



**OFFICIAL REPORT**  
AITHISG OIFIGEIL

# Environment, Climate Change and Land Reform Committee

**Tuesday 12 December 2017**

**Session 5**



The Scottish Parliament  
Pàrlamaid na h-Alba



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**ENVIRONMENT, CLIMATE CHANGE AND LAND REFORM COMMITTEE**  
**32<sup>nd</sup> Meeting 2017, Session 5**

**CONVENER**

\*Graeme Dey (Angus South) (SNP)

**DEPUTY CONVENER**

\*John Scott (Ayr) (Con)

**COMMITTEE MEMBERS**

Claudia Beamish (South Scotland) (Lab)

\*Donald Cameron (Highlands and Islands) (Con)

Finlay Carson (Galloway and West Dumfries) (Con)

\*Kate Forbes (Skye, Lochaber and Badenoch) (SNP)

\*Richard Lyle (Uddingston and Bellshill) (SNP)

\*Angus MacDonald (Falkirk East) (SNP)

\*Mark Ruskell (Mid Scotland and Fife) (Green)

\*Stewart Stevenson (Banffshire and Buchan Coast) (SNP)

\*David Stewart (Highlands and Islands) (Lab)

\*attended

**THE FOLLOWING ALSO PARTICIPATED:**

Terry A'Hearn (Scottish Environment Protection Agency)

Colin Campbell (James Hutton Institute)

Graeme Cook (Scottish Environment, Food and Agriculture Research Institutes Gateway)

Professor Julie Fitzpatrick (Moredun Research Institute)

Alan Hampson (Scottish Natural Heritage)

Ragne Low (ClimateXChange)

Dr Jacqui McElhiney (Food Standards Scotland)

Francesca Osowska (Scottish Natural Heritage)

**CLERK TO THE COMMITTEE**

Lynn Tullis

**LOCATION**

The Robert Burns Room (CR1)



# Scottish Parliament

## Environment, Climate Change and Land Reform Committee

*Tuesday 12 December 2017*

*[The Convener opened the meeting at 09:30]*

### Draft Budget Scrutiny 2018-19

**The Convener (Graeme Dey):** Good morning and welcome to the 32nd meeting in 2017 of the Environment, Climate Change and Land Reform Committee. We have received apologies from our colleagues Claudia Beamish and Finlay Carson. I remind everyone present to switch off mobile phones and other electronic devices, as they might affect the broadcasting system.

Under agenda item 1, we will hear evidence from two panels in relation to the committee's scrutiny of the Scottish Government's draft budget 2018-19. First, we will hear from: Colin Campbell, chief executive, James Hutton Institute; Graeme Cook, director, Scottish Environment, Food and Agriculture Research Institutes Gateway; Professor Julie Fitzpatrick, Moredun Research Institute; Ragne Low, programme manager, ClimateXChange; and Dr Jacqui McElhiney, head of food protection science and surveillance branch, Food Standards Scotland. Members have a series of questions for you.

**John Scott (Ayr) (Con):** Good morning everyone. Thank you for taking the time to come and help us with our budget scrutiny.

What have been the main impacts on your various institutes of declining research funding from the Scottish Government? What have you done to mitigate declining budgets?

**Colin Campbell (James Hutton Institute):** Good morning. Thank you for the opportunity to appear before the committee.

Declining budgets have meant that we have needed to take various measures. First, we must seek alternative funding through other means. For example, the James Hutton Institute has increasingly sought funding through, for example, the industrial strategy, from Europe and from other non-Scottish Government public sector sources. That has been quite successful. We have been very successful at winning money in Europe, for example; in fact, we are one of the most successful institutions in the agri-environment sector. Now, obviously, there is some uncertainty on Europe, although there has been some welcome news this week on horizon 2020.

We have also had to cut costs. That has meant reducing staff numbers, changing terms and conditions and taking a variety of other cost-reduction measures.

**Professor Julie Fitzpatrick (Moredun Research Institute):** We are in a similar situation. Trying to generate external research income is critical. Like the other main research providers, we have been very successful in gaining large European Union grants. We have also been able to generate some money from United Kingdom budgets because the Moredun Research Institute has been fortunate in being eligible to apply for some of the grants from Research Councils UK. For many years, we were unable to access those grants for a number of reasons but our income has been maintained by those activities. We have also tried to increase commercialisation of our research, taking that through to products that generate a small return in royalties.

The Moredun Research Institute is slightly different in that we are part of a group of companies and charities, so some of our commercial subsidiaries have helped to support our work—they are not-for-profit companies, so they give back some money to the institutes through gift aid and we can do more research with that money.

Like the James Hutton Institute, essentially we have managed by not replacing staff when they retire or leave the organisation.

**Graeme Cook (Scottish Environment, Food and Agriculture Research Institutes Gateway):** As I think the committee is aware, SEFARI consists of six research institutes, including the Moredun Research Institute and the James Hutton Institute. SEFARI Gateway—of which I am the director—is essentially the knowledge exchange and impact hub of SEFARI. Our budget is relatively small compared with the budget for the strategic research programme, but we have taken some action by developing joint funding mechanisms. For example, we are working with Food Standards Scotland and others on a fellowship programme. We are also using the SEFARI vehicle to strengthen our position in bidding for funds, for example in response to research council calls.

**Ragne Low (ClimateXChange):** As a centre of expertise, we are funded solely by the Scottish Government and provide a fast-responding policy-facing service to Scottish Government policy teams—we are perhaps more dependent on Scottish Government funding than other organisations represented around the table. We do not have a legal identity, so we are not able to raise funds—you could say that we are a consortium.

Having said that, we have used our access to other research networks across the UK very strategically. We have tried to leverage better insight into the Scottish Government and our own research community, for example the UK energy research centre, which is one of our major partners. We are being as canny as we can be with shrinking budgets

**John Scott:** Before I started my questioning, I should have declared an interest: I am an honorary fellow of the Moredun Research Institute.

Has the amount of research required reduced proportionately with budget reductions, or have you replaced the falling amounts of funding with funding that you have sought elsewhere?

**Colin Campbell:** Inevitably, the amount of research has declined. We cannot do as many things as we would like to do. That is a missed opportunity, as we have many ideas on ways in which we could increase productivity, make bigger economic impacts and make Scotland's economy more sustainable, but we cannot do all of those things when there is less money.

The money is for particular research deliverables within the research programme, for example, and that research has to go when our funding is cut back. Some lost funding can be replaced from other funding sources, but funding sources have slightly different agendas and priorities; there is not a like-for-like comparison. The strategic research programme is really important because it is concerned with long-term, mission-oriented research. It is the bedrock of lots of other ways of winning additional funding. Cuts will potentially reduce your options for getting alternative types of funding to build on that bedrock.

**Professor Fitzpatrick:** I support Colin Campbell in everything that he has said. Loss of funding has certainly reduced our capacity to work on a number of emerging key areas.

We are capable of, and are, working on antimicrobial resistance, for example, which has become incredibly topical, so large amounts of money are about to be released for it. However, it is difficult if our budgets make it harder to employ new and young scientists into new, topical areas, which would continue to generate income. There are huge opportunities for new science and technology at the moment and it is frustrating not to be able to do more.

**John Scott:** So the amount of work that there is to do has not declined but you are able to do less with your available budget.

**Professor Fitzpatrick:** Absolutely. In Scotland, the agri-tech sector is very important for food production and the protection of the environment.

There are huge opportunities in technology out there. Scotland is doing very well in that area, so it would be frustrating if our efforts and impact in that area were reduced.

**Colin Campbell:** There are huge opportunities for innovation and job and wealth creation in the agri-tech sector at the moment. More money will give us more economic return. The James Hutton Institute has a £12.75 return for every pound invested. That is also true for the other research institutes. In that respect, we are different from universities and other institutions because we have a translational pipeline—we do strategic through to applied and translational research and give great economic return. We are missing opportunities to help to create wealth and to address sustainability issues. More money would make an even bigger difference.

**Professor Fitzpatrick:** The Moredun Research Institute's gross value added is at a rate of about 10 to one and, in terms of jobs, is about 5.5 to one—for every job supported by Government, we support another 5.5 jobs in the Scottish economy, particularly in Midlothian, where we are based.

Over the years, we have worked on translation and tried to spread our knowledge to different communities to ensure that the technology is taken up and used. In our view, the institutes stand out, in particular, due to the translation of research all the way through to use in the field and in practice.

**Graeme Cook:** As a result of the construct of SEFARI and SEFARI Gateway, a bit of headspace has been created to build on the knowledge exchange activities that institutes were already carrying out. That work includes delivering the research that they produce to key audiences, including business, policy makers and society as a whole.

**The Convener:** Through your work with SEFARI, have you thus far identified any overlap with, or duplication of, research that was previously conducted?

**Graeme Cook:** Not in my experience—I have been in this role for just over a year—but I recognise that the research landscape is complex not only in relation to funding, but in configuration, with research institutes, centres of expertise and higher education institutes all having a role. We have been working hard with all of those organisations to understand where we can work collaboratively and add value. We come back to the question of who the audience is, ultimately—business, policy makers and society as a whole were identified as audiences for us in the tender that set up SEFARI Gateway. However, we also have an overarching remit to further internationalise the research that is carried out,

principally, by SEFARI. However, the longer that I have been in the role, the more I have seen that collaboration is crucial. Perhaps Julie Fitzpatrick, Colin Campbell and others will be able to tell you more about where that interaction takes place.

**The Convener:** We will come on to that in a minute because there are very obvious examples—for example, the Moredun Research Institute has been involved in that quite recently.

**Colin Campbell:** On the issue of duplication, research institutes have been working for a very long time on joint research programmes. The Scottish system is unique in having done that when other funders have not, and it has meant that there has been a natural alignment of our capabilities over 10, 12 or arguably even 15 years. We have naturally come to a situation where we mostly complement each other. That gives us great strength in delivering the joint research programme together. SEFARI gives us even more opportunity to do that in the future.

It is really important to realise that science has changed fundamentally over the past 10 to 15 years. The nature of science means that you need bigger and bigger collaborative teams. It is not just about collaborating in Scotland; it is about collaborating in Europe and globally. For example, there are 50 to 60 different authors to one single paper on work that we have done on the barley genome. The work involves a huge international consortium because it is big science. We have to collaborate; the nature of science is collaboration.

**John Scott:** How should the Scottish research programme evolve? You have perhaps already discussed that, but you may wish to go further.

**Colin Campbell:** There are a lot of pressing needs in Scotland on growing the economy and addressing climate change. We have very progressive policies in Scotland, with ambitious targets—for environmental policies, in particular—that help to stretch the science. More policies are coming in the future: a potential good food nation bill, for example, which could be equally progressive and innovative. There will be research needs for that policy.

We can address those immediate needs, but we need to keep an eye on long-term needs as well. We do not know what questions we will need to answer in 10 to 15 years' time. The strength of the strategic research project is that it is a long-term, mission-oriented research programme. In the 1980s, we conducted research on peatlands that is bearing fruit today, because we can estimate the amount of carbon that is locked up in our peatlands, although when we first conducted the research, we were interested in how much peat we would burn for power stations. The questions change, but the need for fundamental information

on Scotland's natural resources remains the same.

We need to take a very long-term view of what we need. For that reason, we need to ensure that the long-term, mission-oriented research in the strategic research programme is fully supported. It is a question of balance. We have centres that have been very good at relating the research to immediate short-term policy-oriented questions and we have the core research that we have to do in the strategic research programme. We have to get the balance right. We have good ideas in the centres but we now need to consolidate that core research and ensure that it is there for the future. That is the bedrock of what we do.

09:45

**Professor Fitzpatrick:** I agree; it is really important that we horizon scan. We do that regularly but it needs to be done with the Scottish Government's rural and environment science and analytical services division—RESAS—budgets. Clearly, multiple stakeholders are involved but we must try to look into the future and design collaborative projects that will deliver in the areas that we are particularly interested in. For us, that is infectious diseases of our livestock species, including diseases that pass to humans. We have now got really good technologies that allow us to produce new vaccines and better diagnostic tests for animal disease. That is going to be really important if we are to reduce the impact of reducing the use of antimicrobial drugs, for example.

That work is in the context of improving and supporting the environment, the Scottish economy and the lives of the people who live in many of our rural areas. Scotland's rural communities are particularly important for many of our scientific outputs.

A collaborative effort is needed and planning needs to be done across the whole piece, with all of our scientists—animal, plant, environmental and social scientists—working together and interacting.

**Graeme Cook:** It is important to recognise that the Scottish Government funds a lot of SEFARI research that would not ordinarily be funded. That is one point. Another point is that work that is done across the SEFARI institutes can deliver both for immediate policy needs and longer-term considerations.

