



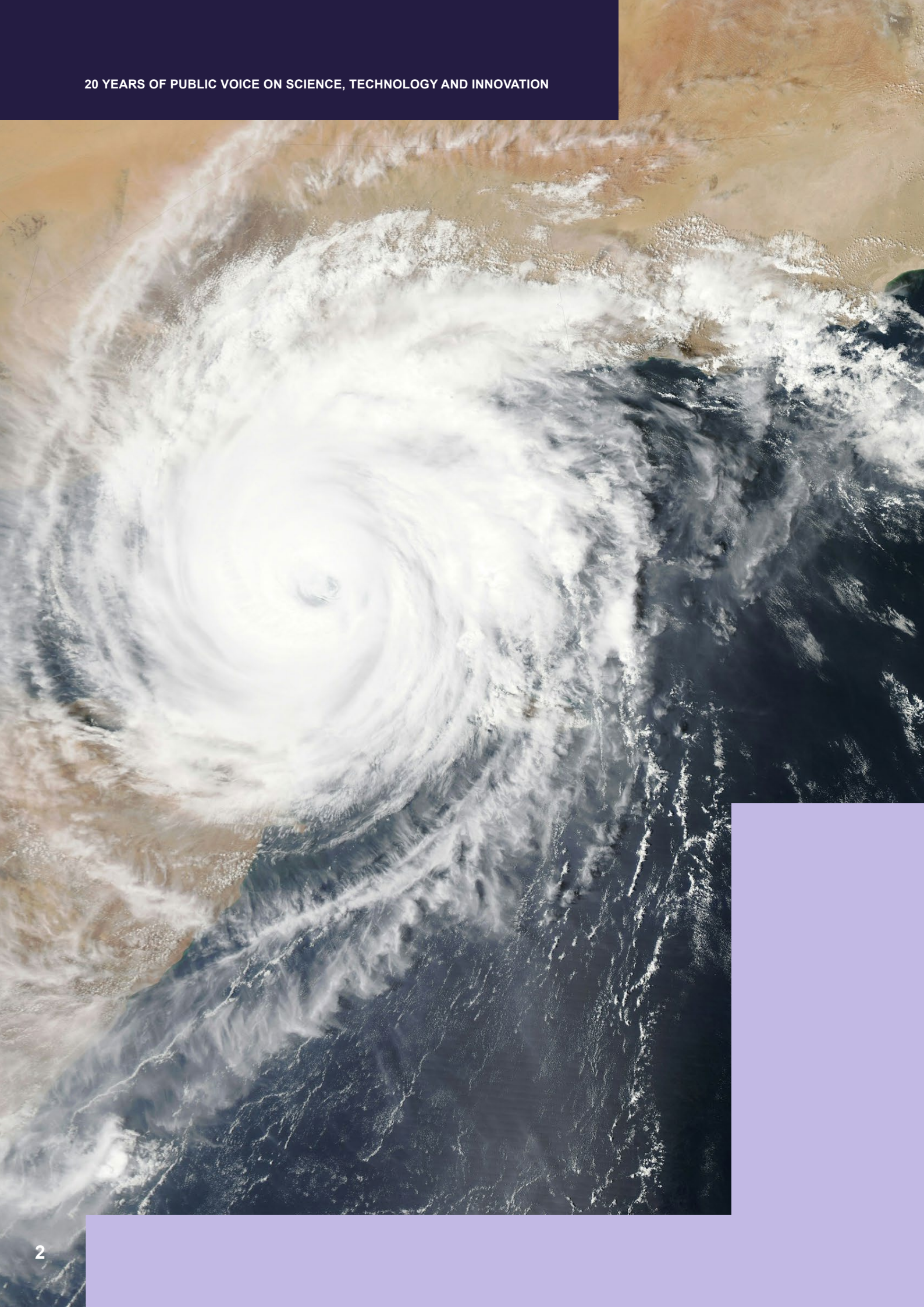
Sciencewise: 20 years of public voice on science, technology and innovation



UK Research
and Innovation



BRITISH
SCIENCE
ASSOCIATION



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Foreword

In the twenty years since its inception, the Sciencewise programme has fostered deep dialogue and collaboration between scientists, policymakers, and the public.

Sciencewise stands for a simple belief; that we solve problems better when the wisdom and judgement of all parts of the system are harnessed.

