



Select Committee on the European Union

Sub-Committee on EU Services

Corrected oral evidence: The future UK-EU relationship on research and education

Thursday 22 October 2020

10 am

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Members present: Lord Vaux of Harrowden (in the Chair); Lord Bruce of Bennachie; Baroness Couttie; Baroness Donaghy; Lord McNally; Baroness Neville-Rolfe; Baroness Prashar; Lord Sharkey; Lord Thomas of Cwmgiedd; Viscount Trenchard.

In the absence of the Chair, Lord Vaux of Harrowden was called to the Chair.

Evidence Session No. 1

Virtual Proceeding

Questions 1 - 15

Witnesses

[I](#): Professor Sir Richard Catlow, Foreign Secretary and Vice-President, Royal Society; Catherine Guinard, Policy and Advocacy Manager, Wellcome Trust; Hillary Gyebe-Ababio, Vice-President for Higher Education, National Union of Students; Vivienne Stern, Director, Universities UK International.

Examination of witnesses

Professor Sir Richard Catlow, Catherine Guinard, Hillary Gyebi-Ababio and Vivienne Stern.

Q1 The Chair: Good morning and welcome to the EU Services Sub-Committee's first public evidence session as part of our short inquiry into the UK-EU future relationship on research and education. We have four witnesses with us today: Professor Sir Richard Catlow, from the Royal Society; Catherine Guinard, from the Wellcome Trust; Hillary Gyebi-Ababio, from the National Union of Students; and Vivienne Stern, from Universities UK International. The session is being broadcast live on Parliament TV. A full transcript is being taken and will be made available to you to make any corrections shortly after the session.

I will start with a general scene-setting question to each of you in turn. How important is the research and education sector to the UK economy, and how significant is EU funding for the UK's research and education sector?

Professor Sir Richard Catlow: Investment in research and education is absolutely vital if we are to have a successful nation. I will focus on the research aspect. If we are, for example, to have a resilient recovery from the present crisis, we need investment in research and development. If we are to achieve the target of net zero, it is absolutely essential to have substantial investment in research and development. Of course, we will not have a successful research base if we do not have the people, so investment in education is absolutely vital.

If we want a successful nation, we will need substantial continuing investment in research and education.

Catherine Guinard: Thank you very much for the invitation to speak this morning. It is good to be here. I echo what Professor Catlow has just said. Obviously, the contribution to the economy of the research sector is significant. The 2018 edition of the *Medical Research: What's it Worth?* report found that for every pound spent on medical research, 25p is delivered back to the economy year on year for ever. That is significant.

From the universities' perspective, obviously we have a speaker from Universities UK here, so she can speak more specifically, but I believe that, in 2015, Universities UK found that £1 in every £34 of UK GDP is attributable to universities' activities and the activities of their students. The Russell Group universities generate £86.8 billion for the UK economy and support 261,000 jobs. Those stats give a real insight into the significance of the sectors to the UK economy.

There are also intangibles that go alongside. Universities are based in local towns and cities and in that way also bring people in and drive investment. They are significant.

I do not know whether you want me to speak to the second part of the question on EU funding as well at this stage or whether you want to come back to that.

The Chair: A general view on how significant it is would be helpful.

Catherine Guinard: Putting a figure on EU funding, between 2007 to 2013 the UK received €8.8 billion of direct EU funding. It is really important. I am sure this will come up in the other questions, but it is not just about the money involved but all the intangible benefits that go alongside. Research is all about collaboration, and the EU is the UK's most important research partner at the moment. Our links into Europe are a national asset. It is impossible to think about UK research and science without thinking about our links into Europe and elsewhere. Obviously, EU funding also bolsters and gives strength to what is happening at a national level, so it goes alongside it and reinforces it.

The EU funding schemes allow us access to networks that we would not otherwise have access to. For example, the EU is really important for some of the joint clinical trials that are taking place. Given the need for patient populations, we simply would not be able to conduct those trials without them.

That is a long way of saying that EU funding is really important for the money involved, but also for everything else that goes alongside it.

Hillary Gyebi-Ababio: First, I have to echo the remarks made before me. It is important to understand how critical the education sector is, not only in thinking about the UK in general but especially in this pandemic, when we are trying to find a vaccine. We have seen the research sector step up to find a vaccine, but we have also seen students step up to volunteer for the NHS and set up mutual aid groups for their communities. Our education sector is contributing a lot to our society, to our economy and to our local communities, which is really important.

One of the things that I wanted to highlight on top of what has already been mentioned is the material aspect of how valuable EU funding and EU collaboration is to the education sector. Speaking from the student perspective, of course, because that is what I am all about, students are dependent on EU funding for programmes such as Erasmus. I will hopefully speak more about that later. A figure that I want to bring to the table today is that Erasmus+ students coming to the UK generate £420 million for the economy every year, which is quite a significant number.

On top of that, the opportunities that they have and the access that they get because of EU funding and EU collaboration are rich and beneficial to their educational futures and their continued growth in our society. It amplifies how essential the education sector is at large and how much of a bedrock it is for our society. It is really important, and I am glad that we are speaking about it today.

Vivienne Stern: I will not rehearse some of the figures that colleagues have given you, but I will remind the Committee of something that I

think is well understood. The UK is the third most prolific producer of research, behind the US and China, in volume, but we have ranked first internationally every year since 2007 for quality, as measured by field-weighted citation impact.

In essence, we do well on a fairly modest level of investment. About 11% of the income that universities receive to support research—around £6.5 billion, although Richard might correct me on that—comes from EU sources. The receipts from EU programmes are very significant.

One of the things that I think has allowed the UK to perform so well on a modest level of investment is the extent to which we collaborate internationally. More than half of the research output that the UK produces is co-authored by international counterparts. Within that proportion that has international co-authorship, 60% of those partners are within the EU. Our three most frequent partners in research are, in order, the US, Germany and France.

Q2 **Baroness Prashar:** Good morning, everybody. I would like to hear from you whether you think the UK should seek a third-country affiliation with the EU Horizon Europe and Erasmus programmes at the end of the transition period.

Professor Sir Richard Catlow: I think the answer to your question is quite simply yes. The UK should seek the closest possible association with Horizon Europe as soon as possible after the end of the transition period.

We have heard from others about the value of our collaboration with the EU, so I will not repeat all the figures, but I will mention a couple. Vivienne mentioned that 11% of Russell Group research income comes from the EU. In some disciplines such as chemistry it is higher, at nearly 25%. It is extremely valuable for the financial contribution that it makes to the research base in the UK

However, as Catherine pointed out, it is not just about money; it is about collaborations, it is about networks, it is about UK scientists interacting with the finest scientists in Europe at all levels from PhD students to senior professors. There are huge benefits in our association with our current partnership with EU scientists and there have been huge benefits from association with Horizon Europe. In saying that, I speak certainly from the Royal Society, but from all the academies and I think for almost the entire UK research base.

I have one final point before I pass on. We will have to accept that even if we are successful in gaining this close association with Horizon Europe, there will almost certainly be a gap after the end of the transition period and we need to think very carefully about how we manage that gap.

Vivienne Stern: I agree with everything that Richard has said. It is very important, and we have said this repeatedly throughout the last few years, that it is not just about the money. Horizon is unique. It is not a programme that would be very easy for the UK to replicate, although we

will have a very good go, I imagine, if we are excluded from Horizon as a result of the failure of negotiations.