For example, from time to time, Scottish Government transport ministers have to make judgments about what to do in relation to the stability of the slopes on the Rest and Be Thankful. One of my colleagues, a soil scientist who was assigned to one of the SEFARI Gateway teams, showed me a cross-section of a crop root.

Sometimes my job is, essentially to say, “So what?”, so when he explained that one bit gave it its bendiness and another bit gave it its strength, I said, “Well, so what?”, and he explained that, planted in the right place, it could stabilise a hillside. Again, my question was, “So what?”, but the next element of the conversation was about the fact that if we get the right people in the room and can get that right and get it planted in the right place, we can have a direct policy impact on issues that the Scottish Government and Transport Scotland have to deal with every year.

I have found myself using that example elsewhere—when speaking to the Forestry Commission Scotland and, last week, at the University of Northumbria, when I was at a Natural Environment Research Council event. The longer that I am in this role, the more I see the benefit of joining things up, for example in considering catchments and thinking about who is involved—for example, land managers. SEFARI and the research that it carries out offer a platform to think about things in a more holistic manner.

**Ragne Low:** Three centres of expertise have already been established under the strategic programme funding from RESAS. A fourth centre was mooted but it has not yet been funded. We need to continue building capacity in that translational role between the fundamental science and policy making, so that decisions are better informed. How many of those centres might be needed and how long they might need to last to do that job are open questions, but they are a fundamental element that needs to continue to be funded, because they generate real impacts on better decision making.

**The Convener:** I want to bring in Dr Jacqui McElhiney on the strategic research programme. In your written submission, you state that

“there is a need to properly align the work to strategic policy relating to food protection and public health”

and that

“the SRP should place greater focus on applied research which is able to demonstrate clear policy application and is sufficiently flexible to adapt to changing priorities.”

Will you expand on that? Other panel members can comment if they feel the need.

**Dr Jacqui McElhiney (Food Standards Scotland):** Those comments were really about the opportunities for aligning the expertise that is being developed in the strategic research programme with Food Standards Scotland’s policy priorities of dietary health, food standards and food safety. We have had some great examples over the years of collaboration with the SRP, and Food Standards Scotland has really welcomed the opportunity to steer the programme. In the past couple of years, there have been some great

developments, particularly with the advent of SEFARI, which has really opened up opportunities for collaboration.

As for the point that you just raised, our comments were about the Scottish Government’s recent obesity strategy, which fully aligns with Food Standards Scotland’s ambitions for improving the health of the Scottish population. What we have noted is that over the years the strategic research programme has perhaps focused more on innovation and mechanistic research into diet and health, and we would like more of a focus on applied research, which is more about the impact of interventions. The Scottish Government in its obesity strategy and Food Standards Scotland have recently articulated some quite ambitious goals in relation to changing the food landscape and possible regulatory interventions for improving dietary health, and there is real scope in that respect. The institutes have the expertise, and we would like that expertise to be better aligned and targeted more at the impact of interventions.

**The Convener:** Would that kind of targeting and alignment stifle innovation?

**Dr McElhiney:** That goes back to the points that were made earlier about getting the right balance between building longer-term research goals and expertise and addressing shorter-term policy needs. It is really important to strike that balance.

For us, the issue is all about engagement, and as the policy customer for the research that is being undertaken, we have really welcomed the opportunities for collaboration. Indeed, as we go forward, we would welcome more involvement in developing the strategic research programme and reviewing any progress.

**The Convener:** Forgive me if I am wrong, but as the customer do you not dictate what research should be undertaken?

**Dr McElhiney:** We would appreciate the opportunity to have more input into developing it; we do so at the moment, but there is scope to build on that.

**Colin Campbell:** There is always a bit of tension between immediate and long-term needs, but I think that having some push and pull is the best option. The scientists at the James Hutton Institute love the opportunity to try to solve today’s problems, but it is also our job to think about the problems that will arise in future.

For example, Scotland builds its brand on high-quality food, and we have the very ambitious 2030 programme to double the size of the sector. Because a lot of that will depend on small to medium-sized enterprises, and because a lot will be underpinned by the provenance, authentication



and safety of food, we have been thinking about ways of derisking that in future. Some of our long-term research has produced some of the world's best soil databases, and we think that, by exploiting our cutting-edge analytical techniques and reference soil databases, we could come up with a fabulous system for looking at the provenance and authentication of Scottish food that would put Scotland in an unrivalled position to protect its food and drink brand.

It is all about long-term thinking—thinking ahead—and enabling things to happen, and we have had some very conversations with Food Standards Scotland in that respect. That is the push from the scientists, but at the same time you need a bit of a pull from the sector.

**Professor Fitzpatrick:** It is possible to combine the shorter-term policy-driven work and the longer-term research. Of course, because all of these outputs are driven by staff, you need to be able to employ staff with the expertise to deliver them, but they are one and the same group of people. It is really important that the short-term outputs come from those who are incredibly well educated in their subject matter and are able to exploit a lot of the new technologies and opportunities. It is possible to combine the two things; they are two sides of the same coin.

**Angus MacDonald (Falkirk East) (SNP):** Good morning, panel. I turn to the issue of centres of expertise and funding. We have received a number of submissions that mention annual funding, which is clearly a significant issue. In particular, the written evidence from ClimateXChange highlights the fact that annual funding is creating “deep uncertainty for staff” in that organisation, particularly those who are funded 100 per cent by ClimateXChange. The submission goes into some detail, and gives an example involving redundancy notices being issued annually to the secretariat, which is clearly far from ideal.

Can you tell us about the funding model for ClimateXChange and the problems that it can cause? Do the other centres of expertise have the same issues?

**Ragne Low:** The answer to the question about whether the other centres of expertise have the same issues is largely yes, but I will come back to that.

In the first five-year phase or programme of ClimateXChange, we had a slightly better position, because we had a five-year budget. Although we received a grant letter annually from the Scottish Government, the size of that grant at each year point was already determined and agreed, so there was much greater certainty on the part of the

institutions that appoint and employ individuals working in ClimateXChange.

Since the 2015-16 financial year, we have still been working within a five-year envelope but with the expectation that at each year point we might suffer a cut, and indeed that has happened. That adds to the uncertainty and means that the institutions that employ individuals in ClimateXChange, particularly those in the secretariat but also the research fellows, who are employed in universities, do not have the same degree of certainty. In spite of the letters of comfort that might come, those institutions are unwilling to take any risks and are legally obliged to issue redundancy letters at six months and three months before the end of the grant period. That is obviously unsettling for people and it has meant that people inevitably might look for other employment.

The research fellows who are appointed at universities have in the past been on five-year programmatic contracts, but they now tend to be on two or three-year contracts. Again, the year-on-year uncertainty means that it is difficult to attract the right people in the first place, because research council funding tends to be much longer term and more stable. Obviously, a young researcher coming out of a PhD with options to work in ClimateXChange or do something else will think seriously about taking the ClimateXChange option.

Those are all problems and challenges. We might not be able to do anything about them, but we in the secretariat do our best to build relationships with the Scottish Government funders, who we understand are working within a number of constraints, and to work with our fellows to try to play up the positive sides of working in ClimateXChange such as the policy impact that it brings.

CREW, which is Scotland's centre of expertise for waters, has a slightly different model from ours and tends to rely a little more on the research institutes in its overall budget. EPIC, which is the Scottish Government's centre of expertise on animal disease outbreaks, has an issue very similar to ours with the one-year budgets. It raises that issue regularly, as we do.

**Colin Campbell:** Just on a point of information, annual awards affect all the research programmes and not just the centres. There are the same sort of planning constraints and retention and recruitment constraints on the institutes generally.

**Professor Fitzpatrick:** We are in the same position, but we do not issue redundancy notices because, if we did not receive our funding, we could use reserves to cover the redundancy period. Otherwise, it is a one-year contract.

**Angus MacDonald:** I have a follow-up question, although I probably know the answer to it already. What can be done to reduce the problem with the annual funding model?

**Ragne Low:** I am not sure that much can be done at the moment, given the way in which budgets are set at national level. Those of us who work in the secretariat at ClimateXChange, in reaching out to our fellows, do as much as we can to reassure them that the centre of expertise is incredibly successful, as we believe it is, and therefore is unlikely to be pulled away completely at the drop of a hat. Unfortunately, there is no cast-iron guarantee, but there is a huge amount of respect and support for the centre. We have to assume that that will be enough to keep people on board and prevent them from looking for other jobs.

10:00

**Colin Campbell:** In the past, we had a five-year rolling programme. That was hugely valuable, given that other types of funding are usually for one year or three years. Having a five-year programme allows institutes to be more ambitious about what they are going to do, but in any case, we need to get away from the model of funding for one year, three years or five years. Please do not fall off your seats when I say this, but if we had a 10-year funding cycle, we could be even more ambitious about what we were trying to achieve, plan with certainty and have more flexibility to be excellent and creative in what we were doing. It is not a one-size-fits-all thing, but we certainly need to get away from the one-year funding model, as it constrains how we think and plan ahead.

**The Convener:** Of course, Governments, too, learn what their budget is on an annual basis.

**Colin Campbell:** I appreciate that.

**Stewart Stevenson (Banffshire and Buchan Coast) (SNP):** I have a little question arising from what has been said. Are the longitudinal models that we rely on in certain areas at risk from short-term funding, or are we able to protect them, given that they are about the very long term?

**Colin Campbell:** That is what I mean when I talk about 10-year contracts. We do a lot of long-term environmental change network-type experiments in which we monitor the environment for decadal patterns, and we have long-term sampling campaigns that might give us a national data set about some natural resource in Scotland such as its soils. The operation of those things needs a much longer timeframe, and we could miss that if we did not have the ambition or the opportunity to carry out longer-term research.

What differentiates institutes from many research providers is that we carry out that kind of long-term research. That is why we have these national data sets that are of great value to us and these longitudinal data sets that allow us to make judgments and to put climate change into context. If we undermine that work through short-term funding, we will inevitably undermine our unique selling point.

**Angus MacDonald:** The submission from the Scottish Wildlife Trust suggested the need for a plant health centre of expertise. Are you content for additional centres of expertise to be established, given that the funding will come from existing budgets?

**Colin Campbell:** A plant health centre would be very welcome and, in fact, would be needed by stakeholders. Plant health covers both agricultural crops and trees; indeed, taken together, they form a bigger sector than the livestock sector, but I note that we have only a centre of expertise for livestock.

There is scope for more centres of expertise, but I do not think that we need a centre every time. We could embrace the principles behind and models for such centres in something smaller, or in something that was integrated with the research programme. There are a number of different ways of approaching the issue, but I want to recognise the lead that the Scottish Government has taken on this at a UK and European level and the fact that others are looking at the centres model. I think that the model is very useful, but we need to keep reviewing it and thinking of ways of fulfilling its principles without necessarily creating a big centre every time we feel the need.

**Professor Fitzpatrick:** Integrating the centres might be a way of having better integration and delivery across even wider areas of policy relevance.

**The Convener:** It strikes me that there is a lot of smart thinking in the sector about collaborative working, but have you seen anything elsewhere in the world that we could adapt and benefit from?

**Colin Campbell:** SEFARI was created partly as a result of looking at other international models of research institutes combining efforts to establish a common branding to allow them to compete internationally. That is an option for us now that we have SEFARI and can think in those ways.

As I have said, international science is all about collaboration and working together across borders. SEFARI gives us that option, and there are other examples along those lines that we can explore.

**Ragne Low:** Going back to the comment about integrating centres, I would point out that what we do is bespoke, and we work with a number of

policy teams in a way that is perhaps very different from how the other centres and SEFARI Gateway work. The other unique thing about centres—and each of them does it differently—is how they engage with higher education institutions such as universities, and that gives huge strength to the overall portfolio of research that is funded by RESAS.

**Graeme Cook:** Perhaps we need to turn this round and think about the research—what it is designed to do and so on—from the perspective of the end user. SEFARI Gateway and the centres of expertise have talked about that from early on. We have a shared understanding that the people who might ultimately use the research—whether they are policy people, businesspeople, farmers or individuals—are not particularly bothered about who is funding what or what constructs look like; they just need the information, research and expertise to be available to them.

SEFARI Gateway is developing a directory of the expertise across SEFARI—some of which links in and delivers some of the work from centres of expertise, too—to try to shine a light on that and lift the lid on where the research funding is going. Those mechanisms are designed to improve the flow of information, and we continue to work on that with the centres of expertise.

**Stewart Stevenson:** Are academic journals as important as they used to be for the dissemination of information, now that open journals have been introduced as well? Are we playing our part in that?

**Colin Campbell:** Very much so. We are trying to address the open access approach and to become open science institutions. There are a lot of new ideas about how we might do that. It is fundamentally important that we open up and engage with all stakeholders, and with the public, to increase understanding of what we are trying to do. Without their support, we are nothing, so we need to make sure that we have that support. Academic journals are still incredibly important in underpinning the excellence of the science and ensuring that it has been peer reviewed and is robust evidence.