In recent times we have become all too familiar with complex and difficult to solve problems, including biodiversity loss, climate change, and the place of technology in our future world. As we watched science and policy evolve in the face of a global pandemic, we all took part in a real life science and society experiment.

The last twenty years have seen the rise of ideas like systems thinking, complexity theory and the importance of resilience. These are new ways to solve problems we face by seeing them as part of wider dynamic systems, and valuing the linkages, relationships and interdependencies among different components. This means the context around Sciencewise has changed. The underpinning assertion of the programme — initially, perhaps ahead of its time — has now become a normalised approach that we take into solving our most challenging problems.

A roundtable and a public event, in Spring 2024, brought together many individuals and organisations who have contributed to the success of this important programme over the last two decades, and who have an interest and stake in the effective public engagement of the future. This report shows some of their thoughts and ideas about both the past and the future of Sciencewise.

Thank you to all the participants, and to all those who have contributed to the work of Sciencewise. As we celebrate twenty years of progress, let's reaffirm our commitment to harnessing the power of science and technology for the benefit of all, enriched by the flow of ideas and wisdom between scientists, policymakers, and members of the public.



Sarah Castell,
Chief Executive Officer,
Involve and Sciencewise
Programme Director



HOW?

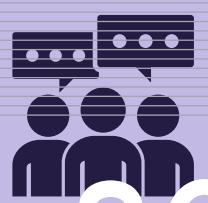
- do we live more sustainably?
- can we live healthily?
- do we shape the future of life?
- should we govern our digital world?

brings diverse public voice into strategy and policy making on science and technology by supporting government departments and research bodies to commission public dialogue.

Public dialogue brings together a group of citizens over an extended period to deliberate on a complex topic with specialists, policy makers and each other.

Public dialogues have helped to...

- Progress issues with no clear answer
- Get beneath top of mind attitudes
- Understand the richness and variety of public views
- Move beyond polarisation



8,000

members of the public discussing the social and ethical issues of policy making



70,000

hours of deliberation

We have supported

“75”

public dialogues



64

government bodies commissioning public dialogue

Some topics covered in our dialogues

artificial intelligence

future flight

health regulation

health data

oil and gas

future cities

nuclear power

housing

genomic medicine

research priorities

future cities

wellbeing

food

genetic engineering

food security

location data

digital identity

data

embryo research

net zero

carbon capture

biomass

climate adaptation

stem cells

Noteworthy dialogues from 2004 to 2024...

How can the government encourage householders and communities to take up low carbon measures?

A dialogue on this question led to the development of the Low Carbon Communities Challenge which invested £10 million in 22 communities to test out energy developments.

2008, Big Energy Shift dialogue

A public dialogue on two controversial IVF-based techniques to prevent the transmission of mitochondrial disease found broad public support for the treatments, subject to safeguards.

This directly informed the regulator's advice to the government, who in 2013 said the treatment could be made available to patients.

2012, Human Fertilisation and Embryology Authority

Data about our lives is available in increasing frequency, detail and accuracy. This brings great potential but also raises new ethical considerations.

The UK's first dialogue on the **ethics of location data** informed new guidance on how to unlock location data's immense value, while mitigating ethical concerns.

2021, Geospatial Commission

Genome sequencing can help doctors better understand a patient's symptoms and identify other family members at risk.

But should we screen newborn babies to identify genetic conditions before symptoms even occur?

A public dialogue exploring this question led to Treasury approval for a newborn screening pilot involving approximately 100,000 babies.

2022, Genomics England



Executive Summary: innovation in engagement in science for the next 20 years

In early 2024, the British Science Association and Involve — as part of the Sciencewise Consortium — organised two events to reflect on twenty years of Sciencewise.

The first Roundtable was named: What can we learn from the history and experience of Sciencewise public dialogue? The roundtable was invite only — participant list can be found in [Appendix 1](#). The second was a public event called: How can the public help shape our research and policy future.

Drawing from both events, the following opportunities, on the next page, stand out as ways the landscape of public dialogue could evolve to meet the needs of the research and policy infrastructure in future.

This report shares the themes and findings from both events and includes thoughts and summaries from participants, along with ideas in their own words.