It is simply inconceivable to think that the UK, in anything like the short term, could create something that could provide that kind of stable, predictable, collaborative platform. The fact that in Horizon projects you can work not just with a counterpart from one or two countries but with a wide range of countries makes some research possible that would not be possible without such a structure, particularly research that needs scale or that needs access to facilities or conditions or datasets that exist in multiple places. All that requires institutions to be able to pool physical resources, facilities and so on. The value of trying to seek that association goes far beyond the financial for us.

On Erasmus, we have studied the link between the students who go abroad and their employment outcomes, earnings and satisfaction with their careers, so we know that there is a very strong correlation between periods of study, work or volunteering abroad and better academic and employment outcomes. Too few UK students currently have those opportunities, and we should be doing everything we can to increase the proportion who have had some of that kind of experience, especially if we want those individuals in their working lives to take advantage of global opportunities, including opportunities to trade globally. We need to be doubling the proportion of UK students who go abroad. Leaving Erasmus would put a dent in our outward mobility, and it is something that the Government should prioritise.

Hillary Gyebi-Ababio: I am happy to follow on from that, especially because I want to speak to Erasmus. The points made about Horizon are completely correct. It is an invaluable component for researchers to be a part of. If we are not a part of it, a lot of our researchers will lose out on that invaluable collaboration as well as funding.

When I speak about Erasmus, I want to set the scene first and let you know the scale of why Erasmus is important. Currently over 50% of UK students study abroad through Erasmus+. As Vivienne said, it is essential for outward student mobility, especially for students from disadvantaged backgrounds but particularly for students in further education, because it allows for short placements that fit well with the existing college structure, which is vital.

The other aspect of it that is really important is that it enables a great range of students from all different backgrounds to engage with international programmes and engage with this opportunity to go abroad and study. Where traditionally gap year students would be able to have the means to do that, Erasmus+ almost closes that gap for disadvantaged students and enables them to engage with international opportunities. That is really important.

Going with my theme of trying to keep it short so that we can have equity of time, I want to emphasise that this is a ready-made platform that works well, and if we lose access to this ready-made platform, which

has so many benefits for students and the sector at large, we are potentially putting in jeopardy the opportunity for students who have signed on to courses that have compulsory study abroad and who want to take that opportunity.

The equitable nature of this programme is invaluable, and, alongside Horizon, it is something that the education sector continues and will continue to benefit from if we endeavour to stay part of both of them.

Catherine Guinard: It is hard for me to add anything to those three thorough and excellent responses. The EU funding programmes are the world's most ambitious multilateral schemes, and you just cannot replicate that at a domestic level. The UK has always been an active and successful participant, and we know that researchers in the UK feel passionately that we should associate to Horizon Europe. It is something that we talk to them about frequently. That is why our organisations have been working so hard to ensure, to the extent that we can, that government understands the importance of association to Horizon Europe.

I will stop there, because the rest of the responses were so thorough that I do not have anything else to add.

Q3 Lord Sharkey: Good morning. I declare an interest as a council member at UCL and chair of the Association of Medical Research Charities.

My question is to do with what happens if we do not affiliate with Horizon Europe. What should be the priorities for future domestic research funding if that happens?

Professor Sir Richard Catlow: The first point to make is that UK science will be weakened if we do not associate with Horizon Europe. We have to say that clearly and unambiguously. However, we have to be realists, and it is possible that we will end up not associating with Horizon Europe, so, as you say, we will need to think about domestic alternatives. In fact, the Royal Society has been engaging in that activity.

We would have to try to construct an alternative to the ERC, in which the UK has been particularly successful. That will not be easy, because one of the things that has made the ERC so successful is its international dimension. We can provide funding to provide the kind of fellowships and support that the ERC provides, but I want to underline that it will not be equivalent. It will be a substitute, but not a fully adequate substitute.

Even more difficult, I have to say, will be trying to find ways of keeping networks going, because we will not have access to these networks. We will have to try to set up flexible, adaptable and agile international collaborative schemes and we will have to work hard to do that. Again, I want to emphasise that it will be very difficult to make those an adequate substitute for the ready-made networks that we have via Horizon Europe.

Yes, the scientific community is flexible, adaptable, and it will engage with alternative schemes, but the alternative schemes will not

adequately, in my view, reproduce what we have at present from the ERC and from the other funding mechanisms and schemes in EU collaborations.

Vivienne Stern: I support everything that Richard has said. Universities UK published a set of proposals yesterday for the structures that might be put in place to support international research collaboration. We are not putting forward those proposals only in the event that we cannot associate, because some of those proposals we think the Government should explore in any case.

The intention, of course, is to try to inform what comes next if we cannot associate. As Richard has said, I think the Government have negotiated in reasonably good faith. I think it is clear that the UK Government want association, and actually it is clear the EU wants association. It does not mean that is where we will end up, at least in the short term, so we have to be realistic, as Richard says.

There will be several areas where the Government need to take action. Richard has described a domestic replacement for the European Research Council. This is the gold standard. It is the high-prestige scheme that supports researchers at every stage of their career and allows the UK to attract some of the superstars who can bring these portable grants and use them in UK institutions.

The discovery fund, which the UK Government have started talking about, has the beginnings of what would be needed. I support what BEIS and Amanda Solloway have done in trying to develop something that can echo the mechanisms that are offered by the ERC.

As Richard says though, to reproduce the prestige of a scheme like the ERC is not a simple task, and it will be difficult for the UK to establish it on anything like the same footing as the ERC in terms of attractiveness to international talent.

Of course, there are other things you have to do. We want to be able to continue to take part in collaborative research. It will be open to us, even if we are not associated, to join with European and other partners as a third country in collaborative projects.

There is a critical thing here, and if you do not mind I would like to labour this point a tiny bit. The Government have said in the R&D road map that they will fund the UK's third-country participation in collaborative projects, but they have given two different versions of that guarantee. They say that if we are out for a short period and the UK Government introduce a stopgap, they will write a blank cheque. Any successful academic who is part of a consortium bid that is successful will receive funding. That means that I could go to my counterparts in a network of European universities and say, "If you include me in this project, if you're successful the money will come. I can bring my money with me".

If we are out and there is no association agreement, the guarantee reads differently. It says that the UK will look to find a way to fund third-country participation. We keep asking the Government what they mean. Does that mean there will be some sort of additional evaluation mechanism so that the UK participant somehow has to go through another scheme of judgment? How will they ration this? They need to come forward and tell us that, because at the moment those consortia are forming for the applications that will go into Horizon Europe in its first year of operation. Those teams are getting together right now, and the UK guys cannot say with certainty, "If you include us in this project, we can pay our way".

This should worry us, because in the last three or four years since the referendum, even though we have been fully part of Horizon and nothing has changed, we have already seen UK participation in those projects plummet. Our participation in EU-funded projects is down by 25% since 2015. Crucially, our leadership is down by 46%. That is the result of uncertainty about our status, which will be amplified in a non-association scenario. It is critical that the Government tell us what they mean with that third-country guarantee. I am sorry for going on a bit.

Lord Sharkey: No, it is very important.