**Professor Fitzpatrick:** I was going to make the same point. Everything that we do has to be based on scientific rigour and international recognition of our work; otherwise, its value is massively undermined. It is really important that we hit outputs that are relevant to multiple different audiences if we are to remain as relevant as we have been over the years.

Collaboration is really important, because there are now big consortia right across the world that are getting ready to work together to address some of the millennium and sustainable

development goals. The committee will know that the UK Government is moving a lot of money into something called the global challenges research fund, which takes UK science and makes sure that it is also impacting in poorer countries across the world. That fits very well with the Scottish Government's aims and objectives to take the science created in Scotland and make sure that it has impact across the different sectors that we can influence.

**Kate Forbes (Skye, Lochaber and Badenoch) (SNP):** The Moredun institute said in its written submission that

"One criticism ... has been the division of funding into a number of streams ... with insufficient thought and time as to how these might ... align with"

the main research provider's

"skills base or meet the needs of policy makers and others.

Do the other panel members agree? Also, can I ask everyone how they would better align funding streams?

**Colin Campbell:** We agree that there are competing demands for the research budget, for example from a wider range of stakeholders. That will not necessarily always align with the capability that we have. There is a tension, in the sense that we have lots of ideas on how to explore the areas that we are currently strong in and we have to recognise that there will be a diversity of demand from a wider range of stakeholders.

However, if we end up diluting the funding to the point that it is actually harming the core purposes behind what we are doing, there is a danger. We always need to be thinking about how to deliver to those diverse stakeholders and about their needs in the future, but the more that we slice the cake, the more we will damage the integrity of the research that we do. Again, it is about balance and the main focus of what we are trying to achieve.

**Graeme Cook:** That perhaps comes back to the point that was made earlier about overlap. The Moredun submission also mentions that its research is constructed in a way that is designed not to overlap with other pieces of work that are happening elsewhere in the UK. It is trying to help to fill in the patchwork of research that is required. That is perhaps worth mentioning.

**The Convener:** Mr Campbell, you have made a number of pertinent points. What mechanism exists for all of you to articulate such concerns to the Government?

**Colin Campbell:** We have a good working relationship with RESAS and talk to the people there regularly. The creation of SEFARI has also allowed a new forum for talking to them in a more co-ordinated fashion. We raise all the issues at bilateral meetings and meetings of the directors

executive committee, which is a function of the SEFARI collective.

We have opportunities to raise the issues but we supply research. The Scottish Government and RESAS are responding to the needs of our wide range of stakeholders. It comes back to what the research is for and what we are trying to achieve. For us, it has always been about Scotland's agriculture, environment and food. Those three things are fundamentally linked. As a sector, they are incredibly important in Scotland; they are probably more important in Scotland than in England and Wales, for example. The question is how much we want to dilute that to examine other things. I argue that we do not want to do that at the moment. There are too many opportunities and too many risks from, for example, Brexit and climate change to dilute that by spending money on things that are outside that original purpose.

**The Convener:** Julie Fitzpatrick wanted to respond to the original question.

**Professor Fitzpatrick:** We have to choose to be excellent in a specified number of areas, so it is important that our research programmes are co-constructed with stakeholders, Government and the scientists so that we make the best of all the expertise that we have. However, if we have reducing budgets, we must be able to change course, do less in some areas and, perhaps, focus on some new areas that are coming through. It is important that we have that flexibility to allow us to manage resources as best we can over the next few years, which will be particularly challenging, given the uncertainty about EU funding, although some more positive messages have come out recently.

**Graeme Cook:** I will give a quick example of how that might show itself. We have been working with Food Standards Scotland to try to develop a SEFARI fellowship to consider an issue that is front and centre now but which might not have been so prominent when the current strategic research programme was being developed: the resilience of the food supply—the food chain—in Scotland. There are practical and research issues that relate to that, but there are also political issues, which were not in place in relation to the UK leaving the European Union. We have collectively identified that area as one in which we can offer the SEFARI research as a platform to open up and examine the issue. We look to work with Food Standards Scotland on that over the next few months.

**Dr McElhiney:** Food Standards Scotland is perhaps slightly different from other policy customers in the Scottish Government, because it is a non-ministerial office. However, for us, the issue is an awareness of the expertise, of which there is a significant amount in the institutes. We

have a world-leading resource. We need to understand how that expertise can address some of our key policy questions.

The ambition 2030 strategy for food and drink is about growing the industry and innovation. However, it is also about supporting businesses—predominantly SMEs—that do not have a lot of technical expertise in their ability to meet the challenges of compliance, meet standards for trade arrangements and verify the authenticity of the food chain. Colin Campbell provided a good example of how we are trying to explore some of the expertise that has grown up over the years and how we can use it differently to support the food and drink industry in Scotland.

From our perspective, it is all about engagement and platforms for improving that engagement with the institutes. SEFARI is a great example of that. We have had some really good examples over the past couple of years. We have commissioned work with the Moredun institute through the contract research fund, which has been hugely successful for us in addressing a key food safety issue. There is also the work through the SEFARI fellowship that Graeme Cook just described. Those are all about collaboration and engagement with the policy customers for the research. That will be increasingly important.

**Kate Forbes:** I will take a slight sidestep on funding. There were a few comments in the written submissions about the funding balance between underpinning capacity to maintain long-term data sets, producing high-quality science, and responding rapidly to emerging societal challenges. Is that balance correct?

10:15

**Professor Fitzpatrick:** The balance varies for the different organisations, because we do different types of science. At the Moredun, a bigger proportion of our funding is for underpinning capacity. That does not focus only on the outputs; it also focuses on the employment and the activity of the people doing the work—handling pathogens in the laboratories, or working with animals, in our case. It is not just about the databases or the outputs of the contributions to the programme; it is also about the fact that Scotland has a number of capabilities, right across the SEFARI organisations, that are created by that underpinning of capacity. As the name suggests, the rest of the work is not possible without the support of the work that goes on daily to support all the research programmes and contributions to the centres of expertise.

**The Convener:** What does your recent tie-in—which looks interesting—with Scotland's Rural College bring to the table?

**Professor Fitzpatrick:** We are delighted about that. Our interactions with the SRUC go back many years, particularly in the area of surveillance. The SRUC is co-locating on the Moredun site, which means that the three providers of animal surveillance in Scotland—the third being the Animal and Plant Health Agency—will all be in the same building. It makes a lot of sense for us to co-locate, to share equipment and to have interaction among staff. Professor Powell, the chief executive officer of the SRUC, and I have discussed how we can bring our science closer together, in terms of research and development and knowledge exchange. However, that is not because there is overlap—the situation is the opposite, really.

**The Convener:** So, the organisations complement each other.

**Professor Fitzpatrick:** Yes: the SRUC tends to work on welfare and genetics and we at Moredun do a lot on animal disease. We see that as a multiple win for all the organisations.

**Colin Campbell:** To answer Kate Forbes's question, we should not cut back on underpinning capacity any more than we already have done. Fundamentally, that allows the flexibility in the creative area in which we can be innovative. "Innovation" is the word that is being used by everybody across Europe and the world—indeed, Europe has just created a new European Innovation Council. We need flexibility if we are to be innovative.

The money also funds national capability. The ability to analyse samples from across Scotland has been used in a number of events and emergencies. For example, the James Hutton Institute did all the hydrocarbon analysis work when the tanker MV Braer ran aground in Shetland. We were involved in dealing with Chernobyl and with the recent volcanic eruption that had the potential to pollute Scottish waters—although, thankfully, that did not come to anything. That national capability is needed to deal with events and disasters; it is part of Scotland's resilience in dealing with such things.

Our capability also allows us to support other industries. For example, many of the techniques that we use for chemical analysis support industries outwith the agriculture, environment and food sector. We are a fundamental part of Scotland's national capability.

**The Convener:** On that subject, Moredun has been critical of the reporting mechanism, which you say is "complex and time-consuming" and "cumbersome and resource consuming". Can you give us an example of that in practice?

**Professor Fitzpatrick:** There has been increased emphasis on reporting, especially in the

past 12 months and possibly over the past two years, for auditing purposes. Reporting is a time-consuming process. We have to set our objectives of research in different parts of the programme, which is fine—we would expect to do that for any research contractor—but the frequency of updating reporting is intense and takes a considerable amount of staff time. When resources are short, as they are at the moment, I would prefer a lighter touch. That is not because I do not approve of auditing; I just feel that it uses excessive staff time, which could be better employed in innovative research.

**The Convener:** Is that echoed by the rest of the panel?

**Colin Campbell:** We all recognise the greater need for accountability, especially with public money. We are talking about a significant amount of public money here, and we need to be accountable for it. We have been accountable in the past and have shown that we give very good value for money.

However, there are potentially thousands of research deliverables in our five-year framework that have to be accounted for, and that creates transaction costs. That can be seen in other funders. What is important about Scottish Government research funding is that it gives us flexibility and the ability to lever in money from other funders in the future. If everyone is auditing and accounting for such things in great detail, that stifles creativity. It also counts against excellence in science, because we then do not have as much time to be creative and excellent.

**The Convener:** In layman's terms, has the reporting requirement doubled, tripled or quadrupled?

**Professor Fitzpatrick:** The increase has been substantial. When we tried to measure reporting time as full-time staff equivalent time, it came out as about one and a half full-time senior members of staff. There is a significant contribution by our staff cohort to reporting.

**The Convener:** Is that one and a half full-time staff members the annual time that is dedicated to the process?

**Professor Fitzpatrick:** Yes.

**John Scott:** Is reporting done on a weekly or monthly basis?

**Professor Fitzpatrick:** We do a weekly update, and the information is transferred through a number of different systems to the final reporting. The system is quite complex, but it probably needs to be so extensive, given that there are many research deliverables and many different parts to the programme. The question is whether reporting

could be lessened slightly to release more time to do the work.

**Colin Campbell:** Some reporting and auditing approaches can result in better project management, which is good for everybody. RESAS is aware of some of these issues and is thinking more flexibly about not treating everything the same. Again, there are some areas where there could be a lighter touch and other areas where there is a pressing and urgent need for more accountability.

**The Convener:** So, the issue is being looked at.

**Colin Campbell:** Yes. We have started on the process, but there is no one-size-fits-all solution; we need a more flexible approach. Certainly, if we are to have excellent and creative science, we need less reporting.

**The Convener:** Thank you.

**Mark Ruskell (Mid Scotland and Fife) (Green):** On management of buildings and research facilities, the Royal Botanic Garden Edinburgh has identified in its submission a maintenance backlog of £15 million for its assets. What budget challenges do you face with regard to asset management?

**Colin Campbell:** The James Hutton Institute is facing quite a considerable challenge. We have previously benefited from capital investment from the Scottish Government. In 2011, for example, we received a £3 million grant. Last year, however, the grant declined to £100,000, which has created a significant challenge for us. We also have an ageing capital infrastructure, particularly at our Invergowrie site, where none of the nearly 40 buildings is modern. The last to be built was probably built in the 1990s.

The challenge is considerable. We at the James Hutton Institute recognise that it is our problem to solve, so we have come up with some progressive ideas for seeking alternative sources of capital investment. For example, we have submitted two significant proposals to the Tay cities deal partly to address those issues, but partly also to create new innovation centres that will increase revenue from alternative funding sources. Investment is a significant concern that affects the retention and recruitment of world-class scientists, who all want to work in the best facilities. If we do not pay attention to the issue, we will suffer.

**Professor Fitzpatrick:** The Moredun Research Institute has received no capital grants from the Scottish Government for many years now, but fortunately our land and buildings are owned by the Moredun Foundation. It is one of Scotland's largest charities, with 14,000 paying members, who every year pay a very small fee to be part of our foundation. They actually own the assets,

which are insured for about £25 million. The facility itself is on the Easter Bush estate just south of Edinburgh. Our position is different in that our model allows the facilities to be maintained outwith Scottish Government budgets.

**Mark Ruskell:** Is that sustainable in the long run?

**Professor Fitzpatrick:** I think that it is sustainable, because our foundation has created two major profit-making commercial subsidiaries that have no shareholders. Therefore, when the profits are generated, the money is gift-aided back to the foundation and back into the research institutes. The profit is, if you like, being recycled. The approach is sustainable as long as the commercial subsidiaries are sustainable; that is, of course, a different question. We are confident at the moment, but it is incredibly important that the facilities are maintained, especially, dare I say, the facilities that handle animal or human pathogens, because they have to be completely in line with all the legislative aspects of handling such organisms.

**Mark Ruskell:** Earlier, you mentioned co-location with the SRUC. Has that been a smooth process or are there issues with it? The SRUC obviously has a very different asset-management model from yours.

