

Q29 Jonathan Davies: We know that climate change and the loss of biodiversity will be a driver of conflict and that it will change our access to natural resources. I will come to you first, if I may, General. Why does this not sit more prominently in the strategic defence review that was published last year?

General Nugee: It does sit in the strategic defence review. What I take solace from is the fact that the strategic defence review talked about a whole-of-society response. It also quoted NATO article 3. If you listen to Lord George Robertson or General Sir Richard Barrons, they constantly talk about NATO article 3, which is why I mentioned it earlier, because



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that is about resilient homelands against all threats. The defence review offers the opportunity to talk about that, but at the end of the day, the strategic defence review is about our defence against aggressors as well, and that is where most people's focus is, because it is about making sure that our armed forces are capable of being the tip of the spear that we need. We are not there at the moment, in my view.

So it absolutely offers the framework to take what we have been talking about today forward under the strategic defence review. It is mentioned. It is a transnational threat that it talks about. It is there, but it is not its main focus, because its main focus is getting our armed forces back up to the level they need to be.

Q30 Jonathan Davies: I think there are two direct mentions of climate change in the SDR, and it generally talks about the melting of ice in the High North. Are conversations happening at NATO about the threat of climate change and the loss of biodiversity, and how that might drive conflict? You also talked a bit about tipping points, which have been a feature of our discussion today. I wonder what it would take for there to be a tipping point or even for article 4 to be triggered.

General Nugee: That is a very good question. I don't know what it would take to trigger article 4 in this environment. What I do know is that NATO has an action plan against climate change. It has an understanding of what it needs to do to encourage countries to take this very seriously as part of homeland resilience. And I know that NATO is actively trying to pursue areas where, for example, we can reduce carbon by taking on more renewable energy as part of the mix that is needed by every armed force.

NATO has limitations; at the end of the day, it is an advisory board in so many cases and in so many respects. Nations have to deal with their own defence, with the advice of NATO, and it is a command structure. Actually, NATO has ideas of what it wants to do with this, and it is extremely interested in the High North at the moment.

Q31 Jonathan Davies: Through NATO, how engaged is the United States—or not—on the threats that climate change and the loss of biodiversity will have on national security?

General Nugee: As I understand it, the Pentagon is still pursuing some of the technologies that would be advantageous to climate change, and it is still doing risk assessments of what could happen under climate change circumstances, but I do not think that it is describing them as such.

Q32 Jonathan Davies: If the report that we are discussing today had come before the SDR, do you think that climate change and the loss of biodiversity would sit more prominently within it?

General Nugee: I would hope so.

Q33 Jonathan Davies: Thank you very much for your answers—they are very enlightening.



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I will turn to you, Mr Laybourn. I am very keen to find some tangible actions that the Government should take in response to what has come to light through this intelligence-led report. Do you think there are appropriate governance structures in place to tackle this issue in a cross-government manner, which includes buy-in from big hitters like the Treasury?

Laurie Laybourn: Given how governance is currently arranged, I do not think that it can handle some of the whole-system threats that we see there. If we look back to how climate governance emerged in the UK with the Climate Change Act 2008—just to take the climate bit—instantly there is a problem, because you are then isolating climate from the wider destabilisation of nature and the earth system.

That Climate Change Act was basically developed in an era where it was plausible to say, “We could relatively neatly resolve this climate problem if the world bands together to get rid of carbon emissions, so we will create a Department whose job it is to focus on that.”—back then, it was the Department of Energy and Climate Change, but it is now DESNZ—“However, there will be a residual threat that we will have to handle, so we will undertake a climate change risk assessment every five years, and we will then develop a national adaptation programme that will deal with the threats identified in that risk assessment. That will be a residual threat, because this is a long-term, slow-moving problem, and we are therefore looking at changes to our infrastructure and so on.”

If it was appropriate to say that then, it definitely is out of date now, because of the scale, complexity and escalation of the threat facing us. Of course, there are existing mechanisms that we can push this through, such as the existence of the report—that is, the process within Government where a product is commissioned and the appropriate people work on that. That has clearly worked in this case, but there should be more of those assessments that focus on the whole picture. Rather than one that zeroes in on biodiversity, they should focus on the overall destabilisation of nature. I think we should zero in on certain things like the threats to Atlantic circulations.

There should then be discussions at the appropriate level—we are talking national security-type levels here—and from those would have to stem the kind of resilience strategy that we were talking about earlier, which will be needed to use what is a shrinking window of early opportunity to make the kind of investments that will bolster us against this threat. Alongside that, we must of course super-charge all the existing things that Governments of many stripes have rightly been doing in the past, such as trying to get to net zero emissions as quickly as they deem possible, or trying to bolster nature.