Catherine Guinard: To add to what has been said already, it is important to understand the scale and the number of opportunities afforded to us by collaboration. The ERC and Marie Curie are crucial, but they are also schemes that are talked about a lot. When we talk about this sort of issue and domestic alternatives, it is important to remember that there are not just a couple of things to think about. There is a whole range of other things that sometimes get less airtime: the Innovative Medicines Initiative; the EDCTP, which is about global clinical trials; and the collaborative awards. There is an incredible amount to replicate, and that cannot be done quickly. It will need a lot of time to think through if we want to deliver in a meaningful way.

I would emphasise that although I am really pleased that the domestic alternatives work is happening in BEIS and that there are organisations that are supporting that work, we need to be really clear that it is definitely a second choice to associating at this stage.

Hillary Gyebi-Ababio: I will make my remarks brief, because my fellow witnesses have set out well that not being part of Horizon will have catastrophic effects on our research and education sectors. If the UK does not affiliate, it must deliver on the "global Britain" catchphrase by establishing new platforms that allow for international collaboration and which are open to all institutions, not just elite institutions or institutions that are viewed as elite. They should also be open to researchers at all levels.

In thinking about research, it is important that we continue to endeavour to look at research that is crucial right now. I can give an example. Research into the green economy and tackling the climate crisis is right

at the top of the agenda, and it is important that, alongside what the other witnesses have commented on, we think about the fact that we have a ready-made package that works so well and that any other alternative would just not match up. That will be really important to think about.

Q4 Lord Bruce of Bennachie: Good morning, and my apologies for my technical absence for the first three or four minutes and the introductions. I will resist saying that a lot of this is quite depressing, because we are losing something very valuable and, as you rightly say, it will be very difficult to replicate it.

I want to concentrate on Erasmus, and I am sure Hillary will want to come in first on this. The Government say that they are developing an alternative to Erasmus+ to “prepare for all eventualities”. The question in my mind is how they can replicate something that is dependent on the international framework of the EU.

What provisions do you think could be put in place to work—and, indeed, what incentives, given that we want to attract students here? I know from my own contact with students that the scheme has been essential, particularly for students from poorer backgrounds. Frankly, if they have to go outside Europe the costs are much higher, and without the Erasmus subsidy even within Europe they would find it prohibitively expensive.

What provisions could be put in place? How could it work in any way that would be as good as what we have? Have you been consulted about it? Have the Government sought your views? What chances do we have of either participating in Erasmus+ or being part of it?

Hillary Gyebi-Ababio: Thank you for that question, which is really important. The first thing to say is that you are completely right. There is so much value and virtue to the existing Erasmus+ scheme and our association with it that any attempt to replicate it risks us losing the rich support and opportunities that the current Erasmus scheme gives us.

With regard to the things that are crucial and that have been at the top of our agenda when we have been thinking about any alternative to Erasmus, first, as you said, it should be open to all students from all different backgrounds. It can be extremely expensive to go abroad, and Erasmus+ has given generous maintenance funding and support for students not only to be able to go abroad and study, but to experience that international study in a rich way. It is important that we continue to allow them to be supported to broaden those connections and have those experiences.

The other thing that has been on my mind is that we in this bubble sometimes think a lot about HE, but ultimately Erasmus expands beyond HE and we also need to think about further education. The current Erasmus scheme allows college students to go on short-term study abroad opportunities, which means that they will not have to disrupt their current college pathway or any familial or loved-one responsibilities that they might have.

On the flipside, it is really important that we do not just think about students going abroad but about students coming to the UK who also benefit from our education system. It is of mutual benefit to the students who come here and the students who are already studying here, because it allows those international connections and experiences to be fostered in the UK for both kinds of student. If we are going to do anything, we have to make sure that it is accessible and enabling for students from all backgrounds to be involved, and that it continues to give generous maintenance funding and support students to have those international experiences.

On your last question, we as the National Union of Students have not been consulted by the Government, which is disappointing. It is important for us to have these spaces where we can talk about this and continue to listen to students' voices about how essential programmes like Erasmus are for their educational development and experiences.

I will yield there and allow my fellow witnesses to speak as well.

Lord Bruce of Bennachie: Before they do, is there effectively a link between Erasmus and Horizon? This student exchange presumably leads sometimes to connections and networking that might influence research in the longer term. I just wondered if that might be an issue as well.

Hillary Gyebi-Ababio: Yes, it definitely is. When students go abroad and are able to meet new people, as well as to study things that are not already in their curriculum or their purview when they are in UK education, not only does it give them those connections but it fosters their own willingness, or rather excitement, to go on with further study and to do it in ways that they did not think they could before because they have been exposed to these wider connections, such as what is going on abroad. It is important to recognise that link, so thank you for asking that further question. It is essential.

Vivienne Stern: First, we have been extensively consulted on the national alternative for Erasmus. What Hillary has said is absolutely right on a number of points.

We start in a somewhat similar position to the discussion about Horizon. We have this thing that has a recognised brand. Crucially, it funds both incoming and outgoing mobility, and of course it supports things that are not just mobility. The big new idea in Europe is a thing called European university alliances or networks. There is a real drive, funded through the Erasmus programme, to create institutional networks that allow for movement between institutions in the course of a degree. It is quite a visionary idea. It is explicitly linked to Horizon.

The Commission is increasingly seeing these two programmes as complementary. I am not absolutely sure whether, for the UK, that means that buying into Horizon would come with the requirement to buy into Erasmus. We have been trying to follow the negotiations closely, and I know that there is a cross-programme negotiation. The individual

association agreements will hang off that, but whether you will be able to pick and mix or whether or not you buy one and you get the other is not clear.

It is clear that the UK Government have not been so keen on Erasmus; they have been a bit lukewarm. So we have to take the UK national alternative seriously. We have been working on proposals for this for over two years. We have put together quite detailed advice, which I could share with the Committee. It picks up a lot of things that Hillary says. We could do more in a national scheme than perhaps Erasmus has done to support short-term mobility and additional support for students from widening participation backgrounds. Erasmus is a great scheme, but it has not always supported those sorts of things as well as we would have liked, although the new programme will be better than the existing programme on that score.

There are two significant issues with the national alternative, as I see it. The first is that although the work is being done and I have been told privately that the Government could turn around a launch of a domestic scheme within 24 hours if they had to, nobody has ever said the money is there, so while we have a clear commitment on the research side that in the event that we cannot associate the UK Government will fund an alternative mechanism to support research, nobody—not the Treasury, not the Prime Minister—has said the same for Erasmus. Given the financial pressures that the Government will face, that makes me very nervous.

It is particularly important, because we are in this period in October where universities and students start allocating study-abroad opportunities to students and students start making those decisions. If universities in October cannot say with certainty, "You either have Erasmus or you have something at the national level", they cannot make those plans—they cannot start placing students, they cannot start signing agreements with counterpart universities.

Critically, the Government have to announce as a matter of urgency that they will fund an alternative scheme. We would like them to make it clear that that would be at a similar scale to the Erasmus programme, because of course you could fund a scheme that was much smaller. I would like to make that one of my key points.

We would also like the scheme to be UK-wide and it is not clear that it will be. There has been a bit of disagreement between the four nations on the nature of a scheme. Part of that has been about whether the scheme should fund incoming as well as outgoing mobility. I want that to be resolved. Universities UK has sister bodies in Scotland, Wales and Northern Ireland, and we all want a UK scheme.

