

Defra Science Advisory Council (SAC)

Minutes of meeting, 13 March 2025

1. Welcome and apologies

The Chair, Professor Rowland Kao, welcomed attendees and reminded members to raise any potential conflicts of interest. Attendance is recorded in annex A.

2. Reflections on SAC dinner

The SAC reflected on the dinner with speaker Louise Heathwaite, Executive Chair of the Natural Environment Research Council and former SAC Chair. Louise set out four challenges and the role of NERC and SAC in the response to them: water security, the rate of change for decarbonisation, the circular economy, and climate and politics colliding. Louise emphasised the importance of SAC being a critical friend to Defra to enable it to provide scientific challenge. Key points from the discussion include:

- The drive for innovation and how to commercialise: Defra should focus on finding solutions rather than just identifying problems. This fits with the growth agenda.
- The importance of addressing the politics of complex jurisdictions such as the oceans and polar regions to address climate issues effectively.
- The challenge faced by NERC to decarbonise research, which is common to many other research organisations. Scientists should be challenging how things are done or considering stopping some activities to reduce carbon emissions from our research efforts.
- Artificial intelligence has a significant environmental footprint. This is acknowledged but needs to be considered in the context of AI's potential to help us achieve environmental goals more quickly, sustainably and cost-effectively. Tackling these risks and devising practical solutions is needed to make use of AI efficiently, effectively, and responsibly – working towards our sustainability goals rather than against them.
- Water use in food production, other consumption such as textiles and priority of access will require some hard decisions.

Action: Secretariat to add a discussion on domestic water use to the SAC forward look.

3. Chief Scientific Adviser (CSA) update

The CSA provided a brief induction and background to Defra for the new members of the SAC. The CSA provided an update to the SAC on the following:



- The Committee for Climate Change has published guidance for Carbon Budget 7 (CB7) targeting 87% reduction in emissions by 2040 which is a slight increase from CB6. This is needed to reach net zero by 2050 and, although a small increase, will be challenging.
- All four devolved administrations are involved in the biodiversity national strategy and action plan. The UK has committed to all 23 of the targets in the global biodiversity framework.
- The industrial strategy is out for consultation. The strategy includes agri-tech and engineering biology which are important to Defra. The land use strategy is also out for consultation.
- The Defra R&D fellows programme is approaching the end of the first cohort. The scheme has been really well received in Defra and is running again in 2025/2026.
- Geopolitics is having an impact on climate science with countries pulling out of treaties and aid.
- The sustainable farming incentive (SFI) has been paused as the existing budget has been fully allocated. The scheme will be adapted before re-opening. SAC should consider the evidence base for SFI, to give assurance that the funding will lead to successful outcomes.

Action: Secretariat to share a list of Defra's Deputy Directors with the SAC.

Action: Secretariat to add the sustainable farming incentive to the forward look.

4. Overview of Environmental Improvement Plan

The CSA provided an overview of the Environmental Improvement Plan (EIP) ahead of a future discussion. The EIP aims to package together all the Defra policies designed for environmental improvement to allow Defra to meet the environmental targets and to help scope out the intermediate targets. The challenge is that it integrates a lot of different programmes to assess environmental outcomes. There is a need for a strong evidence base and analysis if the targets are to be set properly.

A recent Office for Environmental Protection (OEP) report was quite critical of EIP. The SAC felt that it should look at EIP, alongside the OEP report to consider the factors impeding progress and the gaps in monitoring systems. A systems mapping diagram will show how interconnected it is.

Action: Secretariat to ask the EIP team to reference their thinking against some of the criticisms in the OEP report.

5. Changes to the Outcome Indicator Framework

The outcome indicator framework (OIF) is designed to measure progress towards the goals of the 25 year environment plan. Reporting is provided via an interactive online portal. Defra is considering how to make future data updates more timely. Officials sought SAC's opinion on the proposed move to rolling updates and how to ensure the OIF remains relevant and up to date. The SAC:



- Emphasised the importance of data granularity to identify cross-cutting risks, trade-offs and co-benefits effectively. The SAC supported rolling updates as long as historical data was clearly reported where possible, so that users of the data could interpret it appropriately.
- Recognising that the current grouping of indicators doesn't fully match the Environment Improvement Plan (EIP), supported better alignment. The SAC felt this would improve coherence and suitability if they reflect the key relationships arising from the EIP.
- Highlighted that behavioural insights are crucial for understanding barriers to adoption of sustainable practices. The SAC suggested that better understanding of who the system is designed for is fundamental to improving it.
- Encouraged increasing the visibility and engagement to make the OIF more accessible and useful to a broader audience. This could improve public communication.
- Suggested exploring integration with the Defra Data Services Platform. This might help address the technical challenges related to the current dashboard language as well as visibility.
- Recommended that OIF should also consider tracking international commitments, such as the Global Biodiversity Framework targets.
- Agreed that the OIF should change its name. This will help people to better understand its purpose. SAC suggested the new name should include 'environment' and 'England' to better communicate its scope.

Overall the SAC felt that further work is required to ensure the OIF is dynamic, user-friendly, and technically robust. This will help the OIF to be better aligned with both national and international environment goals.

6. Update on Defra's contribution to carbon budgets and net zero

Defra updated the SAC on Defra's contribution to carbon budgets and net zero. Defra's sectors account for 18% of UK emissions with agriculture expected to become the largest contributing sector by the second half of the 2030s.