**Professor Fitzpatrick:** Co-location is going well. It is still under way and we are confident that it will go through. It shows that there are lots of different models that one can use. There are areas of science for which co-location is an ideal situation, while other types of science can be done remotely. We work with scientists right across the world, so we can certainly work using dispersed models, but co-location can be quite useful for specific facilities.

**Graeme Cook:** That shows clearly that the institutes that make up SEFARI are different in terms of their facilities and the assets that they hold. The challenges that they face are also different. We could write to the committee with a bit more detail on each of the institutes, setting out the position.

I will mention that SEFARI Gateway is also, as a route to improving information flow, considering developing an asset register, with a view to improving access to the facilities that exist across the SEFARI institutes so that they can be better and more appropriately utilised, including by other actors.

**Colin Campbell:** It is important to recognise that there has been quite substantial investment in the asset base in the Biotechnology and Biological Sciences Research Council institutes recently. Over the past five years, more than £380 million has been invested in them—some of them are in

Scotland, which is great. There is recognition that we need to develop that asset base if we are to remain world class and competitive. It is a real concern to me that we have not seen that level of capital investment in other parts of Scottish research, to maintain the infrastructure at world-class level.

**Mark Ruskell:** Just to be clear, are you talking about private sector investment? Has there been discussion with the Scottish Government about capital investment in your assets?

**Colin Campbell:** There are clearly constraints on capital investment from the public sector, but the BBSRC is a public sector organisation of the UK Government and it has invested in the research institutes. Most of them are in England and Wales, although there are some in Scotland. It is UK Government money that has been invested, and it represents recognition that we need to invest in that asset base. Some of the institutes are becoming more independent of the Government, but there is recognition that we need to let them go with a properly invested asset base.

**Mark Ruskell:** Has there been discussion with the Scottish Government about increasing funding?

**Colin Campbell:** Yes.

**Mark Ruskell:** You talked about £3 million dropping to £100,000. Is that figure fixed?

**Colin Campbell:** No. This year it has gone back up to £600,000. The Government owns the land at Invergowrie, for example, so it will always invest when there are issues of compliance—in health and safety, for example. That, however, is not the same as developing the asset base to provide the world-class infrastructure that we need for doing science. The Government is, indeed, the first investor in respect of the Tay cities deal: it has invested money to allow us to do the business case and the feasibility studies and we are very grateful for that. However, the level of investment that we need is very much larger than the capital fund that RESAS has, for example, and we have therefore had to seek alternative sources of funding. The Tay cities deal is a perfect opportunity for us to bring public and private partnerships together to try to get that investment.

**Donald Cameron (Highlands and Islands) (Con):** I thank the panel for coming today. I have a series of questions for SEFARI in particular. I think that you receive approximately £750,000 from the strategic research portfolio. Without asking you to sing for your supper too much, can you explain what you are doing now that was not happening before?

10:30

**Graeme Cook:** Certainly. I have talked a little about the directory of expertise, and that underpins a lot of the other work that we seek to deliver. Our staff base is drawn from expertise across the institutes, which is useful because it brings in different sectoral capabilities. The idea is that they know what is going on in their various areas across the research programme and can link that back to stakeholders. They understand that landscape, too.

The money funds the staff time of those individuals, as well as funding me and the core team of our secretariat. There are three main elements that we fund on a competitive basis. One is the SEFARI think tank, which is a mechanism that allows individuals across the research institutes to take a step back from their day-to-day work to think about national and global challenges. We have five programmes running under that, at the moment. One is a systematic review of sustainability assessments of cities from a food systems perspective. What does that mean? It means urban food—how we produce it, how we can do it better, how we can measure it and so on.

There is work being done on conserving genetic diversity, on the diversity of crops and on forestry and agricultural resources across Scotland to ensure that we have resilience and that Scotland hits its international targets on biodiversity, which are known as the Aichi biodiversity targets.

Work is also being done on decarbonising global agri-foods and on where carbon budgets have a role to play in the agri-foods network. A couple of projects are looking at alternative protein sources. Those concern crops that we have not used so much in Scotland; my colleagues may be able to talk more about the specifics. Those are the five programmes that are running under the think-tank mechanism.

We also have something called the responsive opportunity fund, on which I will go into less detail. It offers researchers across SEFARI a mechanism for carrying out knowledge exchange of their research, which they would not ordinarily or otherwise have the opportunity to do. We have 13 projects running under that. High-profile ones include the development of a cross-SEFARI film at the John Hope gateway at the Royal Botanic Garden Edinburgh, and workshops and farmer-to-farmer peer learning on mechanisms called precision agriculture, which is about vaccinating livestock in the right way and at the right time to ensure that systems are more efficient. We also have school soil posters and so on. A mix of things are being done under that fund.

The third main funded element is fellowships, of which we have run two so far. One was with

Scotland's Futures Forum, which members will know is wholly owned by the Scottish Parliament. We worked with the Futures Forum on looking at Scotland's culture and society to 2030, and the conversation that we had initially suggested that in order to have a well-functioning culture and society we need a well-functioning and resilient environment. The fellow was able to bring to bear the SEFARI research on that conversation.

The second fellowship was with the Cairngorms National Park Authority and looked at upland moorland management. It came out of a meeting between the Cairngorms National Park Authority and researchers who were working on issues in the Cairngorms or which could be relevant to the Cairngorms. That meeting was very interesting and saw an exchange of information and so on, but we recognised the potential to do more, so we funded a fellowship to explore how the distance between that research and the decision makers in the park could be shortened.

An individual from Moredun was able to go and talk to land managers, owners and practitioners in the upland moorland area about their issues. It was an iterative process and we found ourselves being a knowledge broker for people whose voices might not ordinarily be heard in such situations—I am talking about gamekeepers as land managers in their own right. We are developing that work based on what they told us about day-to-day issues that they have to deal with. It was a light-bulb moment, I suppose: we can talk about research in the abstract with organisations, but ultimately, for it to work properly, it has to get to the people who can use it in practical ways.

Those are the funded mechanisms.

**Donald Cameron:** Thank you for that comprehensive answer. Developing the point that you mentioned last, and referring back to your comment about the Rest and Be Thankful pass—which is dear to my heart, as I represent the Highlands and Islands—how do you take that kind of issue and affect policy thereafter? How do you plug into Transport Scotland or local authorities?

**Graeme Cook:** You have hit the nail on the head by saying that we can plug into conversations that are already happening. We are not looking to reinvent the wheel. We are trying to demonstrate where the SEFARI research is relevant to on-going topics. I have talked about Food Standards Scotland, for example, and we are also talking to Scottish Natural Heritage, Loch Lomond and the Trossachs National Park Authority and Scotland Food & Drink. Across the spectrum of things that are happening, we know that we have work to do, and it is an iterative process to identify where within Government the right policy leads and conversations have to take place and how we can help that. In my mind, the

catchment analogy is a useful way of thinking about it.

I am able to work in a Forestry Commission office for a day a week, and the conversations that the staff there have are about exactly the same challenges that we face. If you look at a hill, and there are lots of land managers involved on that hill, how do you design a construct and a conversation to bring them all together? The Rest and Be Thankful is one area where we might be able to do a mapping exercise to show who is involved. It is also an area where we have been looking to link up terrestrial research with what is going on in the marine environment. There is lots of publicly funded research going on there too, and interaction is important.

**Donald Cameron:** SEFARI is relatively new, and you represent or co-ordinate a number of well-known brands, such as the Moredun Research Institute and the James Hutton Institute. Are you clear about when SEFARI as a brand should be used and when those relatively long-standing names that we all know should be used instead? Where is the balance between SEFARI and the house of brands?

**Graeme Cook:** It has been an interesting exercise to get to the point where the SEFARI collective has been established. You are absolutely right to say that all those institutes have world-leading, well-renowned and long-standing reputations in their own right. Our view would be that there are horses for courses, and we have agreement at the level of the directors executive committee—on which Julie Fitzpatrick, Colin Campbell, the directors of the other institutes and I all sit—that the SEFARI brand can be used in relation to the strategic research programme and in relation to other Government funding. Other funding can also be levered in, and we recognise that Scottish Government funding for research is absolutely fundamental to this work. The point at which it stops probably relates to commercial activities that the individual institutes would carry out, but it is an iterative process for us and we have been working hard with the communications teams of all the institutes to try and build capacity and a shared understanding of when the SEFARI brand is appropriate and when individual institutes should look to their own reputations.

**Donald Cameron:** Could I widen that question to the representatives of the other institutes? Do you have any brief comments to make on your role as part of SEFARI?

**Professor Fitzpatrick:** I agree with Graeme Cook. With regard to the point that you made, I think that SEFARI is a good name, and we like what it stands for. It is a house of brands, and we have to use that name as and when it is appropriate to do so. When we are working with



our international collaborators who have known the name Moredun for many decades, we continue to use that name. However, we always refer back to SEFARI as our Scottish initiative, trying to bring everything together. It is all about interpretation, and it has been a useful addition to the way in which we describe our work.

**Colin Campbell:** I agree. We work at multiple levels—Scottish, European and global. The James Hutton Institute brand has been quickly established and has a great resonance with people already. However, SEFARI is also working incredibly well for us, particularly at a Scottish level.

**The Convener:** So it is not treading on your toes in any way.

**Colin Campbell:** No. It is actually very helpful. We have had a great response from stakeholders, who like it very much. They see a one-stop shop that is a great place to come.

**Richard Lyle (Uddingston and Bellshill) (SNP):** I want to ask about the national performance framework, which Mr Campbell touched on earlier. The Scottish Government website states:

“The Scottish Government is investing around £48m a year over 2016-2021 into a portfolio of Strategic Research to ensure that Scotland maintains its position at the very cutting edge of advances in agriculture, food and the environment.”

Do you agree that that money is being well spent?

**Colin Campbell:** Yes.

**Richard Lyle:** That is a short answer.

**Colin Campbell:** I can expand on that for you. There is tremendous evidence of the benefits. In terms of the economic strategy for Scotland, we are making a big contribution. Julie Fitzpatrick has talked about the multipliers for what we give back in return for investment—they go up to between £10 and £12.75 for every pound that is invested. That creates wealth and jobs—for every job at the James Hutton Institute there are another six jobs. We are fundamentally contributing to the economic strategy for Scotland.

Over and above that, we are also contributing to many policy areas in terms of climate change. Many of the progressive policies that we have in Scotland are based on the sound evidence that we have provided over decades. For example, the ability to calculate how much carbon is in the soil is possible only because we have mapped those soils across Scotland. We are making all kinds of contributions. We contributed to the national performance indicators, and Scotland is one of the first nations in the world to have a natural asset index, which allows us to follow what is happening in relation to our natural capital. Scotland has

developed world-leading policies because we have got the science and the research to draw on.

You will see in the evidence that we have submitted that we have made contributions in multiple areas: everything from water framework directives through to climate change. We have done a huge amount on peatland restoration and we even make a contribution to criminal justice through the development of world-leading soil forensic methodologies to help to solve crimes in Scotland. We cover a huge range of areas and I think that we deliver great value for money.

**Professor Fitzpatrick:** I agree. Scotland is internationally renowned for the work that has been done in this area of science in relation to food, agriculture, the environment and rural communities. As Colin Campbell said, we have had a huge impact. Over the years, work at Moredun has produced most of the vaccines that are used in livestock health across the world. Those vaccines are still selling many years after the work was conducted, and there is a similar story with regard to things such as the genetics of animals and fruit and vegetables in Scotland. We have massive international recognition for the work that we have done. That is part and parcel of the fact that the Scottish Government has supported us over a large number of years. That sort of Government support has perhaps not been in place in other parts of the world, so we have been able to build up some internationally competitive organisations. That has allowed us to create spin-out companies and to commercialise our work—again, we have many examples of that over the years.

**Mark Ruskell:** In what specific ways has your research informed policy choices in the draft climate plan? I am thinking in particular about soil testing, for example.

**Colin Campbell:** One of the issues about soil testing concerns the fact that we can probably manage our soil in a better way in order to increase the amount of carbon that we store in it. The soil's pH is one of the critical factors that we can potentially manage. We are doing research to ensure that that is possible. All the theory and scientific evidence to date suggest that it would be of great benefit, but we need to be absolutely sure that that is the case.

The current research programme has a number of field experiments aimed at proving that if we monitor and control the soil pH, we will get climate change benefit. It is about providing the evidence for the policies and about providing the logic and the thinking behind why we might undertake some of these specific actions, which would benefit climate change. That is true of peatland restoration as well, and all our groundwork on that.

10:45

**Professor Fitzpatrick:** The work that we do will also help to meet some of the climate change targets, particularly in agriculture. Some of the targets involve better efficiencies in primary agricultural production. From a livestock point of view, that means being better at breeding animals so that they are more efficient and have higher birth rates. By controlling some of our endemic or production diseases, we can improve the efficiency of production, which minimises input resources and maximises the outputs. We can now measure the impact of our control of those diseases in carbon units. The translation of that work will be very important as we address agricultural emissions.