Lord Bruce of Bennachie: We would be grateful if you could share your proposals with us as you said you could.

Vivienne Stern: Yes.

Professor Sir Richard Catlow: I fully endorse what has just been said. I have been a university teacher as well as a researcher, and I know the huge value of giving students this international perspective.

Q5 **Baroness Couttie:** Good morning. It is not this Committee's remit to cover the future immigration system of the UK, and we have started to touch upon the importance of the networking and collaboration and the sharing of ideas that takes place through both Erasmus and Horizon. What impact do you think future engagement with these programmes will have on the mobility of researchers and students that is so vital to all this?

Catherine Guinard: We talked earlier about collaboration and how that is a vital ingredient for research, but mobility is too. Mobility is really important to research, to researchers and to research careers. We know researchers who are more mobile are more effective and more successful. It is really important for the smooth running of Horizon Europe, if we associate with it, that mobility is maintained, because it is absolutely crucial to the ultimate success of the programme.

At UK level, the global talent visa is a helpful mechanism for ensuring that mobility is maintained and that this can happen, because it links eligibility to a recognised source of funding like Horizon Europe. The basis is there for ensuring continued mobility, which is positive and crucial.

The cost of these visas needs to be looked at urgently. In comparison with other EU countries like France, these costs are really high. The immigration health surcharge is about to rise to £624, which for a family of four on a five-year visa means a £13,000 up-front cost. You will ensure that the global talent visa sets out and achieves what it is trying to do, which is ensuring the mobility of researchers, only if you address this cost issue.

Baroness Couttie: Thank you. Richard, do you have anything to add?

Professor Sir Richard Catlow: Yes, largely to endorse what Catherine has said. Mobility is absolutely vital for a successful research base. I know personally how my research programme has benefited hugely from talent from all over the world, but especially from Europe. It is important to emphasise the role that PhD students play in research and the benefit that recruiting international PhD students has provided.

Lastly, I would underline what Catherine has just said about the visa costs. We welcome the global talent visa. It is a good development, but we still have these punitive visa costs. I will not repeat Catherine's statistics, but I have personal experience of trying to recruit talented staff who could not afford to come to this country because of the visa costs for themselves and their families. It is a really important issue.

Baroness Couttie: Thank you for highlighting that.

Vivienne Stern: On the visa cost, one way the Government could fix this is by charging on an annual basis rather than an up-front basis. It would

not completely eliminate the problem and, as Catherine said, we should be looking at our costs compared with competitors. We do not compare favourably. The NHS surcharge, and the fact that you have to pay up front for the whole family coming in, is adding to the problem.

Professor Sir Richard Catlow: Absolutely.

Vivienne Stern: I agree with what Richard and Catherine have said about improvements in the visa system. We have to recognise that the Government have done a lot on that front to make the UK a more attractive system from a visa point of view. I have gone from spending most of my life criticising the Home Office to being basically a willing and enthusiastic partner in a lot of the things it is trying to do. That has been a real change. I also have to recognise that it has been fantastic during the Covid crisis in introducing flexibility to make sure that the visa system does not catch people out.

We could, of course, go further. Beyond visas, the critical thing is whether the UK will be the kind of place you want to come and build your research career. It takes us back to things like the ERC. If we are not the kind of place where you can win Horizon grants and ERC grants, and if our national alternative is not regarded as sufficiently or equivalently prestigious, you would probably think about going somewhere else. The kind of people we want to attract have lots of options, which means that we have to pay very serious attention to whether we remain a really attractive place to build a research career.

Baroness Couttie: Absolutely. How nice to hear positive things about the Home Office. It is rare. Hillary, do you have any comments?

Hillary Gyebi-Ababio: A lot of what I had to contribute has been said already. The only other thing that I wanted to say on the visa point is that there is currently no immigration route to allow students to come to the UK for more than six months. That means that if a student was coming for a year, for example, they would have to get a whole student visa, which is extremely expensive for a student to pay for if they only want to come and study abroad for a year and have this experience.

I want to labour that point about visas, but everything that was on my mind has been echoed already by the other witnesses, so thank you for that.

Q6 Lord McNally: In our previous inquiry with business and professions, there was a lot of emphasis on the need for data adequacy passing over seamlessly at the end of this year. Is the transition for the research and education sector just as important? How important technically is the flow of data for your work, and how important is data adequacy? That is a bit “techie”.

Catherine Guinard: Personal data is the lifeblood of research. It helps us to understand the world around us—for example, the link between lifestyle and health. It enables us to conduct clinical trials. It is

invaluable, and to use personal data most effectively it needs to cross borders and be used in research in that way.

At the moment, the legislative framework for doing that is the European general data protection regulation. I should add that the UK research sector, and probably the university sector, spent a long time trying to shape that with partners in Europe to make sure that it worked for research and allowed research to be carried out in the most effective way.

It is really important that, following the transition period, an adequacy agreement is in place that replicates the GDPR. If there is no adequacy agreement or some sort of alternative such as a sector-specific alternative, if that falls through as a kind of last resort, there is a real risk that that would undermine the research that we can do, which obviously would have an impact on our research output and ultimately on health and well-being as we know it.

It is hard to quantify but an absolutely crucial issue for research, so I am pleased that it is being talked about today.

Lord McNally: Our brief says that personal data is an essential resource for health and social research, among other areas. This is quite frightening. We are in the middle of a health crisis and we are hoping that somewhere in the world there will be a vaccine that can combat Covid. A disruption of research information at this stage is catastrophic.

Perhaps one of you can tell us whether the Government have indicated whether it will be all right on the night, which is about the same information that we have so far, or whether there is a backstop for this, particularly in the medical research field, if the adequacy is not arrived at. It does seem to be one of these ticking time bombs.

Vivienne Stern: We cannot be confident that it will be okay. It is a cliff-edge issue. One day you can exchange data, you can access European databases, you can use European systems and European cloud-based services, and the next day you will not be able to. We have to assume that there might be a delay between the end of the transition period and the UK getting a data adequacy agreement. I do not know whether anybody can say for certain how long that would take.

There are some things that universities can do. First, they can understand what data they are relying on and make sure that they are aware of the potential for that disruption. Secondly, there are clauses that you can insert in contracts that can get around the data adequacy issue, and we have published some model clauses. Universities have been working on that for a while when it comes to agreements between two parties.

You would hope and expect the UK and the EU to get back around the table pretty quickly to sort it out in the event of no deal. I have heard no concrete reassurance that that will happen. In fact, I seem to be hearing

from the UK Government, "Don't imagine that if we leave on the 31st without an agreement we will keep negotiating afterwards". That is quite horrifying, because surely they have to keep negotiating, and not to extend the transition period. There will be a whole host of issues on which we need agreement.

Lord McNally: Apparently the Wellcome Trust has been doing work in this area and has suggested that there may be possibilities of sector-specific safeguards. Again, the question is: have any of you been consulted by the Government on this problem, or have you made it clear to the Government that this is a real problem?

Catherine Guinard: I would say that we have made it clear that it is a real problem. We have discussed it, but I do not regard the conversation as having a consultation and I do not think that solutions have been suggested, other than that the Government would seek a data adequacy agreement.

Professor Sir Richard Catlow: I am not aware there has been a consultation. We at the Royal Society have emphasised the importance of data adequacy, of access to data, and the present crisis emphasises the importance of exchange of data. Like Vivienne, I do not think we can be at all confident that it will be all right on the night.