The SAC:

- Supported Defra's efforts to understand the scale of the numbers relative to overall emissions by disaggregating figures to separately show negative and positive contributions; this is crucial for identifying opportunities to reduce emissions and increase negative emissions.
- Suggested pushing more on social science to understand land-managers' and farmers' drivers and response to messaging from Defra, highlighting substantial literature on behavioural barriers to adoption.
- Cautioned against exclusive emphasis on individual behaviour, advocating attention to broader structures and social practice theory.



- Suggested working with supermarkets to support farmers who wish to introduce regenerative practices.
- Emphasised the importance of scientific understanding of different management interventions for long-term stability of mineral pools for storing carbon. Defra is working with the British Standards Institute to define standards for permanence and carbon persistence.

The CSA reassured the SAC that there is a substantive strand of research and development focussed on the environmental consequences of net zero actions. The CSA proposed returning to this subject soon to further explore measures to reduce agricultural emissions.

7. Forward Look

The SAC discussed items that should be on the forward look and ways of working. Items proposed for discussion were:

- Net Zero with someone from DESNZ providing their perspective e.g. the DESNZ CSA, Paul Monks could be invited as a speaker.
- Update on soil health indicators. Prof. Bardgett will help to shape the discussion with the Defra team.
- Windfarms on peat is a challenging area for Scotland. It would be worth discussing in SAC as this is likely to become something that England needs to consider.
- Return to the data services platform and the outcome indicator framework to follow up on the suggestions made.
- Government digital service (GDS) on the overlaps, stakeholders, links to other government departments, and the national capability aspect across the whole system for environmental data.
- The challenge of air quality and noise pollution and access to green space.
- Environmental principles and their application within Defra.

The SAC discussed ways of working and suggested sending questions to officials in advance of meetings to improve discussions. The SAC would also like to hear how teams have used the advice given by SAC, even if it is not used. The SAC can provide feedback to teams after the meeting if needed to summarise the key points.

Action: SAC to trial sending questions to teams in advance of the meeting and providing feedback afterwards if needed.

Action: Prof. Bardgett to work with the soil health team on shaping a future discussion at SAC.

8. Official Development Assistance

Defra is working to strengthen its Official Development Assistance (ODA) R&D portfolio, oversight and strategic steer as well as aligning Defra's objectives with the

broader government ODA R&D portfolio. Defra is operating in the context of a much smaller cross-government ODA R&D budget and sought advice on opportunities to make progress.

The SAC:

- Sought to understand the boundaries for potential restrictions on the type of spend and to what extent Defra can expand the Global Centre on Biodiversity for Climate to seed fund entrepreneurial schemes to support local researchers.
- Saw opportunities emerging with partners in Africa and the development of biodiversity credit markets for conservation investments in low-income countries.
- Suggested linking land use change, particularly forest loss and fragmentation, to disease transmission and the consequent impacts on livelihoods.
- Suggested focussing less on particular ecosystems and more on resilient socioecological systems.
- Recommended mapping what is already happening regionally, by other governments and universities. Learning from universities where their preferred partners are and concentrating effort into fewer countries will reduce duplication and spend whilst still having an impact.
- Highlighted the importance of linking with existing work, such as the British Academy's funding on biodiversity, indigenous peoples, and gender; and organisations like Kew, which have continuous overseas investments.
- Recommended re-engaging with the marine community, where trust in international collaboration has been lost as a result of funding cuts, to bring in a bigger marine component. There is significant expertise that doesn't have a home to apply itself within the UK.
- Suggested that Defra consider what is working in this space e.g. broad and shallow vs deep and narrow. For example, GCBC's strength is its breadth, covering lots of small projects in lots of countries.
- Highlighted that it is important to think beyond local communities; mid-level actors greatly influence what happens. Partnerships are more important now that Defra is trying to achieve change at scale.
- Highlighted the significance of evaluating what has worked in the past and considering both the expected and unexpected results of research programmes to inform future strategies.

The SAC recognised that ODA funding must primarily address poverty alleviation and sustainable development in developing countries. The SAC stressed the importance of partnerships at both the national and international level. Defra should draw on past experience from overseeing other R&D portfolios both small and large-scale. They also stressed the benefits of presenting case studies as examples in



addition to just statistics. The SAC offered to help navigate the upcoming challenges by discussing again if needed.

9. Any other business

The SAC reflected on the day's discussions. The SAC:

- Asked that teams be reminded that SAC should be seen as a critical friend.
- Agreed that it would be helpful to receive feedback from teams on what advice has been helpful, what was enacted and what wasn't.

Annex A: Attendees and apologies

SAC Members

Rowland Kao (Chair)
Richard Bardgett
Nicola Beaumont
Lisa Collins
Felix Eigenbrod

Nick Hanley
Chris Hutton
Jane Hill
Susan Owens
Marian Scott

Defra

Gideon Henderson – Chief Scientific Adviser (CSA)
SAC Secretariat

Devolved administration observers

Johnathan Dalzell – Northern Irish Government Observer
Mathew Williams – Scottish Government Observer

Apologies

Justine Bejta – Deputy CSA
Camille Bonneaud – SAC member
Alistair Carson – Northern Irish Government Observer
Caryl Williams – Welsh Government Observer