**Ragne Low:** ClimateXChange, as the centre of expertise on climate change, has been heavily involved in working with Government on the draft climate change plan, the energy strategy, and many other things. Thinking in particular about the purview of this committee in relation to the environment, food and agriculture, the work that we have done has been on the actual realisable carbon abatement that can be achieved from different agricultural interventions—as opposed to what the technical potential might be—to help to inform the carbon envelopes around agriculture and get those as correct as possible.

We have also been working on forestry and looking at ways in which the land use models can be integrated with the TIMES model, which, as you know, the Scottish Government used to generate some of the insights in the climate change plan. We have been heavily involved with those things for a long time.

**Richard Lyle:** Lastly, is there any other piece of research in your field that would contribute to the delivery of national outcomes or the Scottish Government's purpose? A few months ago, I saw a piece on the concern about the loss of topsoil. Is there any other research that needs to be done?

**Colin Campbell:** There is quite a wide range of issues. Soil erosion, for example, is something that farmers are increasingly aware of. Intensive agricultural production sometimes does not favour the retention of soil after extreme events and rainfall events. We have seen some spectacular examples of that in the countryside. That is one particular issue that may need to be looked at.

There are probably other areas as well. In terms of policy-driven areas, there is the proposed good food nation bill, for example. The bill will be not just about food; it will be about climate change and societal cohesion and all sorts of other things. There is a lot of scope to do more research in that area as well.

**Professor Fitzpatrick:** Scotland Food & Drink's ambition 2030—to double the turnover of that sector by 2030—is a fantastic opportunity, but it will require primary agricultural production to match its aspirations. It is very important that SEFARI continues to work to deliver technologies that allow that to happen.

I will make particular mention of upland and hill regions—some of the remote and rural communities in Scotland. I believe that they will have to remain active in food production and in providing a number of public services in order to support the Scotland Food & Drink ambition and of course the new agricultural strategy, which will be created by the UK but which Scotland will have an opportunity to influence for our benefit.

**The Convener:** Can I pick up on that point? We have taken other evidence around the development of such a policy. There is possibly a disconnect between creating it and having it implemented. Are you conscious of that?

**Colin Campbell:** Not especially; we do not know what future questions and policies might be needed. A lot of the approach of the research institute is to take a long-term view and build up fundamental knowledge and understanding of how we manage and quantify our systems. That is a very useful basis for anything that we might do in the future.

**The Convener:** I guess that I am trying to get at whether the agricultural sector is hungry for that information and ready to implement it.

**Colin Campbell:** Absolutely. It is under a lot of pressure at the moment from all sorts of things, and there is a great need for information and knowledge.

There is also a great opportunity in what is now known as agri-tech. There are tremendous innovations. At the James Hutton Institute, one of the things that we are looking at is vertical indoor farming. That is about growing food crops inside vertical towers using a convergence of technologies, such as photonics, which are tuneable LED lights; robotics; artificial intelligence; and energy management systems. It is very aligned with Scotland, because the two things that it needs are renewable energy and abundant high-quality water.

Although that is potentially a disruptive technology, new industries could be born in that area in the next few years. Scotland needs to be aware of that, and of how it fits in with our existing agricultural, environmental and food ambitions.

**Professor Fitzpatrick:** It is important that the communities take the implementation of strategy seriously. There is good evidence from the NFU Scotland and Quality Meat Scotland in the areas

that we particularly impact that people are taking research outputs very seriously, adopting new technologies and getting ready for productive efficiency while also maintaining the environment through a number of strategies. There is evidence of that happening, but knowledge exchange mechanisms need to stay in place to ensure that implementation occurs. SEFARI takes those pipelines from research through to the end user very seriously indeed.

**John Scott:** We have heard queries about the ability to disseminate knowledge from our various research institutes. I know that Moredun already does that. Does Graeme Cook or Colin Campbell see opportunities for further developing that knowledge transfer model, perhaps via roadshows? How might that happen? There is undoubtedly a need for more knowledge to be disseminated.

**Graeme Cook:** That is very much the case. SEFARI Gateway is here to build on knowledge exchange mechanisms that already exist. The Moredun and the SRUC already do a lot of roadshows and that type of work with farmers on the ground. SEFARI can bring the strengths of the different institutes to bear on the wider collective. For example, the Royal Botanic Garden Edinburgh has a particular model of engagement with wider society. It is able to bring people into its gardens and sites, and it also takes its message out into the community in relation to gardening and that sort of thing.

There is a lot of work to do on that. When we start to design a matrix that looks at what is happening across the research programme and what the business, policy and society audiences look like, it quickly starts to get complicated. That is why it is important for SEFARI Gateway to prioritise some of the key issues that we know are drivers for Government and for individuals in connection with climate change and the idea of a good food nation. We also have to bear in mind that there are issues that transcend those, in relation to the EU questions and so on that we have talked about already. There are lots of mechanisms and I have described some of the ones that we are funding, which build on what is already happening.

**Colin Campbell:** The James Hutton Institute has done that for a long time. We have had many award-winning ideas about how to reach out to the general public and talk about science. Some of the research that we have done in education has been embedded in curriculum for excellence; there are exam questions and materials that are used for various subjects in schools. However, I think that we can do a lot more of that, and SEFARI represents an opportunity for us to join up and do it more efficiently, to share materials and ideas

and to reach out to people much more effectively than we have in the past.

**The Convener:** Your open days at Invergowrie are always very interesting.

**Colin Campbell:** Yes—they are good fun.

**The Convener:** Quite so.

**David Stewart (Highlands and Islands) (Lab):** What effect is Brexit having on your ability to attract and retain top-quality scientists?

**Colin Campbell:** There is a lot of concern about that. Something like 12 per cent of our staff are citizens of other European states. That may not sound like a huge number, but it has had a big impact on all of our scientists and staff, because there is concern about what will happen with Brexit. We have probably lost only two staff who have said that they are going back to Europe for that reason. I am very sorry that they have gone, as they were excellent scientists. We have not seen any massive turnover of staff yet. However, it is having a big emotional effect on them. They want to feel welcome. They have come to Scotland because we have a high-quality environment and world-class science. Anything that affects that will change things in the future, and we need to be very careful about that.

Brexit also has a potential impact on funding, although things are calming down a little bit on that, certainly up until 2020—and thank goodness, because it is an area in which we have been very successful and want to continue to be so. However, it is not just about the money; it is about the scientific co-operation. It is about having the opportunity to do a scientific experiment in Scotland and compare it against one in Spain or Germany. We learn a great deal more from that than we would if we were to do it on our own. It is very important that we keep that international co-operation going. In relation to advice, information and sharing of expertise, we also need to keep being involved in all the expert advisory groups, so that we are sharing international knowledge on key issues such as disease threat and climate change.

**Professor Fitzpatrick:** About 14 per cent of our staff are in the same category, so we have similar concerns. We have not lost any yet, but many of our PhD students are from EU countries and they are a very important resource for us for future succession planning and for building up our science knowledge.

At the moment, EU funds represent about a fifth of the Moredun Research Institute's income. That is because we have been very successful. We have held two €9 million grants over the past four or five years. One has finished and the other is halfway through, so we will be able to finish that

project as an EU co-ordinator. However, it is losing the opportunity to do that in the future that is significant. It is very important that we find other funds. We hope that they will come from the EU again if the UK comes to an arrangement whereby we can access them. If not, we need to continue to try to find alternative sources of external funding.

**The Convener:** Jacqui McElhiney, although yours is not a research institute, does it not have a substantial EU national presence?

**Dr McElhiney:** Yes. There are a number of implications of EU exit for protection of the food and drink industry in Scotland. We have discussed ambition 2030. Earlier, I pointed out that, while innovation is important, it is also important that we make sure that we do not forget the implications for protecting the safety and provenance of the Scottish food chain. All those things will only become more important in a post-EU exit landscape in which we will explore new trade deals. There might be new regulatory standards with which to comply or new methods that might have to be developed to demonstrate such standards. What we are talking about here is the value that is placed on the safety and provenance of the Scottish food and drink industry, and its worldwide reputation. In the institutes and in the programme, there is a huge opportunity to support such challenges as we move forward.

**The Convener:** And of course a large number of abattoir workers and vets are from other EU countries.

**Dr McElhiney:** Absolutely. That is another key consideration for Food Standards Scotland in relation to the delivery of official controls.

**David Stewart:** Is there a danger that, with uncertainty being a big factor, that could affect Scotland's great tradition of scientific expertise?

**Colin Campbell:** In theory, yes it could. The uncertainty has been slightly changed here by the horizon 2020 programme. The development of our next programme of research in Europe has already started and it is very important that we are involved in that in future, too. All the active work to develop the post-2020 research programme has started already, and we need to be part of that. We will continue that international co-operation. If we do not have access to such programmes, it will damage our ability to retain and recruit the best talent from around the world, as well as talent that is based in Scotland or the UK. Those people also want to work in the best place in the world—and many of them do, in the United States of America or Australia. Therefore we are competing for our own home-based talent as well as that of other EU citizens.

**David Stewart:** Mr Campbell, you talked about the importance of having longer-term funding

streams, such as 10-year funding. It may be the case that, after 2020, the structural funds are taken home, both by the Scottish Government and by the UK Government, but there is no certainty about that. You have talked about your current level of European funding—Julie Fitzpatrick mentioned that it is 20 per cent of Moredun's income, for example. Losing that finance will leave a big gap.

**Colin Campbell:** There is uncertainty, but there is potentially replacement funding through the industrial strategy, which is geared towards the innovation agenda, although that does not cover all research topics. However, we do not know how that funding will pan out, what areas it will be spent on and how it might come to Scotland. Although there are positive moves to increase investment in research and development, there is still uncertainty about what is happening, even at a UK level.

11:00

**John Scott:** I declare an interest in that I am an honorary member of the British Veterinary Association.

Anecdotal evidence suggests that up to 95 per cent of the vets in our abattoirs are from the European Union and that many of them will no longer be available. Can you confirm that figure?

**Dr McElhiney:** I cannot confirm the exact number, but I can provide the committee with the figure after the meeting. A significant proportion of our veterinary staff in abattoirs come from other EU countries. That is a big concern for us in the context of the retention of that workforce. It is a specialised role in a difficult working environment and it is difficult to access that expertise from within the UK. That is a concern for the future.

**The Convener:** A proportion of your inspectors are also EU nationals, are they not?

**Dr McElhiney:** Yes, the veterinary inspectors in abattoirs.

**The Convener:** Are they directly employed by FSS?

**Dr McElhiney:** Yes.

**Professor Fitzpatrick:** I support Jacqui McElhiney's comment; I understand that a very high proportion of abattoir veterinary inspection is undertaken by qualified people who come from other EU countries.

On collaboration, it is incredibly important that we plan and try to keep engaged with the EU as much as possible. Although we are a small country, if we map our international linkages, there are huge numbers of interactions at all levels with all continents. As we mentioned before, the big

science that we are challenged with—the grand global challenges—all require collaboration. Anything that reduces collaboration is something that needs to be addressed.

**David Stewart:** Finally, do you have a risk register that formally considers the future employment of EU nationals or potential loss of EU funding as a threat to your organisation in the context your overall strategy?

**Colin Campbell:** Yes, we do. That is in our risk register. We also look at ways to mitigate that risk. We have been investing in giving advice and help to our EU staff and we have put in place support mechanisms, such as advice on how to apply for visas and legal help at a discount through our solicitors, to try to ensure that we can keep them on.

**Professor Fitzpatrick:** We are exactly the same: the staff issue and the funding issue are both in our risk register.

**Mark Ruskell:** To what extent do international treaties and obligations drive that collaborative research? Is there potential from trade deals and co-operation agreements, whether those be bilateral or multilateral, to drive the research agenda, or is it all wrapped up in Europe at the moment?

**Colin Campbell:** It goes beyond Europe—there is a lot of disruption around global trade. That could raise all sorts of research questions, particularly around primary production of food and where it is grown in the world. If that is coupled with climate change, we could be looking at a very different scenario in relation to the type of food product that we have to produce in the future.

There are some uncertainties there, but there are also opportunities to do more research, for example on novel crops. We have started to do that. That is partly to meet the localism agenda as well as to address globalisation issues. This year, for example, we grew soya beans in Scotland for the first time, and in the past two years we have grown the first crop of hops for the craft brewing industry. There are lots of opportunities to consider what alternative products we can produce in Scotland. That will depend on how the macroeconomics, which are currently somewhat disrupted, pan out.

**Donald Cameron:** Last Friday, it was agreed that European Union citizens in the UK can continue to live, work and study under the same conditions—in other words, under EU law. Will you be updating your risk registers to take that into account?