Lord McNally: That is ominous evidence. Unless anybody else wants to come in on this, this is a public session and I hope that somewhere in Whitehall people are taking notice of this warning from the research sector.

Q7

Lord Thomas of Cwmgiedd: Good morning and thank you all very much for coming. I want to ask a very general question. What impact would a no deal or no-agreement scenario have on the research and university sector? Viscount Trenchard will ask you whether you are well-prepared, but in answer to my question could you just deal with what effect you think it would have?

Professor Sir Richard Catlow: I will be brief and simply say the effect would be very negative. It would be damaging in that we would lose funding, but we may try to replace that domestically. We would lose access to networks, we would lose collaborations, we would lose prestige, we would lose the influx of talented international scientists. It is hard to see a silver lining. It would be seriously damaging to what is a very successful UK research base.

Catherine Guinard: I echo that. We appreciate that there is a lot of preparation going on within government, but, even with the best preparation, no deal would be damaging in the short and at least medium term and absolutely needs to be avoided.

The issues that Professor Catlow has picked out—access to funding, recognition issues, research mobility, the things that we have discussed on this panel—would all present a challenge. In the mid-term at least, those issues would coalesce to make the UK overall a less attractive and

less effective place for people to come to and for research to happen in. I would echo what has been said: that it is something that we absolutely should be seeking to avoid.

Hillary Gyebi-Ababio: I would echo what has been said already. It is particularly important to note that even the prospect of no deal happening is already having an impact on our education sector and our research sector. Research projects have very long lead times, so this uncertainty is already having an impact on whether researchers know the future of their projects and what will happen.

This also speaks to students who are not yet in research roles but are in courses that have compulsory study-abroad components or who would benefit from that international collaboration. There is uncertainty for what that means for the future of their degrees and for their educational future, too.

I emphasise that the event would have a catastrophic impact, but we are already seeing horrible impacts from people not having certainty about what will happen with all this. No deal is posing a significant threat.

Lord Thomas of Cwmgiedd: That is very clearly put. Vivienne Stern, do you want to add anything to that?

Vivienne Stern: Yes. I do not want to pretend that I think that no negotiated outcome is a good idea; it is a really bad idea, for all the reasons that others have given. It is a bit different from last October when we were facing no deal on 31 October; that would have been an absolute mess then.

Universities UK has updated our guidance for universities on what would happen at the end of the transition period if there was no agreement in place. There are some areas where, frankly, things are a bit more straightforward. We have talked about programmes; we have talked about Erasmus and Horizon. We would like a bit more detail, because we are getting down to the wire now, but you can see how you would go from 31 December to 1 January. Similarly, the immigration arrangements are clear. We might not like all of them, but effectively you can tell students and staff what they need to prepare for. That certainty is helpful.

There are other areas. You mentioned data adequacy. The other one I would highlight is mutual recognition of professional qualifications. There will be no agreement in place that allows architects, nurses, dentists and vets educated in the UK to have their qualifications recognised in European member states. I imagine there will be quite a lengthy process to achieve a set of recognition agreements, and that will take some time. We will have a period when graduates of our universities are not necessarily able to receive automatic recognition of their qualifications. That is a bit of a mess.

There are other things that really worry me which I do not think have been talked about enough. Under the current arrangements, the services

directive allows UK universities to offer programmes in other member states. We call this transnational education, and a lot of universities teach programmes in Europe; they have some sort of partnership or some kind of outpost. We do not quite know how that will work if there is no sort of agreement about those arrangements. That is an area that needs a bit of attention.

When we ask universities whether they feel prepared, there are some things that we have talked about that they cannot prepare for because they are waiting for clarity that is not in their gift to achieve, but universities have done what they can to anticipate and mitigate the effects of no deal at the end of December.

Lord Thomas of Cwmgiedd: Thank you all very much. That was very clear.

Q8 Viscount Trenchard: Good morning, everyone. You may feel that my question has already been at least partly answered, but I would like to go a bit deeper into the question of how well prepared research and educational organisations are for a no-agreement scenario at the end of the transition period.

To what extent do you feel that the previous government guidance, which was published ahead of previous no-deal exit dates, was a good guide and useful for organisations seeking to prepare for a no-agreement scenario? They are both on the GOV.UK website. The one on Erasmus was withdrawn in March and the one on Horizon was withdrawn in January. I am not sure if there is an updated version. How adequate has the government guidance been to help you in your preparations?

Professor Sir Richard Catlow: I echo what Vivienne has said. Universities and research organisations are doing all they can to mitigate the problems, but there is still a great deal of uncertainty. Vivienne highlighted some of the areas of uncertainty. Government guidelines have provided some useful information, but research institutions and universities will encounter problems unless there is greater clarity on a number of key issues.

Viscount Trenchard: Thank you. Catherine, would you add anything to that?

Catherine Guinard: As a funder of research, it is not really our area. Obviously, we will endeavour to communicate to our researchers if we get to that scenario, but I think other people on the panel are probably better placed to respond.

Viscount Trenchard: As far as the universities are concerned, I note that Universities UK published its own paper, called *A 'no deal' Brexit: Implications for Universities and Minimising Risk*. I think Vivienne just said that it had been updated, or is the November 2019 version the newest?

Vivienne Stern: No, we have issued an update. I am sorry about that. I keep telling people and it is difficult to find on our website, but I can send

the Committee the guidance that is specifically about the end of the transition period.

The only thing I would add to what I said before is that everybody is focused on Covid. I am giving a talk to university human resource directors this afternoon, because there is a widespread feeling that people have been so absorbed by the implications of Covid-19 that they have not begun to think again about what the end of the transition period might mean. That is worrying us, because when we ask, "Have we covered everything? Is there something you are worried about that we have not identified? Is there some additional support that you need?" I am afraid that we get silence. I worry that that is not because the answer is, "Yes, we're all happy", but that, "We don't know. We're not thinking about that. We're busy solving a massive crisis".

We have tried to imagine all the things that could go wrong, but the thing that will eventually keep me awake at night is the fear as we get towards the end of December that there is something really significant that we have all missed. I have heard Michael Gove talking about this in terms of moving house. He said that moving house is disruptive, but it will all be fine because we know where we are going. We are moving house, but we do not know where we are going. That is hard.

Viscount Trenchard: Thank you. Hillary, do you have something to add to that?

Hillary Gyebi-Ababio: Yes. As much as I recognise that universities are doing a lot and are being stretched in many ways in trying to prepare for this, it is important to note that students have not had much communication on what will happen if there is no deal and what the impact on them will be. As much as preparations are going on, it is crucial that if there are any preparations and if anything happens, students have that information, too.

Secondly, student unions are also very important here. I was at a student union only a few months ago before coming to my national position. We are literally working back-to-back days just trying to support students, whether it is getting them food or firefighting a pandemic and trying to ensure that students still get the education that they wanted to get at universities. There is no capacity even to start to think about preparing for a no deal, because, right now, students' lives are on the line, and that is what the focus is on.

On the guidance question, it is important to note that the guidance was produced pre-Covid, and we are now in an environment where the university sector, the education sector, looks really different. If there is any chance of us being able to get through a no deal in any way, shape or form, it has to be updated to the landscape and the context that we see now, not only for the survival of universities but crucially for the survival of students, who have futures that they are desperately trying to hang on to in the midst of what has been an uncertain time for them back to back.