Really, the situation here is that we are applying models of government and governance, as well as ideas of security, that are now outdated. We are now trying to apply them awkwardly and, in many ways, incorrectly to something that, as a society and a world, we have never faced before, which is the overall Earth system. The system of systems that makes up

nature, and therefore enables everything, is now critically destabilised, and we do not really have appropriate governance for the scale of the situation.

- Q34 **Jonathan Davies:** Are there any particular Government Departments that you feel acknowledge that this is a risk and threat, but just put it in the “too difficult” box, and therefore it does not foster the cross-governmental work in the particular corners of Government that we should be looking at in respect of this?

Laurie Laybourn: If you grasp the implications of this and look at that as a single Department, it is very difficult to then face up to what one would do about it, partly because it would not just cross your own desk and responsibility but all others’ as well. Again, it is this awkward application of our current governance arrangements in all their fragmentation to an issue that cuts across all systems. We are not necessarily fit for that.

You mentioned the Treasury. A question that might face the Treasury is what kind of fiscal capabilities we will need if we have the kind of financial crisis that we have heard is in the unabridged report, as reported by ITV News, and where the shock to GDP is considerably higher than the financial crisis of 2007, 2008. There is a question there as to what the financial shock would look like and its particular nature.

It is not necessarily going to look like 2008. What fiscal response would we need? Can we have that at the moment? What monetary support could the Bank of England provide? Those are huge questions. What is your fiscal architecture for handling earth-system driven financial crises? That is a fruity question that cuts across a number of Departments, and I do not think is being asked enough—if at all.

- Q35 **Jonathan Davies:** Do you have a view on whether the National Security Council (Resilience) is helping to bring that together? I know it is chaired by the Chancellor of the Duchy of Lancaster, and DEFRA sits within it. Can you see if it is making an impact at all?

Laurie Laybourn: I would hope that this is a product that has been discussed at that level, and I would also hope that questions are then being raised about what can systematise those kinds of discussions within Government. For example, we have units that cross Departments that have threat assessors in them that look at other society-wide threats such as terrorism.

The current assessment capabilities are somewhat fragmented. Basically, we potentially need some kind of consistent climate and nature security threat function. Then before we get on to grandiose ideas about what changes in Government could look like, there at least needs to be a similar process to the example I gave earlier where Whitehall got its head around the paradigm shift regarding what nuclear weapons meant. There was an ongoing process that began with the invention of a few atomic bombs that America had, to the Soviets then having them, then the invention of the hydrogen weapon and then everyone having them. There were these processes by which Whitehall got its head around the fact that that



weapon really did change the strategic calculus. I think we are probably due for a similar moment here, because understanding of the level of threat and so on is not necessarily cutting all across Whitehall. Some still see this as a long-term, gradual threat that is therefore not at the very top table of national security.

- Q36 **Blake Stephenson:** The UK is on track to meet only three of 23 global biodiversity framework targets by 2030—which is obviously terrible, unless the targets are also terrible. How do you think that the UK should reconcile the strong national security language in this report with the reality that we are so far off track with many of our domestic nature targets?

Georgina Chandler: You make a stark point, in that only three of our domestic progress targets are on track to meet the CBD framework. We have a deadline of 2030. We have COP17 coming up in October. We have only four years left to make significant progress towards 2030 and everything we have heard today underscores the urgency of action and that we cannot afford to wait.

I have outlined a few things that are important in taking this forward. It is also worth remembering that COP17 is a global stocktake moment where we will be taking stock of our collective progress with a tangible record and set of actions that demonstrate what we are doing domestically and internationally to make progress towards these targets.

I would suggest we focus on the things that that could have real knock-on impacts. Subsidy reform is one of the targets that is probably hardest to implement change within, but it is one of the areas where if we do, we could genuinely shift trillions if we are talking about the UK's impact overseas as well. That is a really important area for us. I mentioned investing in solutions that already exist: the TFFF and how we spend our ODA budget. We have CBD target 19 to mobilise \$200 billion a year for biodiversity from all sources, including \$30 billion through international finance. What can we turn up at COP17 and say our contribution to that is, given that we are no longer committing a third of our ODA spend to nature-based solutions, for example? Co-investing in nature is critical resilience infrastructure alongside, not instead of, private capital. We need to really use our financial architecture.

Domestically, we need to think about nature as a critical part of our natural national infrastructure and treat it with the same level of significance as our investment in other parts of our infrastructure, whether that is roads, health or flooding. Ultimately, as we have heard today, nature is part of a lot of the solutions to other problems. There is also our protected area network—we are lagging behind on the quality of our protected areas—making sure that how we produce our food is beneficial for nature, and our impact overseas. I have mentioned some of those areas where I think we could make tangible progress.

- Q37 **Blake Stephenson:** I am thinking about two things that have happened domestically in the last couple of years. This picks up on Sammy's earlier questions. One is the land use framework. There are competing demands on how we use our land. The other is the insatiable demand to build



homes, with targets going up in the countryside but down in the cities. Off the back of this report, would it be sensible for Government to rethink how they expect our land to be used to ensure that we do what we can to secure our food security, and do not build over prime agricultural land if we do not need to?