**Colin Campbell:** Yes, to a degree. However, this is also about opportunities to do world-class science; staff retention and recruitment are always

on our risk register, because there are always pressures on them. For example, they are affected by the levels of investment and funding in our science, having the infrastructure and world-class facilities and so on. The European risk has perhaps been reduced slightly, but we would still consider the bigger picture in looking at overall funding uncertainties.

**Graeme Cook:** There have been international collaborations involving SEFARI institutes for a very long time now, and there are tens of countries with which there has already been collaboration. That is a platform to build on, and we in SEFARI Gateway are looking to have conversations and dialogue with organisations such as Scottish Enterprise and Scotland Europa in order to demonstrate the relevance of SEFARI research.

**Professor Fitzpatrick:** I want to point out in response to Mr Ruskell's question that, on the livestock side of things, the EU situation is very complex. Not only are there issues of export tariffs and trade to deal with but much of our legislation on animal disease control, for example, comes from the EU. Again, changes will have to be made, but it is not clear what will happen and that means that biosecurity and the prevention of disease in the UK will be critical. Obviously, Scotland has an important role to play in that respect, because we are combined with other Administrations. Finally, I would also highlight the issue of the future development and registration of veterinary products. As I have said, the EU issue is quite complex and important for the animal sector.

**The Convener:** Thank you very much for the informative evidence that you have given this morning. If, after you leave the building, any other points jump out at you, please feel free to write to us. As I have said, we very much appreciate your contributions.

I suspend the meeting for five minutes for a changeover of witnesses.

11:07

*Meeting suspended.*

11:12

*On resuming—*

**The Convener:** Welcome back to the committee's scrutiny of the Scottish Government's draft budget for 2018-19. We will now take evidence from Terry A'Hearn, the chief executive of the Scottish Environment Protection Agency, and Mark McLaughlin, also from SEPA; and from Francesca Osowska, the chief executive of Scottish Natural Heritage, and Alan Hampson, the acting head of corporate services at SNH. As we did with the first panel, we will ask you a series of

questions. Our first questions will be directed particularly at SNH. Before we begin, I welcome Ms Osowska to her new role.

I understand that SNH's new corporate plan will emphasise

"connecting people with nature through leadership, influence and partnership ... particularly in ... towns and cities."

Given that you cannot spend the same pound twice, what will be the potential impact of this apparent change in emphasis on the rural environment and communities?

**Francesca Osowska (Scottish Natural Heritage):** Thank you for the question—and thank you for the invitation to appear here today.

With regard to our overall spend, you will have seen from our annual report last year that our total grant in aid is £47 million and that we lever in funds from a range of other sources. Much of that money is spent in rural areas—for example, on maintaining our various sites, national nature reserves and marine protected areas and on a lot of the work that we carry out through the Scotland rural development programme.

However, as you have identified, we are a national organisation and we want everyone in Scotland to have the opportunity to enjoy nature. In the past, we have recognised that individuals living in urban environments or deprived areas do not have the same access as others to nature. Therefore, if the Scottish Government approves the corporate plan in its current form—I should point out that we still need to go through that process—we will look to emphasise some of the place-making work in which we are involved through, for example, the green infrastructure fund to ensure that those who live in urban areas or deprived communities have the access to nature that we feel everyone in Scotland should enjoy.

11:15

**The Convener:** You have mentioned having access to nature, which is all well and good, but surely the priority must be that we have that nature to enjoy in years to come. Should your primary focus not be on, for example, protecting endangered species?

**Francesca Osowska:** We will do that, too. As I have said, we allocate a lot of our overall budget to maintaining our protected areas, and we also allocate significant funds to ensuring that protected species continue to be protected so that, as you say, generations to come can enjoy nature. However, we want those in our more urban environments, who perhaps do not have the same opportunities, to be able to enjoy nature, too.

As for the priorities in years to come, I have said that we are still going through a process with the corporate plan. That will be followed by a more detailed discussion of the business plan for 2018-19, through the senior leadership team and the board at SNH and then with the Scottish Government, to align our priorities with the Government's priorities.

**The Convener:** To what extent is the change in emphasis being driven by budgetary considerations, and to what extent is it being driven simply by a view in SNH that that is the way to go?

**Francesca Osowska:** It is being driven not by budgetary considerations but by a number of factors that I would trace back to certain areas that the Scottish Government has highlighted in the past. I mentioned place making, and we see ourselves playing a strong role in that. Moreover, we want to combat inequalities across the piece, and one could view access to nature as being unequal at the moment. This is all about trying to equalise opportunities for Scotland's citizens.

**The Convener:** To what extent are you planning—or, indeed, can you plan—for any additional workstreams that might come your way? Work that is being carried out on, say, methods of tackling wildlife crime in the future or on deer management could lead to an increased workload for SNH. How aware are you of that, and to what extent can you anticipate or plan for it?

**Francesca Osowska:** I can give an example from this year. Our budget for peatland increased significantly thanks to additional Scottish Government funding. We were prepared for that, because we had a pipeline of projects from previous years that allowed us to take forward the peatland action restoration programme this year. As we do not know our budget at the moment, I am slightly wary of speculating, but we feel confident that we will be able to address any new priorities that emerge from the discussions that we will have with the Scottish Government on that matter. We will have that discussion with the Scottish Government once the budget is clear.

**The Convener:** I want to focus on the peatland action programme, which is excellent. Given the take-up of funding that you have had this financial year, do you believe that the demand and take-up will be the same in the coming year?

**Francesca Osowska:** The pipeline of projects is very strong. This is a bit hypothetical but, if funding were to be allocated to peatland action in future years, we would be confident of being able to satisfy that funding stream.

**The Convener:** Thank you.

**Mark Ruskell:** There has been a decline in the quality of urban green space, partly because of councils reducing investment in such areas. Is there a danger that you will just come in and backfill what councils have already cut?

**Francesca Osowska:** Our approach in many areas, including through the green infrastructure fund, is to work in partnership, which we do with a range of councils and other bodies that are active in that area. I do not believe that we are replacing council funding; through our expertise, we are enhancing what local authorities are already doing.

**Alan Hampson (Scottish Natural Heritage):** Another part of the equation is making sure that councils understand the benefit that is associated with green space. We have been working with four councils to develop green health partnerships, which, in essence, promote the benefits to people of outdoor recreation and activity, thereby reinforcing the importance of maintaining good access to green space.

**The Convener:** We will move on to look at the work of SEPA.

**Kate Forbes:** As the convener says, I will focus my questions on SEPA, its budgets and its services. In terms of your core services of regulation and flood risk management, have you analysed the resource implications of developing sustainable growth agreements or reforming the permissioning system? If so, what would those implications be?

**Terry A'Hearn (Scottish Environment Protection Agency):** We do not have detailed figures and breakdowns for those two areas, but the work that we have done indicates that what we will do in those areas—for example, in the permissioning reform—is follow better regulation principles. That is often misunderstood and badged as being either pro-regulation or anti-regulation. However, if permits are clearer and simpler from reforming a permitting system, which is what we are doing, it is easier for a business to know what the law is and what its obligations are. It is also easier for us to know whether businesses are meeting their obligations and to take enforcement action that will work in a court, and it is easier for the public and others, such as parliamentarians, to hold us and the industry to account for our performance.

Over time, that permitting reform will lead to much more effective and efficient work. We do not have figures for how much more efficient it will be, but we expect, for example, that the number of people writing permits will go down. There will be a period over the next couple of years, as we reform the entire permitting system, in which resources are devoted to that simplification but,

once we have completed that, it should just roll out and we will have fewer people doing it. Those resources can then be diverted to working with business on enforcement, compliance and so on.

The sustainable growth agreement is an innovation that contributes to getting people to, and going beyond, compliance. A practical example of that is Superglass, which is an insulation manufacturer in Stirling that, before I joined SEPA a couple of years ago, was one of our poor-performing businesses. New management came in and the Health and Safety Executive and SEPA told them that the compliance record was very bad. The new management asked for a list of what they needed to improve and, over time, the business has progressively reached full compliance.

Signing the sustainable growth agreement takes the company further, so that it will go beyond the standards for environmental performance. One of the highlights in the agreement is that the company works with the local community. At the launch of the sustainable growth agreement, a community member said to me, “I have to clean my own car now, and that’s your fault.” I said that, as a regulator around the world, I had been accused of lots of things but I did not understand that. He explained that, as the air pollution was so bad several years ago, Superglass paid for people in the local area to have their cars washed but that the level of air pollution had come right down because of the standards.

In the sustainable growth agreement, Superglass is looking at how it can work in partnership with the local community to improve environmental performance. The agreement will entrench the company’s compliance performance, and we would hope to spend less time with it. It has signed up at CEO level—a business does not get a sustainable growth agreement unless the CEO signs, so I and Superglass’s CEO signed—to say that it will maintain its compliance performance and will do better. Superglass has an additional incentive on top of SEPA’s potential enforcement measures in that it has gone out to the world and said, “We have signed this agreement—we will comply and we will go further.”

We think that the sustainable growth agreements will contribute to beyond-compliance performance and entrench compliance certainty for the community.

**Kate Forbes:** That might well answer my next question, which was going to be on your action to investigate new approaches to enforcement to tackle non-compliance at an earlier stage. I presume that what you have said answers that point, too—or are there alternative ways?

**Terry A'Hearn:** There are alternative ways. In "One Planet Prosperity—Our Regulatory Strategy", we make a clear statement that compliance is non-negotiable. I do not know any regulator in the world that achieves 100 per cent compliance, but that is what we are aiming for, and I do not see why the people of Scotland should get anything less than 100 per cent. We may never quite get there, but that is what we are aiming for.

That will involve the sustainable growth agreement, which entrenches compliance because it leads to executive and board-level commitment from our regulated businesses. In addition, we will use the full range of measures. We have a new set of enforcement powers that the Parliament gave us two or three years ago—which include fixed monetary penalties, variable monetary penalties and enforcement undertakings—and we are starting to roll those out. We will use that broader set of enforcement tools in addition to the new and broader set of encouragement tools. I guess that they are all forms of encouragement. Some involve encouragement through a penalty and some are encouragement through businesses signing up to say that they will be exceptional corporate citizens.

**Kate Forbes:** I presume that you think that all of that will lead to savings.

**Terry A'Hearn:** Yes. Over time, it should mean that we get compliance more effectively and powerfully. If we lower our costs, the savings can then either be passed back to the people who pay charges or be diverted into other public uses, either in our budget or in someone else's—I do not back away from that.

**Kate Forbes:** How do you set your charges and costs? Has income from the charges scheme remained static over the past few years?

**Terry A'Hearn:** There are two parts to the process of setting the charges. One involves considering the costs of our direct regulation work, which means things such as writing permits and doing inspections. There is also indirect work that supports that, such as monitoring work. For example, where we regulate businesses that affect a loch, we will monitor the loch and recover part of the cost of that. We had a major reform of the process a couple of years ago. We cost the direct regulation work that we do and then assess that against the level of effort that we need to put into each business, so that the charge is proportionate to our costs. For example, Scottish Water pays a lot more than a small operator.

On the other part of the question, the idea is that the process will be revenue neutral. The figure goes up and down a bit, largely depending on

economic activity, but it has remained relatively static over the past few years.

**The Convener:** I want to pick up on that issue of proportionality. You are doing a piece of work on charging to take to the Government, and I understand that, in agriculture, there has been a suggestion about substantial increases in costs relating to abstraction. How do you take account of whether a sector such as agriculture can bear substantial increases in costs?

**Terry A'Hearn:** The principles that underlie the charging scheme are about cost recovery. The core principle is that, if someone uses the environment to run their business and generate income, they should pay a cost that is proportionate to what society spends through us on regulation. That principle has been adhered to. In consultation with the Government, we will look at whether there is a need to make progressive changes or to allow for that ability to pay. However, we try to stick very much to the core principle. Over the past few years, we have put a lot of work into trying to get the system to be more accurate and fair for everyone. The more we start breaking from that, the harder it is to maintain the fairness and equity in the system.

**The Convener:** I get that. However, right now, the agriculture sector is under a great deal of pressure; surely, that factor needs to be taken into account. Alternatively, is it for the Government to take account of that when it decides whether to agree to your proposals?

**Terry A'Hearn:** We have a good consultation with NFU Scotland and other organisations, as well as with individuals who make representations. We take their views into account and then put positions to the Government. Ultimately, it is a policy decision for the Government to make.

**Kate Forbes:** Moving on, can you provide any examples of where budget allocations have impacted, positively or negatively, on relative indicators in the national performance framework? I presume that the NPF guides those allocations.

**Terry A'Hearn:** I will give a very general but clear answer to that question. I have moved around the world, and everywhere I go there are budget cuts—it is part of life. Like any administrator, I would like more money or at least to maintain my budget, but my approach is to work with colleagues and say that, whatever money we get, we will seek to have the maximum effect with it.