Those are my contributions. I hope they speak thoroughly to the question.

Viscount Trenchard: Thank you. That is very useful.

Q9 **Baroness Neville-Rolfe:** I should declare an interest. I am a director of Health Data Research UK, which is also in the Wellcome building.

We have heard a lot of what can go wrong, and I think we understand that. Putting on some more positive spectacles, given the strength of research right across the UK—there is a diverse population, and good collaboration everywhere around the world—what are the opportunities for UK universities and research organisations beyond Brexit and Covid? Are there more positive aspects that we could try to bring out in our report?

Hillary Gyebi-Ababio: I will go first, and if my fellow witnesses want to say more, they can.

First, it is important to note that although there may be potential opportunities that we can grasp, it is important that we do not underplay how important the current opportunities are and how impactful they are. It is important to note that there will be very few, but there are potential global opportunities that could be essential to the research that we do in the UK already.

I mentioned the climate crisis, and in the midst of the pandemic we are already seeing what global collaboration does and what it means for saving our communities, our society, people in the UK from Covid, but we are also looking at international projects that would attract international researchers to come here and share their expertise and expose us to wider, richer thoughts and research. Hopefully there are more positive things coming, but I have to emphasise that they will be very few compared to the richness of what we get now.

Vivienne Stern: Starting with student exchange, one of the good things about a national alternative scheme is that it would be global in focus, so we would be able to fund on a much larger scale. If we get the funding, we will be able to fund mobility to a much wider range of destinations. There are great opportunities in that.

Secondly, on research, we have had a pretty great structure to support research collaboration with Europe. We have also had a reasonably good structure to support collaboration with developing economies over funded research. The big gap has been in support for collaboration with advanced economies. That is the gap that I think we would be able to fill with a new focus on re-establishing a network of funding opportunities for international research collaboration. That is another opportunity.

Thirdly, hypothetically, trade agreements could present opportunities. I say hypothetically, because although we have looked quite closely at what Australia got out of trade agreements in educational research, I am yet to see any real evidence that any of the current negotiations will mean anything particularly important for us. Hypothetically you could do

things with reciprocal visa agreements, favourable mobility arrangements, recognition of qualifications and regulatory reform, for example. Hypothetically, there could be opportunities in that.

Baroness Neville-Rolfe: That is very helpful, thank you. Richard and then Catherine, another thought I had is that perhaps you could get a better focus on development as well as research through collaboration with business. We have talked very much about research and we have understood the value of collaboration. Vivienne, Richard and Catherine may want to comment on opportunities in general.

Professor Sir Richard Catlow: The one good thing that has come out of all the discussions we have had over Brexit is that the key importance of international collaboration has been highlighted. That has been brought to fore and made us aware how vitally important it is. I echo what Vivienne has said: we have very good networks within Europe that we must keep, but let us use this opportunity to establish stronger collaborations with other leading scientific nations. There is a real opportunity there that we should grasp.

I agree with you that as well as building these collaborations in basic research, let us also build them in development. There is an opportunity; the opportunity comes about, because we now realise how much we gain from international collaboration. Let us keep the collaborations with Europe, because they are so effective, but let us build strong collaborations with other leading scientific nations.

Catherine Guinard: I echo what has been said by the other speakers. Vivienne spoke eloquently about the effect of Covid and how it has taken up so much bandwidth. An important point that has not been mentioned so far is that there was a time, prior to the pandemic, when Brexit was taking up a lot of energy, a lot of bandwidth, a lot of resource in the organisations on this panel and indeed across the sector. It will be important that the Brexit process comes to a conclusion in which there is clarity and we can all move on to work on other priorities. There has obviously been a lot of work in the sector to try to ensure that we get the best outcome that we can. I make that point: that a conclusion is important.

Thinking beyond Europe is an interesting point to make. That is absolutely right, but I challenge it slightly in that obviously we are now much more aware about the importance of international collaboration, but we did not need Brexit to happen to do that; it is just that is now obviously where we look to next. It is important to understand that there was nothing stopping that movement in the past.

My third point goes back to the UK Government, in a way, in that Brexit and previous UK immigration policies have held the UK back in some way from deepening international collaboration and taking up its ambitious place on the global stage for research and innovation. Once Brexit comes to a conclusion, there is a real opportunity for the UK to rewrite its own script and carve out a compelling and exciting narrative that speaks to

researchers coming to the UK from elsewhere. It is a real opportunity for a reset and for the UK Government to think about who we are and who we want to be going forward.

Baroness Neville-Rolfe: A compelling new vision. That has to be for people within the UK as well as those who are joining us from abroad, it seems to me. Thank you very much indeed.

The Chair: We have a few follow-up questions. First, I would like to quickly go back to Baroness Prashar, who I am conscious I cut off halfway through, to see if she wants to follow up.

Q10 **Baroness Prashar:** The second part of my question was about the cost of the affiliation. You all said that it was important for us to be affiliated as a third country. Do you have any idea of the cost of such affiliation, and would it be worth its while?

Vivienne Stern: This is a critical question. You have understood that everyone on this panel wants association, but we should not obscure the fact that the financial negotiations are not in a good position and that the Commission's offer to the UK is not appealing. The crux of the issue is that at the moment the Commission is suggesting that there should be a one-way financial correction mechanism, which means that the UK contribution could go up if we win more than we contributed originally, but it could not go down if we win less than we contributed originally.

You ask about the cost. The important thing to mention is that the budgets have not yet finally been determined, so any estimation of the cost has to be based on what you think the Commission will end up setting the budget at. Assuming that the Horizon budget will be around €80 billion—it might be more than that—UKRI has calculated that the UK's contribution would be around €15.2 billion over the life of the programme.

In order to receive equivalence to €15 billion in receipts, we would need to win 16% of funding from the programme. We currently win 12.7%. That implies that even if we continue to participate at the current level, there would be a net contribution over the life of the programme—seven years—of about €3 billion. Even we think that does not look fair, and we have been saying to our European counterparts, "You want us in this club. Come back with a two-way correction mechanism so this does not have to be an argument about money".

On the Erasmus front, again we have to guess what the budget will be, but we think the contribution over the seven years would be about €3.8 billion. If we continue to participate at the current level, we think that the UK's receipts would be in the order of about €1.6 billion, so that under that calculation you would expect to make a net contribution of just over €2 billion.

However, when Erasmus students come to the UK they spend money in our economy, and that is captured in the UK's export figures. In fact, over the seven years of the programme we would receive about €2.9

billion—these figures are all in euros—from the money that incoming Erasmus students spend in our economy. If you include those in your calculations the UK would make a net gain of €0.7 billion. Sorry for lots of figures. I will send them to the Committee, if that is helpful.

Baroness Prashar: That is extremely helpful, thank you. Does anybody want to add anything else to that?

Catherine Guinard: Just to echo what Vivienne has said, the sector has been working hard on the financial mechanism. Earlier in the summer, Universities UK, Wellcome Trust and over other 100 signatories signed up to a statement of compromise that we sent to negotiators that outlined a way forward for talks on Horizon Europe. At the heart of that was the financial issue.