Georgina Chandler: What we have heard today is that nature and ecosystems should be a critical part of all our decision making. Trade-offs are inevitable, but we need to make sure that we are protecting what is left and restoring what we can, and that the systems we put in place enable that. We need that as a consistent test that we are measuring our legislation against.

- Q38 **Blake Stephenson:** My final question is about the TFFF and the forest risk commodities provisions, which have not been implemented in the Environment Act. Based on your previous response, your recommendation to Government would be to get on with those things. We have heard warm words but seen nothing. Off the back of this report, it would be a good moment for the Government to do something about those two things, but also the other things you mentioned.

Georgina Chandler: Definitely. Just to underscore that, four of the six ecosystems in the report are forest ecosystems. In terms of our footprint overseas, making sure that the due diligence framework comes in, hopefully ahead of COP17 and COP31 at the end of this year, would be particularly timely in response to the report's findings. Let's not reinvent the wheel; let's back the solutions that already exist to protect these critical ecosystems. The TFFF is one of those. The UK was behind it and supportive of it as a process, so we now need to put our money where our process was, invest in it and make sure that we are demonstrating that we are backing it and supporting other countries to protect their own ecosystems.

Blake Stephenson: I know we are pressed for time, Chair.

- Q39 **Chair:** We are. Finally, we heard quite a bit there about COP17, but do any of the other panellists have any burning requests of the UK Government ahead of COP17 about what the UK should be asking for beyond what we have just heard from Ms Chandler?

Dr Redicker: I would echo a lot of the things we have been hearing today. Especially with this risk assessment in hand now, the UK should go into COP as a leader. It should first get its own house in order on fulfilling pledges and committing to the financial commitments that have been made, but then really push for biodiversity loss protection, raise the bar in international negotiations around protecting the environment and take a leading position.

Laurie Laybourn: Alongside COP, there is a lot of global leadership that the UK Government could do. For example, it could be supporting working more closely with the Nordic countries as they explore the potential collapse of the Atlantic circulations and how those are national security issues. We are long overdue a multilateral threat assessment of that, from

a security lens, for example. We are really geographically clustered with the Nordics when it comes to that kind of impact.

The UK Government have also done a fantastic job in the past of establishing the terms of a discussion globally. They have done that around many issues, including with the Stern review regarding the economics of climate change. As we have seen here, definitions of security are not commonly agreed globally, and there is a much wider way to understand security. I think there is an opportunity for the UK Government to do some multilateral convening, beyond just Security Council discussions at the UN, to really try to establish that kind of definition and to make sure that it goes beyond a siloed approach to security or the kind of securitisation issues that we have heard concerns about. There is an opportunity there for the UK Government to do that off the back of what is the world's best application of security risk assessment to environment, in the case of this report.

- Q40 **Chair:** General Nugee, we always think of climate change as a global problem that we are all, to a greater or lesser extent, committed to tackling together. But of course, we recognise that climate change has different impacts on different nations—far greater for some—and potentially offers opportunities to some other nations; there may be benefits to some countries from climate change if they have large areas of land under ice that will suddenly become more productive.

Have we ever really thought through the extent to which this is something that affects us all differently, and whether we might see almost climate warfare, with some countries actually thinking that the impacts on other nations might be to that country's advantage? Do you think this is something we have actually considered at all?

General Nugee: The answer to that is yes. If you look at the global strategic trends, which the Ministry of Defence produces—I think the latest was GST 7—it absolutely explicitly talks about this. That is a report, if you like, produced every few years on what the implications are. Climate change has been a significant part of that for some time, and GST 7 has a whole chapter on it this time. That is one side of it.

The other side of it is NATO. Their action plan, and their strategy, actively talks about how conflict can be created as a result of resource scarcity, leading to both intra and inter-state conflict at its worst, because of the effects of trying to go after resources. Many wars are started because of resources; this is no different. So, yes, I think there is an understanding of that in NATO, and there is certainly an appreciation of it in the MOD, through the global strategic trends work.

The difficulty has been getting that out of the box of, "This is jolly interesting," and into, "So what are we going to do about it?" It is quite difficult to know what to do about it, apart from understanding that wars have the potential to be caused by climate change—climate change is a threat multiplier in many people's language—and that therefore we need to understand what the "So, what?" of that is. I do not think that that



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thinking has happened, because it is extremely difficult and it is predictive—which, by definition, therefore will be wrong. There is quite a lot of thinking going into, “This is what we think the situation is today and what could happen,” but the question of what to do about it has not yet been resolved.

Chair: Mr Laybourn, Dr Redicker, General Nugee and Ms Chandler, thank you very much indeed for the evidence that we have heard today; it has set up this new study of ours tremendously well.