“ We need to resist the temptation to talk at people about science, to think that the public messaging is all you need to get people on board and build trust. Public engagement allows us to listen, to gather important qualitative information and evidence, helping us to understand not just what the public thinks, but why they think it.



**Professor Dame
Angela McLean,
Government Chief
Scientific Adviser**

For policymakers and researchers

- ▶ **“Scaling up”**: set the ambition and associated capability so that public engagement and dialogue penetrates all areas of science and technology and takes place at all stages of research and policy development — this includes areas of science and technology that are not just high profile, but also have a big effect on people's lives.
- ▶ **“Scaling out”**: consider the range of ways and methods public insight can have a more direct influence in decision making, including those which involve commitments from scientists and policymakers to respond to recommendations.
- ▶ **“Scaling deep”**: embedding public voice, by moving beyond one-off dialogues to developing forms of engagement and dialogue that are iterative, long-term and sustained ways of hearing public voice and insights; built into the heart of strategies and approaches to governance around science and technology.

“ Science is *TOO* important to be left to scientists. ”



Jack Stilgoe,
Professor of Science
and Technology
at UCL

For practitioners and engagement designers

- ▶ **Build capacity and skills:** accelerate skills and recognition so that policy makers and researchers know when and how to commission public dialogue, in order to equip them with the tools to address questions raised by science and technology. Enable public dialogue to become an integral part of good research strategy and policy making.
- ▶ **Share expertise around public engagement and dialogue in science and technology:** to bridge the gaps between researchers, academics, policymakers and others.
- ▶ **Show evidence and impact:** demonstrate that dialogue and engagement is normal, valuable and beneficial by sharing widely all outcomes of processes. Be better at telling stories about how dialogue has (or hasn't) had an impact on decisions.



Science and Innovation Investment Framework 2004–2014 by the UK Government said that to get the social contract for new science investments, public engagement needed to be part of the policy package. This was in response to the backlash around GM crops from the public, much to the surprise of policymakers.



From 2004 to 2024: Roundtable 1

The first Roundtable was named: What can we learn from the history and experience of Sciencewise public dialogue?

The roundtable was made up of invited guests from across the landscape of organisations who engage the public in science topics.

Participants discussed what we can learn from 20 years of Sciencewise; and considered how the UK's research and policy culture has evolved towards a greater understanding of, and use of, high quality public dialogue, in exploring future science and technology.

What have we learned in twenty years of dialogue?