As Vivienne says, there is the issue of fairness. There needs to be some sort of regional balance between what we are paying in and what we are getting out. It is absolutely right, as we will no longer be a member state, we can no longer be a net beneficiary. That is something that the UK Government have to accept, but obviously we need to control the situation; we cannot continue to be paying in an accepted amount of money that we cannot recoup back.

There is already a one-way mechanism that protects the EU from the UK underpaying. It is completely fair and reasonable to introduce a two-way mechanism that protects the UK in the same way. As Vivienne says, it becomes less an issue of cost; it is just about protecting both sides throughout the duration of the programme. That is really important.

Vivienne's point about our declining success rates is also key. We just do not know, and that is why there is different financial modelling. It is very much supposition, because once we have clarity on Brexit it is absolutely possible that they could rise up again once there is more clarity and confidence. There could be political fallouts, so we could continue to decline. It really is a matter of how optimistic you feel. We just need some way of ensuring that balance, as I say. Although the sector is really supportive of association, we not at all naive about the hard economic reality. It is something we have done a lot of work on as organisations.

Professor Sir Richard Catlow: I agree entirely with what both Catherine and Vivienne have said. As you know, I am very keen for association with Horizon Europe. I think it would be of tremendous value to UK science, but we cannot do it at any cost. We have to ensure that it is fair and value for money. We may have to accept that we make a modest net contribution, and that can be justified by the value we gain from participating in the network, but we need a fair and equitable system.

Finally, we can be optimistic about the ability of the UK science base to succeed in competitions in Horizon Europe. We have an excellent science base, so we can be optimistic there, but we need a fair and equitable

system while recognising that a modest net contribution is probably reasonable.

Hillary Gyebe-Ababio: I have been trying to keep equity, because I know I can talk. It is important to recognise the value of these programmes, and understanding and working out the complexities of getting to a good place so that we can agree to stay in those programmes should, for me anyway, precede leaving those programmes and making national alternatives, which might incur more costs in the administration of trying to make something new when we have something readymade that works really well and benefits so many students and the sector so widely.

Baroness Prashar: Thank you very much indeed.

- Q11 **Viscount Trenchard:** What do the panel think about the July 2019 independent report by Professor Sir Adrian Smith and Professor Graeme Reid on the design of future UK funding schemes for international collaboration, innovation and research, which said that “a persuasive case cannot be made for sizeable levels of public spending on activities that replicate, line by line, EU research and innovation arrangements in the UK”.

This begs the question: what would we like to change in EU research and innovation arrangements in the UK to suit our new position and the fact that we will be pivoting away from the EU and more towards the rest of the world?

Vivienne Stern: The Smith-Reid report was good and some of the ideas that they put forward are being adopted. The discovery fund is essentially their proposal. I think they started with that frame because they recognised that their job description, the thing they had been asked to do by Ministers, would not tell them how to replicate the thing that we were leaving. Therefore, they challenged themselves to think differently, and of course that is the right thing to do.

Having said that, it does not mean that if you have a structure that is fundamentally effective you should walk away from it for the sake of it. Where we have ended up in policy terms is sensible. It recognises that we should probably replicate something a bit like the ERC and that we want to continue to participate in collaborative projects as a third country in Europe where we can, but also that there are things that we might think about doing that we have never thought about doing before.

Adrian Smith and Graeme Reid recommended, for example, a stream of international research investment funding to stimulate inward investment in research infrastructure. That is a really good idea. In fact, in the paper that UUK published yesterday, we suggested that the Government should introduce a new scheme also to incentivise the attraction of foreign direct investment in research. We have suggested that it should be modelled on the existing Higher Education Innovation Fund, which is an English scheme, but could be replicated. So there are things that we could do differently.

Smith and Reid also recommended that we look at expanding our network of bilateral and multilateral partnerships, which absolutely we should do.

Professor Sir Richard Catlow: The report was very good, and Smith and Reid answered the question they had been asked. Their proposal for the discovery fund is, again, a viable proposal and it is attempting to reproduce the best aspects of the ERC. As I said earlier, it would be very difficult to reproduce some aspects of the ERC, but the discovery fund is trying to do just that: reproduce the best aspects as a UK initiative.

There are other good parts of the report that Vivienne has highlighted. In particular, I would like to highlight their proposals for international collaboration. There were some really interesting suggestions there, including what they call an agility fund that would allow us to respond rapidly and set up new bilateral and multilateral collaborations. There is a lot of really good material in that report relating to the suggestions regarding the discovery fund and international collaboration.

Q12 **Lord Sharkey:** My question follows up on Viscount Trenchard's question. If we do not affiliate with Horizon, it is not just a question of how much new money the Government provide; it is also how it is allocated and distributed. Have you put proposals to the Government on how this should happen?

Vivienne Stern: We have given them a rough estimate of what we think should go into the discovery fund and a Marie Curie alternative scheme to support fellowships. We have tried to argue that those should be supported as a first priority.

We have also talked about the distribution of European funding in the UK, as others have mentioned, which is different from the distribution of domestic research funding. Universities are going through a period where there is a lot of instability in the system. They are under financial pressure, and a whole bunch of schemes are coming to an end, including ODA-funded research schemes like the global challenges scheme and Newton. Universities are in a precarious position.

The last thing we want is a very significant shift in the distribution of research funding, so we have also said that, at least in the short to medium term, we need to make sure that the distribution of the research funding by discipline and by institution is not radically different. To put it crudely, European funding is more widely distributed across institutions geographically across the UK than domestic funding. As Richard has said, some disciplines are highly dependent on European funding. So the last thing you want to do is go from one day when the distribution is X to another day when the distribution is Y, just when universities are least able to manage that shift. We have argued for smoothing, and there are ideas on how it might be achieved.

Professor Sir Richard Catlow: The Royal Society has input into the discussion about the discovery fund. It has also proposed a substantial

expansion in international fellowships. In our own case, we are proposing to the Government that we expand our Newton international fellowships that bring talented career scientists to the UK from all over the world.

I would also underline just what Vivienne has said. The research based in universities and elsewhere over the last six to seven months has taken a tremendous hit with the Covid crisis. It is not in a position to stand further disruption, so whatever we do must protect the stability and integrity of the research base in the UK.

Lord Sharkey: A very good point. Catherine, would you like to say anything on this?

Catherine Guinard: No. I have nothing to add to what has been said.

Lord Sharkey: Hillary?

Hillary Gyebi-Ababio: I am the same as Catherine. I have nothing to add.

Q13 **Lord McNally:** Perhaps Hillary could answer this question first. I was interested in her point about our leadership in various parts of green technology and climate change. I wondered if next year's Glasgow conference gives us the opportunity to showcase those strengths in British universities.

Also, we have not mentioned the Commonwealth, although the Commonwealth has always had a strong education base to its work. Does Glasgow give us an opportunity to showcase, and can we do more with the Commonwealth?

Hillary Gyebi-Ababio: Sure, it is an opportunity, but I have to drill down to my point that as much as we have some leading research on the green economy and we are doing really well on it, the reality is that a lot of these issues are global. If we do not have that clear global collaboration that works well, we run the risk of doing things in pockets and bubbles that essentially do not foster the collaboration that is so important in these areas. So while there might be a good opportunity in relation to the Commonwealth, collaboration has to be at the top of our list. If we can do it in ways that are streamlined and do not have chaos surrounding them, that is the best way.