We can think about the messages that the Government sends and that an organisation such as SEPA, under Government policy, sends out about abstract concepts such as the circular economy or resource efficiency. For example, SEPA says that, if everyone in the world lived like



the Scots, we would need three planets, but there is only one. As a society, we need to become much smarter and cleverer in using natural resources, and I take the same approach with our financial resources in working with my colleagues.

Compared to some other jurisdictions that I have been in, we have not had huge budget cuts in my time at SEPA. We have had difficult cuts, but our focus is on how we use our money much more effectively to deliver against the national performance indicators. Therefore, I could not say that budget allocations have had any negative impact on our ability to contribute. That might change in the future, if the cuts keep coming, but our focus will be on how we can be more innovative in delivering against the indicators.

11:30

**Kate Forbes:** Thank you. I have a final question that is quite cheeky. Can you identify any particular spending priorities in other portfolios that will exacerbate the environmental challenges in Scotland?

**Terry A'Hearn:** As we see it, every human activity impacts on the environment. Our approach is that, if Scotland is to be prosperous like any other nation, things will happen, whether in transport development, education or whatever. The question is how we can work with those portfolios to minimise the environmental impact of achieving the mobility aims that the transfer portfolio will have or the education aims that the education portfolio will have.

In areas such as transport, Scotland's carbon footprint is obviously significant. However, we would say that everything needs innovation and it is about how we can support people to be innovative. We would make it clear that there are legal standards that such a regulated sector has to comply with and that, if people can do that through innovation and that saves them money, that is great and we will help them with it; alternatively, if it is going to cost them money, the only way for them to meet the standards is to accept the cost and we will get them there by that means. That is the case whether it is the transport sector or anything else.

Beyond that, we are looking for the win-win situation because, beyond the legal standards, there is no reason for anyone to do anything unless it improves transport outcomes, education outcomes or commercial outcomes.

**The Convener:** Let us move the discussion on.

**Richard Lyle:** My questions are on staffing and gender balance, so please bear with me. I will start with SNH. You said in your submission that you have made a 25 per cent reduction in staffing over

the past six years. How many staff did you have six years ago and how many do you have now?

**Francesca Osowska:** Our headcount for 2010-11, which is the baseline that we usually use, given the significant organisation change at that point, was 907 and the FTE in that year was 770. The latest headcount, as of 1 April 2017, was 711, with an FTE of 603.

**Richard Lyle:** My next question is for both SEPA and SNH. What percentage of your budget relates to staffing? Are staffing levels stable or will further cuts have to be made?

**Francesca Osowska:** Staff costs take up 49 per cent of our budget. As I said earlier, we will look at the potential of any reduction or—who knows—increase in staffing levels once we know what the Scottish budget allocation will be for 2018-19.

**The Convener:** There has been a clear drop in the number of your staff, but you have people such as volunteer wardens and raptor study groups assisting you in your work. Are they filling that staffing gap in any way?

**Francesca Osowska:** You mentioned some of our volunteer workers, but we also have a range of volunteers through the national nature reserves who support us. It would be quite difficult to say that they are filling a gap in terms of our paid staff. We have looked to make efficiencies in our pay bill around, for example, some of our corporate work, planning work and casework. In planning, for example, we are doing a lot more upstream work with developers, which can release staff.

**The Convener:** I made the point simply because you talked earlier about access to nature. Volunteer wardens, for example, do a lot of work to enable that access to happen and the work of the raptor study groups is, by and large, quite important in tackling wildlife crime. I am trying to get a feel for the extent to which, in addition to the workforce whom you employ, you have considerably more people assisting SNH in its work.

**Francesca Osowska:** That is absolutely true. I do not have a precise figure for the number of volunteers involved in SNH, but I could come back to you with that.

**The Convener:** That is fine. I just wanted to get that on the record.

**Richard Lyle:** How many staff does SEPA have?

**Terry A'Hearn:** We have just under 1,200 full-time equivalents, which accounts for about 67 per cent of our total budget.

**Richard Lyle:** How is SEPA simplifying permitted processes and improving enforcement,

and what does that mean for your operational and staff costs? Can I be cheeky and ask how many staff you have in your headquarters—I should perhaps declare that it is in my constituency of Uddingston and Bellshill—and how many staff you have in the field?

**Terry A'Hearn:** Our HQ is the Stirling office, where we have about 200 staff, but some of those are field staff.

**Richard Lyle:** I am sorry—I meant your office in Maxim Office Park.

**Terry A'Hearn:** There are about 400 there, some of whom are field staff. We have the labs at Eurocentral, but there are also a lot of the people who do the regulatory work out in the west. The number of staff in the field is around 500 to 600.

**The Convener:** Can we be clear on that point, Mr A'Hearn? You and I have discussed this in previous sessions, when we have said that the strength of SEPA is its local footprint, and you have given undertakings to protect that as much as you can. Have you managed to do that?

**Terry A'Hearn:** We are at 26 different offices around Scotland, a lot of which are shared, and we are committed, as far as we can be, to keeping those offices and that local presence. We have strengthened our presence in various ways. We are introducing a system in which we will formalise the fact that the local offices are in charge of local relationships. For example, we have never had people responsible for the management of a company relationship. With an aquaculture company, such as Marine Harvest Scotland or Scottish Sea Farms, we have had someone from a local office in Thurso looking after four fish site licences, but we have not had anyone looking after Marine Harvest itself. All those people will be from the local offices, so we are maintaining the offices and giving them strengthened responsibilities, because they are the front line of what we do.

**The Convener:** Do you then collate the information that they gather? If, for example, there was a major company—in any sector—that was not discharging its responsibilities quite as it ought to, would you collate national information to get that picture, so that you could take a more strategic view of its activities?

**Terry A'Hearn:** For a number of years we have produced an annual compliance assessment scheme report, so that sort of information is available there. The permitting reforms, the client management reforms and the sector plan approach that we are taking will enable us to do that in a stronger way. We will be able to take the information that we have and tell companies much more clearly that they have, say, 40 sites that are compliant and six that are not, according to certain

parameters, and then we can agree an approach to get that company into compliance.

**The Convener:** That is good to hear.

**Mark Ruskell:** Is SEPA able to focus its resources on particular areas? On Friday, I met people from communities around Mossmorran, who were concerned that their demands for detailed residential noise monitoring had been turned down by SEPA because the staff were simply not available. That is an anecdotal case, but it points to a concern that, where there is a particular set of problems that SEPA needs to address, communities often find that the resources—the boots on the ground—are not there to carry out the more enhanced form of regulation that your stakeholders at community level would demand.

**Terry A'Hearn:** The sectoral approach that we are taking, in which we will have a sector plan for each sector that we regulate, such as aquaculture, whisky and landfill, will have a clear and public explanation of how many sites there are in that sector, which ones are non-compliant and what the beyond-compliance opportunities are. That will enable us to target our resources more effectively, so that if we have 10 non-compliant sites we can get them all up to compliance. I hope that, in the example that you cited, we would be able to take a more focused approach to solving problems by working with communities on what they see as the impacts, so that we can knock things off more quickly and powerfully.

**The Convener:** Do you want to finish up on the gender issue, Mr Lyle?

**Richard Lyle:** I will tie together my last two questions, which are about the overall gender balance of staff in SEPA and SNH. Is there any difference in that respect between full-time and part-time workers? What is the gender balance among senior management and on boards? Finally, what work is being done to address gender imbalance in your organisations?

**Francesca Osowska:** I will go first, given that Mr A'Hearn has already talked a bit about this.

In SNH, the overall male-to-female balance of staff is 40 per cent male and 60 per cent female; the percentages are the same at board level, so we actually have more female than male board members. As for our senior leadership team, which comprises me, three directors and three heads of service, the balance is 50:50.

On the work that we are doing to ensure gender balance in the organisation, we very actively promote flexible working, and we have a good take-up of it. We are also doing some work on gender pay issues.

**Richard Lyle:** So you are a shining example to others.

**Francesca Osowska:** Thank you.

**Terry A'Hearn:** At SEPA, 54 per cent of staff are female and 46 per cent are male, while our board is made up of seven male and four female members, which works out at 64 and 36 per cent. There will be a focus on changing that balance as we recruit over the next couple of years.

When I joined the organisation, there were five executives on the executive team; four were male and one was female. I have since split a role, so now we have six executives, three of whom are male and three female. In the next tier down, things are pretty even, and we have a programme in place to ensure that that sort of thing flows much more strongly over time and we start to get a much more even spread across the levels.

**Richard Lyle:** So you provide an excellent example, with work in progress.

**Terry A'Hearn:** I hope so.

**Alan Hampson:** On the scale of volunteering effort that was asked about earlier, there are about 4,500 days of volunteering per annum on our national nature reserves, and our grants support volunteering opportunities in the region of 85,000 to 90,000 every year.

**The Convener:** So the number is quite substantial.

**Alan Hampson:** It is.

**The Convener:** Francesca Osowska mentioned flexible working. Does either of your organisations participate in the carer positive initiative?

**Francesca Osowska:** Not that I know of, but you will have to forgive me. I am still only on day 40-something into the role.

**The Convener:** I appreciate that, but I would encourage both of you to look at the initiative, as it allows carers, who make up a very important sector, to come into the workforce. I wanted to put that on the record.

**Francesca Osowska:** Thank you.

**David Stewart:** Have you assessed the financial effect on your respective organisations of leaving the EU? Perhaps we can start with SEPA.

**Terry A'Hearn:** We have looked at the various impacts of Brexit, which, as you know, is a huge issue. Some of our funding, particularly in the area of waste, is EU based, and we will be looking at how we can maintain it. The other direct financial impacts of Brexit on our budget are not really significant, except that there are specific areas such as chemicals management in which an alternative will clearly need to be put in place. For

example, will we stay in the registration, evaluation, authorisation and restriction of chemicals—or REACH—programme, or will we come out of it? If we come out, how will we replicate it?

We have worked with officials on focusing on those areas for which we think we have responsibility and where there will be a clear, urgent need—REACH, for example, or what happens with the emissions trading scheme. At the moment, we do not necessarily see huge financial impacts on our budget, with the caveat that there is so much uncertainty around this.

**David Stewart:** What about SNH?

**Francesca Osowska:** As you will be aware, we currently lever significant funding through EU programmes, and part of our preparations for EU exit involve working with partners on thinking through alternative sources of funding should that funding not be available. Obviously, we do not know how the Scottish or UK Government will take forward those EU schemes in future, but we are working with partners to ensure that we understand the implications of future funding decisions for them.

**David Stewart:** I had a quick look at SNH's European funding and I make the total to be around £57 million if we include the SRDP, the European regional development fund and the EU LIFE programme. Is that figure accurate, or is there more funding that I have not identified?

**Francesca Osowska:** That is the majority of the funds. We receive a tiny amount through LEADER, but £57 million is a good headline figure.

11:45

**David Stewart:** That is a significant chunk of the SRDP budget. At one level, I congratulate you on managing to lever in as much as that. However, if that funding does not continue after 2020, it will leave a big gap in your future programmes. Is that part of your risk register as well?

**Francesca Osowska:** Yes, it is.

**David Stewart:** It is a substantial amount.

**Francesca Osowska:** Yes, it is. In the EU exit work that we are doing, continuity of funding is one of the main issues and we are discussing that with partners. The other issues that we are looking at are around day 1 readiness, such as making sure that our documentation is up to date, and we are working with the Scottish Government on some of the legal issues as well.

**David Stewart:** Does either organisation employ a significant number of EU nationals?

**Francesca Osowska:** We have 23 staff with EU and European Economic Area nationality—18 female staff and five male staff.

**David Stewart:** What about SEPA?

**Terry A'Hearn:** It is in the same range, so we have done a lot of work with them to support them.

**David Stewart:** Have you picked up any anxieties about future employment from those EU nationals?

**Terry A'Hearn:** Yes. I would say that all our people in that category have some anxiety—some more than others.

**Francesca Osowska:** The Scottish Government has a working group across the public sector for EU nationals and one of our EU nationals participates in that group, which is a helpful line of communication and support.

**David Stewart:** As Donald Cameron identified in the last session, there is clearly some negotiation around this in relation to reciprocity, which we would all welcome. However, we also need to think about future generations of people from the EU who might wish to work in Scotland. That point is still vague so there are still some issues to be worked out there.

My final question—which you partly touched on—is about looking at alternative sources of income if you suddenly lose that big chunk of EU funding. What sort of work has been done by both organisations on that?

**Terry A'Hearn:** We have set up what we call the commercial services team—in retrospect, I am not sure that that is the right name for it. The team looks mainly at overseas work. It ranges from accessing EU funding, other forms of international funding and UK funding through to general commercial work, where we advise people internationally.