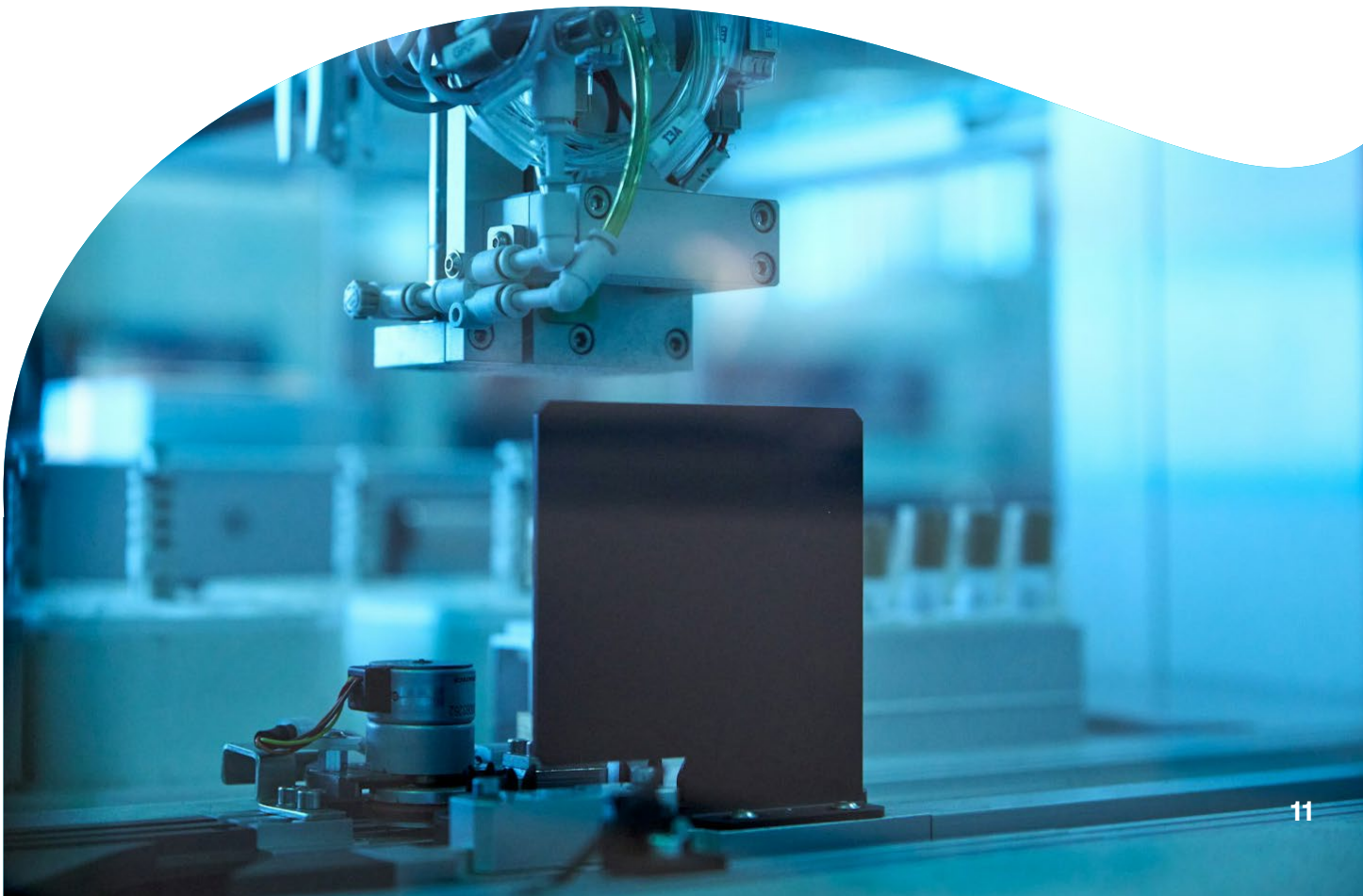
Four overarching achievements were identified by participants.

Culture change: proving that the public can be effectively engaged on complex issues

Sciencewise has normalised the idea that members of the public can come into a discussion about complex science and technology issues, even when (and sometimes especially when) the nature of, and implications of, the topic under consideration is not yet fully understood. Now, it is accepted that public participants can grasp the most complex scientific topics and bring new and valuable insights to how science and technology develops.

Finding the common themes: dialogues have revealed underlying themes in the governance of new technologies

Although each Sciencewise dialogue looks at a specific science/technology question or topic, the overall body of public deliberations shows common underpinning themes. The programme has highlighted common interest in the governance and management of the distributional effects, risks, benefits, and purposes of a technology. Another recurrent theme is a public focus on inequality, both in the impacts of science and technology, and in who holds knowledge and power about science and technology in society. The Sciencewise programme has revealed these underlying issues across many dialogues — giving a head start on what can help shape future engagement on new science and technology and expectations around its governance.



Mutual learning: Sciencewise has demonstrated that dialogue is not just about persuading the public to adopt new science and technology

Sciencewise has never been a way to convince the public that a particular area of science or technology is worthwhile or to “gain acceptance”. Public dialogue enables and encourages mutual understanding, by creating a level playing field, so that all participants can learn. For policymakers, dialogue has led to a more porous and continuous approach to communication and engagement. It has also promoted innovation and strategic insight. Dialogue has helped technical experts and decision makers design futures with a vision of and insight into what the public might want. This, in turn, can build trust and confidence in policymaking.

Participants in the roundtable felt that overall, while all commissioners might initially seek to carry out dialogues because they want to learn about the public’s view on a question they have already framed, dialogues would often provide learnings about blind spots, or unhelpful framing of issues which can be hiding in plain sight. Done well, dialogue is *“not always about changing the publics’ mind — it can also be about changing your mind”*.



Standardising principles: creating and applying principles for robust public dialogue

Sciencewise has promoted the importance of the core principles that make public dialogue robust, legitimate and successful, and has shown the value in the professional skills involved in designing and running them well. It is now well understood that scientists, policymakers and public participants can talk constructively together — but they must have the right space, framing and support. In public dialogue, where you are seeking to reach beyond those who self-select, the public’s time and expertise must be valued. And to create an equitable engagement, people must be financially recompensed for their involvement.