I have to drill down into my point that being able to maintain the current ways of collaborating and building on that would be my preference, rather than doing it in ways that feel a lot more individualistic and competitive in that collaborative sense. I do not know if I have explained or articulated that well enough, but I have to emphasise the importance of the current collaborations, especially for that continuity, because a lot of this research has also been done in collaboration. It is important to understand that, in view of whatever we can do to improve our chances.

Catherine Guinard: I would echo the point that at the heart is the association to these programmes. There are some interesting global opportunities. The UK's chairing of the G7 is interesting, and it is an

exciting opportunity to show leadership on a global stage on issues such as climate. Wellcome is talking to the UK Government about that.

I would definitely echo what Hillary says about these global opportunities having to go alongside our existing collaborations in Europe with these programmes.

Professor Sir Richard Catlow: Briefly, I agree with what has been said. I would like to underline the point that we have world-leading research in the UK in the area of low-carbon technologies. A lot of very important progress is being made. COP 26 is an opportunity to highlight the major scientific contribution that is needed to achieve net zero. In fact, the Royal Society is planning to do that.

There are other opportunities. Catherine just mentioned the G7. That, again, is an opportunity to highlight the key importance of science, including in a resilient recovery from the recent crisis. There are many opportunities.

Collaboration with the Commonwealth is important. Again, the Royal Society is working with our Commonwealth partners, and next year it will run a major Commonwealth science conference that will look at some of these opportunities.

Q14 The Chair: I will very quickly ask the question that I skipped earlier. To what extent do you think the needs and requirements of the research and education sector can be met through a comprehensive free trade agreement, or do you think it might be better if it were a separate UK-EU research and education agreement?

Catherine Guinard: To my knowledge, from the scoping work that we have done in Wellcome, I think it is important to recognise that there is no precedent for a science and innovation deal between the EU and another country that encompasses association. There are science and innovation deals, but they do not include association. Where association exists, it is pegged to a broader association deal, a free trade deal or some sort of bilateral arrangement.

If we find ourselves in a no-deal scenario where there is no broader deal with the EU and there is no precedent, it will be a much harder slog to agree a deal for science. That is why the sector is working so hard at the moment to embed association to the programmes in the broad talks and negotiations that are going on now. That is not to say that if we find ourselves in a no-deal scenario we should not absolutely, as a European sector—that is, organisations in the UK and the EU—work together to create the political will to ensure that some sort of stand-alone deal happens. It is vitally important.

At the same time, some of what has been discussed today, such as data adequacy and some of the things that you need to couple association, would not be there, so it would be a very complicated scenario to find ourselves in. It is important to understand that our best bet is to ensure association at this stage. I hope that makes sense.

Professor Sir Richard Catlow: I agree that it would be much better if a deal over science could be associated with a broader deal, but if we do end up in no-deal territory we will have to work hard to get a separate deal for science.

Vivienne Stern: If we do find ourselves leaving without an agreement at the end of December, we will have a new advocacy challenge. I think there will be agreements in other areas, because there will have to be, but our job will be to persuade both the UK and the EU that this is one of the areas where they should try to come together quite quickly. The dust has to settle on a lot of the other issues, but why not do this deal? It is low-hanging fruit; it is one of those areas where a bridge can begin to be built before it is possible to return to the issues that, in the end, will have to be resolved.

There are a number of topics that will seem urgent, where there has to be an agreement. I do not think that education and research will necessarily have to be in those categories. I would like us to just encourage the UK and EU to see these as areas of opportunity.

Catherine's point about precedents is very important, because that is the way the EU thinks. However, we also have to be aware that Switzerland lost access to Horizon Europe because of its referendum on freedom of movement in respect of Croatia. That offended a broader treaty, so Switzerland lost access to Horizon. If you have that kind of framework structure, something that goes wrong in another area that has nothing to do with science ends up making collaboration in science impossible. I do not think that is a sensible approach. I do not think it is necessarily realistic to argue that with the Commission, but it would be better for us in some respects if it was decoupled.

The Chair: That leaves us time for one last question. Baroness Donaghy.

Q15 **Baroness Donaghy:** Thank you, Lord Vaux, for standing in at very short notice for this session, as my internet connection was unreliable. I thank the witnesses very much indeed for the quality of their responses. It is a very good start to our short inquiry.

My question, although I think you have covered the ground, is: what key points or messages would you like us to leave with the Government in our report?

Professor Sir Richard Catlow: The message I would like to leave is that continued association with Horizon Europe and continuing involvement in European science programmes is absolutely vital for UK science. It is not just about money; it is about networks and collaboration. We will be a poorer nation scientifically and generally without it.

Catherine Guinard: Very similar to Richard, I would hammer home three main points. First, even with the best preparation, no deal would be very disruptive in the short and medium term and it absolutely needs to be avoided.

Secondly, significant value should be placed on the intangible benefits that we have spoken about today: the value of collaboration, the value of access and infrastructure that goes alongside just the money, which in itself is significant.

Thirdly, it is right that BEIS, with supporting arguments, is thinking about alternatives. I am really supportive of that work, but it is not even a second alternative but a third or fourth alternative to us associating with Horizon Europe. It is the world's most ambitious multilateral programme. We have always been part of these programmes. We got a lot out of them, we have been really active, and we know that our researchers care deeply about it. We should be seeking to associate on that basis.

Hillary Gyebi-Ababio: I would love to echo Richard and Catherine's points. They are very pertinent to this. Thinking about it from the student perspective specifically, continuing has to be the first option that we fight for in any of this. That is really important in ensuring that we lock in the futures of students who are coming in now at an undergraduate level, but also students that are going into research and want to be able to have the opportunities that collaboration continues to bring.

It is important that we recognise that Erasmus and Horizon have to go hand in hand with any of these continuations. If one of them goes, they both suffer. It is really important that we continue to look at the value of both in tandem and, as Catherine said, understand the intangible benefit and make it worth it to stay a part of both.

Finally, this Government have to be transparent and forthcoming with the support in any situation. It is really important for the stability of the sector and the security of students and researchers alike that there is transparency and hands-on support for any scenario. It is really important for that to come out of this. Thank you so much for having me here.

Vivienne Stern: I have four points. A funding commitment for a national alternative mechanism to the Erasmus programme, should we need one, is now urgent. We would like that to be made in advance of a one-year spending review outcome, because those decisions and arrangements are being made on campuses now. That is my first point.

Secondly, I want to echo something that Hillary said earlier: that we also need the visa regime to allow for student exchange. There is no completely clear mechanism for that yet.

Thirdly, the third-country participation guarantee—the issue that I raised in relation to the way we will distribute funding to support our participation in European projects if we are not associated—needs to be clarified. It needs to be made clear that there will no double jeopardy. If UK participants have to go through another layer of application or scrutiny in order to receive funding to be part of those projects, you will see UK participation plummet, to all our cost.

Fourthly, we should keep trying for association. If we get to the end of December and there is no negotiated outcome, we should try to get back to the table on research collaboration and student exchange as quickly as possible. It is a bridge that can be built; it does not have to be contentious. With compromise on both sides on the cost question, it is a deal that could be done fairly quickly.

The Chair: Thank you. That is a good note on which to bring this session to an end. Thank you to our witnesses for their time and very helpful evidence. It has been a very good start to our short inquiry.