We are very deliberately not competing with others in Scotland—that would not be appropriate for a monopoly regulator. Whether or not we are in the EU, our budgets will become increasingly tight, so that team's job is to ask what the opportunities are to bring in other forms of revenue over time.

**David Stewart:** Presumably you are focusing particularly on with EU countries in terms of new markets.

**Terry A'Hearn:** We are focusing on countries both inside and outside the EU. We were a minor signatory to an agreement in India last week. Our major project is a funded project in Cyprus. We are continuing to try to harness and exploit opportunities, whether they are inside or outside the EU.

**David Stewart:** So that would ensure that you have extra income because of your expertise—you would draw income into your organisation from across the world.

**Terry A'Hearn:** It provides multiple benefits for Scotland. Income is clearly one of them but other benefits include staff development. We learn from others when we work overseas and it enables us to build and maintain relationships with others. If we are out of formal processes, having other ways of interacting with colleagues in Europe is very important. It has a multiple set of benefits.

**David Stewart:** What about SNH?

**Francesca Osowska:** Our position is similar—we are working with our partners to identify alternative sources of funding. We are also in touch with similar bodies across the UK so that we have an understanding of the UK picture. Throughout the process, it is about being clear about our priorities and looking at where we can lever funds for some of our key priorities such as biodiversity. Alan Hampson has more to add to that.

**Alan Hampson:** We have just completed an initial review to help us to look at the opportunities to diversify our funding. That covers both generating income for ourselves and sources of funding that can support the sector as a whole. Over the next few months, we will be looking at that general review, identifying the opportunities within it and looking at the impact of taking forward those opportunities as well as the resourcing around that. We are actively pursuing that area of work.

**The Convener:** I have a question that is perhaps an unfair one to ask a relatively new chief executive. Three or four years ago, peatland restoration was more ambition than reality. At that point, there was a lot of talk about the possibility that if the Scottish Government put up some funding, external funding could be leveraged in. Is that happening yet? We know about the £10 million of Scottish Government funding, but we also know that demand might well outstrip that. What other sources of funding, if any, are being identified to support the work?

**Alan Hampson:** That is one of the areas that we have identified in the review of diversification of funding. We have been considering ways of bringing in not only third sector money, in respect of restoration work, but, potentially, private sector money in terms of utilising some of the benefits of carbon capture. It is early days, but we have had initial discussions with some quite big players about the potential in that regard.

**The Convener:** Do you mean pension funds and so on?

**Alan Hampson:** We have not approached pension funds directly, but that is one of the areas that we identified in our work.

**John Scott:** I declare an interest, as a farmer. SNH will be aware that landowners and farmers are having difficulties accessing the integrated administration and control system. Is that a function of budget reductions, staff reductions or other reasons?

**Francesca Osowska:** You will be aware that the agri-environment scheme is quite complex. We have been working hard with the Scottish Government to ensure that farmers and others can access the scheme regardless of the complexities. My understanding of the trajectory, which began before my arrival in the organisation—again, I am not using that as an excuse—is that the processes have improved recently, as a result of a lot of effort on the part of our staff and the Scottish Government. If you want to bring any particular cases to our attention, I would be happy to discuss those in more detail.

**Mark Ruskell:** How might your work change after Brexit, once we lose access to the European Court of Justice and the offices of the European Commission?

**Francesca Osowska:** It is difficult to speculate because we do not know what will replace them. We know that the UK Government has made an announcement on the potential future regulatory regime, but it is not clear whether that will apply to the devolved Administrations or not. We know that the Scottish Government is actively pursuing that issue with the Department for Environment, Food and Rural Affairs.

With regard to the role of SNH, as a non-departmental public body we will be guided by whatever regulatory regime the Scottish Government puts in place.

**Terry A'Hearn:** I do not have much to add, except to say that whatever system is in place, what I said in my earlier answer about the clearer simplified permits will be important. If a regulator can make it crystal clear what the law requires of people, whatever institutional arrangements exist will work more easily. I do not have any insights into what will replace the forums that you mention, but I hope that our system will be in a better position to be scrutinised.

**Mark Ruskell:** Have your boards discussed the issue? Do they have a preference?

**Francesca Osowska:** Do you mean in terms of the regulatory regime?

**Mark Ruskell:** I mean in terms of what will replace the European Commission and the ECJ.

**Francesca Osowska:** No. SNH's board has not discussed that.

**Terry A'Hearn:** SEPA's board gets a regular update on Brexit, but we have not had a discussion on that particular issue.

**Donald Cameron:** I have a couple of questions for SNH on biodiversity. Clearly, there will be a transition between the framework grant structures and the new challenge funds. When will there be greater clarity around the new challenge funds?

**Francesca Osowska:** Alan Hampson held a meeting with the key recipients of the framework grants to talk through the move to the challenge funds in some detail. The discussions about the transition have been going on for some time, so I hope that the bodies that are in receipt of the grants will not have been taken by surprise. We are confident that that process will be clear from the beginning of the financial year, when we start using the challenge funds. Alan Hampson can elaborate on that.

**Alan Hampson:** The idea of the challenge fund is to target the money that we have at priorities for the outcomes that we are trying to achieve. To give you an idea of the scale that we are talking about, around 5 per cent of the money that we make available in grant funding will go into the challenge funds.

In the past we held open grant rounds, which allowed people just to pitch in. We found it increasingly difficult to target that money at where it would be best used, so the challenge fund approach is more like mini grants that will enable us to target the priorities better and to ensure best value for money for those who are offering to contribute.

**Donald Cameron:** There is a feeling that there is a lack of funding support for biodiversity in general. Can you offer any assurances to interested organisations?

**Alan Hampson:** We need to change how we offer that support. There are some big challenges in relation to biodiversity. We need bigger and more strategic partnership projects that pool people's resources, we need agreement around the common priorities and we need to lever in as much external funding as possible. We want to lead the way in developing bigger and more impactful projects.

**Francesca Osowska:** It is important to focus on outcomes. The committee will be aware of "Scotland's Biodiversity—a route map to 2020". We published an interim report on the route map projects earlier this year: two of the 12 priority projects were rated as "complete", eight were rated as being "on track" and the other two are areas in which we want more progress. That

report shows very good progress on biodiversity targets, and we have done further work since it was published. I hope that the second annual report, which we hope to publish next year, will show even better outcomes.

**The Convener:** I want to pick up on the point about the work that SNH has done as an organisation, and to explore briefly your relationship with the Royal Botanic Gardens Edinburgh. I hesitate to say this, but RBGE is doing a great deal of the work that SNH may ultimately get the credit for as endangered species are saved and biodiversity is enhanced. What is your relationship with the RBGE?

**Francesca Osowska:** It is nice to feel that we will get the credit for something like our biodiversity work.

**The Convener:** And not just the criticism.

**Francesca Osowska:** Indeed.

The Scottish Government has established the environment and economy leaders group under the leadership of Bridget Campbell, which is known by the not-very-pretty acronym EELG. It brings together a range of bodies that operate in the environmental field, including SNH, SEPA, the RBGE, the two national parks and so on. That has been a really excellent mechanism for collaboration, and through it the RBGE and SNH collaborate on a range of scientific studies and research on biodiversity.

**Donald Cameron:** This is my last question. There has been a decrease in agri-environment funding, as we have already discussed, as well as the decline in spending on SNH management agreements and funding for site-condition monitoring. What impact will that have on biodiversity?

**Francesca Osowska:** I refer back to the point about outcomes. As Terry A'Hearn said earlier, as a Government body we work with the budget that we have. If that budget decreases, the key for us is to prioritise the areas of greatest need. In terms of biodiversity, we have good outcomes on the route map and the Aichi targets, and we will continue to focus on areas in which we feel that biodiversity needs to be enhanced.

**Mark Ruskell:** Is there a danger that the challenge funding will lead to short-termism? I will use the example of giant hogweed, which needs a long-term catchment-wide approach. If the funding comes for a couple of years and then stops, one or two years later the situation will be back to square 1—the hogweed will have taken over the catchment and we will need to reinvest. Are there challenges for that funding in relation to adopting a preventative approach?

**Alan Hampson:** That is where the bigger and more strategic projects that I referred to become essential. In dealing with an invasive species such as giant hogweed, we could carry on putting the same money into the same area year on year, but we need to treat the root cause and not just the symptoms. Through a national steering group, we are working with a number of partners to ensure that the money that we put into addressing invasive non-native species is invested in treating the causal origin rather than constantly treating the symptoms, which tended to happen in the past more than it should have done.

12:00

**Mark Ruskell:** Will that be long-term enough to tackle the problem? You cannot tackle giant hogweed in two years: it perhaps needs a 10-year approach on a catchment basis to eradicate it—if you can ever eradicate a non-native invasive species. I am trying to understand exactly what is in the budget this year and how you will address such things over time.

**Francesca Osowska:** In that respect, I would not distinguish between challenge funding and grant funding, because they are both annual processes. In either scenario, we try to make sure that we understand the long-term impact, and—as with the hogweed example—what recurring funding will be needed through grant or challenge funds. As Alan Hampson said, we consider much broader-scale interventions that allow us to understand the pipeline of future funding that will be needed.

**The Convener:** I touched on the dreaded D word earlier—we will now return to deer management. As the committee heard during its scrutiny of deer management, the direction of travel appears to be that SNH is cutting funding to deer management groups. We were given a couple of examples of DMGs being asked to step in to provide funding—in one case, to continue a project and, in another, to develop a project. How do you see that progressing? How can we expect deer management groups to do what they ought to be doing if funding goes down?

**Francesca Osowska:** The overall funding for deer management has not reduced. However, it came out in our deer review that some deer management groups manage deer in their locality very well and do not need as much support as they had been getting. Other deer management groups either face a more complex set of issues or need more support for other reasons. We have tried to target our funding at the deer management groups that need it most.

**Alan Hampson:** We have written to DMGs to ask what issues they face, and to make it clear

that we will take a more robust approach to addressing those issues in the future.

**The Convener:** Okay. You have indicated to the committee that you have secured an additional £175,000 of funding from the Scottish Government for deer management. How is that being deployed, and is it adequate for the task that you face?

**Francesca Osowska:** That funding has become available through recycling of SRDP funding, with the Scottish Government's agreement. It is being used for habitat assessment and control measures in particular areas. We are confident that, through the work that we do with deer management groups, we can make great strides in addressing the issues. We prefer to have a good dialogue with the local community, leading to voluntary co-operation and agreements about management of deer in the locality. In the majority of cases, we have that good dialogue.

**The Convener:** Is that not true of every case?

**Francesca Osowska:** We do not have good dialogue in every case, but in some of the better-documented areas where situations have been more challenging, we have worked with all the partners in the area to arrive at a position on which all stakeholders can agree. We understand the challenges, but it is part of our role to appreciate the different views, needs and outcomes that are sought by different partners and to try to negotiate a solution.

**The Convener:** In terms of the costs that are associated with policing deer management, how expensive are regulatory agreements that are made under section 7—whether they work or not? What costs are associated with section 8 agreements? The committee notes that SNH seems reluctant to move on those orders.

**Francesca Osowska:** Our reluctance to move to section 7 and section 8 agreements is not simply about cost. It goes back to my earlier point about us tending to get much better outcomes when we get a negotiated settlement. I do not have information on the cost of section 7 and section 8 agreements, but I will be happy to provide it.

**The Convener:** You are saying that cost is not the determining factor in how robustly you pursue matters.

**Francesca Osowska:** Cost is not the determining factor. We much prefer voluntary agreements that all members of the community and our stakeholders sign up to. We get better outcomes when we have such agreement.

**The Convener:** This is not strictly a budget question, but it would be remiss of me to pass up the opportunity, given the committee's interest in the subject. What progress is being made on

section 7 agreements since the committee produced its report? Has there been any further progress?

**Francesca Osowska:** Do you mean in terms of use of such agreements?

**The Convener:** I mean not just their use, but their effectiveness. Significant questions were asked about the effectiveness, or elements of the effectiveness, of section 7 agreements.

**Francesca Osowska:** I do not have that information. Perhaps Alan Hampson does. If not, we can write to you.

**Alan Hampson:** That is where some of the additional money is helping: it is paying for habitat assessment so that the impact of deer can be made much clearer. The additional money is also helping to support control work. It is a bit of an incentive to get out and get on with the work that has been on the table for a while.

**The Convener:** No doubt we, and you, will return to the subject.

**Francesca Osowska:** No doubt. I look forward to it.

**The Convener:** As members have explored all the subjects that they want to explore, I thank all the witnesses for their time this morning. The meeting has been very useful and helpful. I wish you all a good Christmas when it comes.

At our next meeting on 19 December, the committee will hear evidence from the Cabinet Secretary for Environment, Climate Change and Land Reform, as part of the committee's scrutiny of the Scottish Government's draft budget for 2018-19. We will also consider our work programme.

12:06

*Meeting continued in private until 12:29.*





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