Sciencewise dialogues have also demonstrated the need for timely consideration of public dialogue and engagement — using the right approach at the right time. [*The public conversation about genetically modified crops*](#) that preceded the setting up of Sciencewise highlighted the risk of involving the public only after a decision had been taken. Sciencewise principles determine that dialogues have to be suitably timed and with a route to impact; the most impactful dialogues have been structured around a particular topic with carefully recruited groups of people that have produced insights that have then informed policy.



Case Study: Mitochondrial donation (2012)

One very successful Sciencewise dialogue was the 2012 work on mitochondrial donation commissioned by the Human Fertilisation and Embryology Authority (HFEA). This dialogue gathered opinions on new IVF techniques designed to stop mitochondrial disease transmission. The dialogue directly influenced policy development and its findings shaped the advice given to the government, which considered legal changes to permit mitochondrial replacement techniques.



In this case, there was a concrete issue, but the dialogue happened far upstream of any policy decision. Therefore, delivering the dialogue at speed was not essential, and this allowed the subject to “breathe” so that as different possibilities and decisions emerged, the general principles underpinning the things that really matter to publics could help policymakers navigate regulatory uncertainty.

How can public dialogue help us in the future?

Roundtable participants reflected on how the seeds sown in the first twenty years of the Sciencewise programme could go on to develop a more participatory culture around the development of science in society.

Permacrisis, polycrisis and scientific innovation: Addressing the challenges of the next two decades

When the world faces significant challenges such as health, energy, the climate crisis and AI, should public engagement in science and technology focus on those biggest challenges, or spread resources across diverse areas? How could public dialogue be a step towards bigger and more strategic questions? How can dialogue work towards developing a science nation, and solve issues that are critical to the welfare of UK citizens and the economy?

The round table participants identified some challenges that Sciencewise would be well placed to help researchers and policymakers navigate over the coming years:

- **Uncertainty and fear:** policymakers are facing an incredibly challenging situation, globally and nationally, and people can feel unstable and fearful about the world. To combat this, roundtable participants felt there needs to be a sense of social cohesion, shared endeavour, and optimism that solutions can be found. The narrative of research and innovation could play a part in navigating these uncertainties — especially where public participation can be demonstrated as part of the story. Research should be a collective endeavour to solve social and technical challenges together.



- **The politicisation of science and technology:** public deliberation, outside of science and technology, has seen a huge amount of innovation in the last 20 years, with examples like the [Climate Assembly UK](#), the [Scotland's Climate Assembly](#) or the [Citizens' Assemblies in Ireland](#), which have helped unlock political stalemates using public engagement processes. These and other examples have led to a body of knowledge and global standards around how to bring the public into complex decision making with legitimacy and real influence. And in these cases, practitioners have needed to engage with political realities as well as the evidence base.

However, roundtable participants considered that scientists might need to lean into the political context more, if they are to set out how to convene legitimate and influential national level deliberation exercises on issues like AI, for example.

- **Multiple publics:** the fragmentation of media consumption and public discourse has continued over the past 20 years, and there are many more diverse perspectives as a result; creating both opportunities and challenges for public engagement. An example mentioned on the day was that despite sharing many communication platforms and preferences, young people who live in different parts of the UK feel very differently to each other about the potential impacts of AI.
- **The harm caused by science and technology:** in the case of global engagement with climate research, some efforts to involve marginalised communities such as indigenous peoples have failed. This is because those groups saw science and technology as contributing to the climate crisis, interfering with their ways of life, and operating within an economic system that does not value nature. Therefore, participants judged that the ability to deliver change through public involvement may be limited by the surrounding social and political context; and that there may be a need for new ways of talking about and judging the value of science and technology in the eyes of diverse communities.



- **Pace of change:** many emerging technologies involve complex interconnected policy areas such as energy, infrastructure, skills, and economics. Roundtable participants felt it might be difficult for decision makers to clearly identify one policy question to engage the public on these issues, when they are developing so quickly and across so many areas of public life.
- **Re-emerging issues and debates:** there are topics that were discussed many years ago that are resurfacing in public debate, such as MMR vaccines, and areas where technology has taken a step change in development, such as engineering biology. Public views and values may have changed, or be subject to different influences, and round table participants felt fresh engagement may be needed, but with an understanding of the history.
- **Poor quality public engagement:** there are still many cases where efforts to involve the public in science and technology policy decisions are ill-conceived, close down debate, or happen after a decision has already been taken. For example, roundtable participants felt this could be said of much of the public conversation about AI.

Opportunity to strengthen the infrastructure to meet these challenges

Although Sciencewise has created the spaces for public insight to influence and inform on particular topics, dialogue, along with other participatory and deliberative processes, is not yet embedded into decision making at a strategic level in most Government departments or agencies. Public dialogues are often seen as a standalone piece of deliberative research, and there is considerable opportunity for them to be more embedded in the strategy or governance of major organisations.

Despite Sciencewise being a respected programme and set of methods, roundtable participants felt that its principles haven't been adopted across the policy and engagement landscape to the degree that their potential warrants.

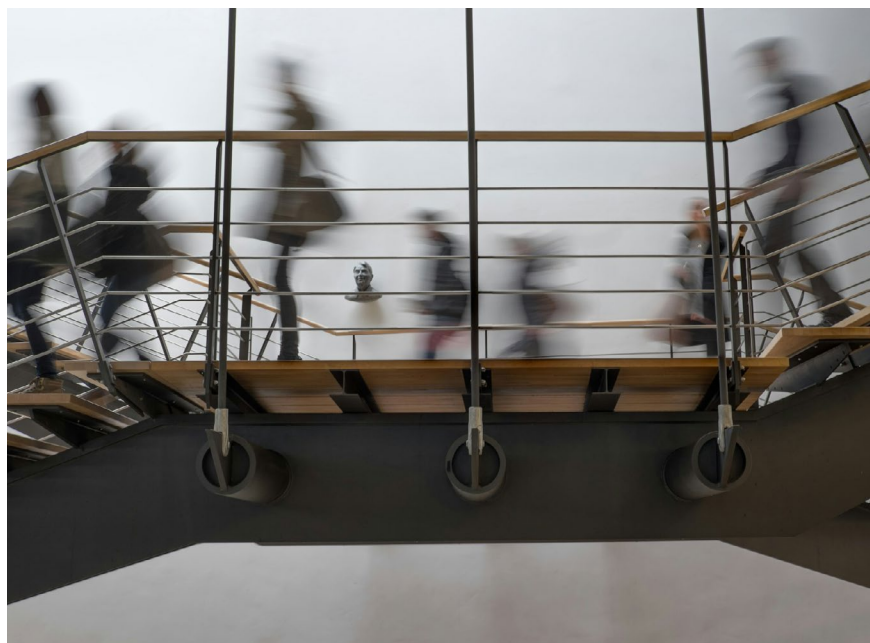
Roundtable participants discussed public dialogue processes as a gateway to considering other ways of sharing power; that future iterations of Sciencewise, of dialogue or all related processes, might enable the system to explore new spaces of power sharing on the future of science and technology.

Sharing and ceding power in science and technology can be particularly challenging, because of the value that is placed on the expertise and technical skill at the heart of science.

Discussion touched on the "ideal" model for a strong relationship between science and society. Participants thought this should incorporate continuous engagement at different points in the research and policy cycle, where decision makers map the principles, priorities, and values of publics onto their decisions, alongside technical, scientific, and economic factors.

In this ideal model, dialogue could align and combine with policy tools like futures, foresight, or horizon-scanning and systems thinking; and with other public engagement tools like consensus-building platforms, citizen-led movements, assemblies and juries, community research, and tracker and omnibus polls. These exercises should not be one-off or sporadic, and must remain robust, credible, and inclusive.

To be most effective, and to become more than the sum of the parts, investing in, and connecting up, the infrastructure of public engagement and policy will become increasingly important.





From 2024 onwards: how can the public help shape our research and policy future?

The second roundtable took place on 21 March 2024. The event was named: How can the public help shape our research and policy future?

The event was open to any interested parties and brought together participants working in research, policy, engagement and academia in relation to science, technology and data. Attendees included civil servants, researchers and practitioners in public dialogue, plus individuals and representatives of organisations and institutions who had been part of Sciencewise's history and were interested in being part of the future of public dialogue.

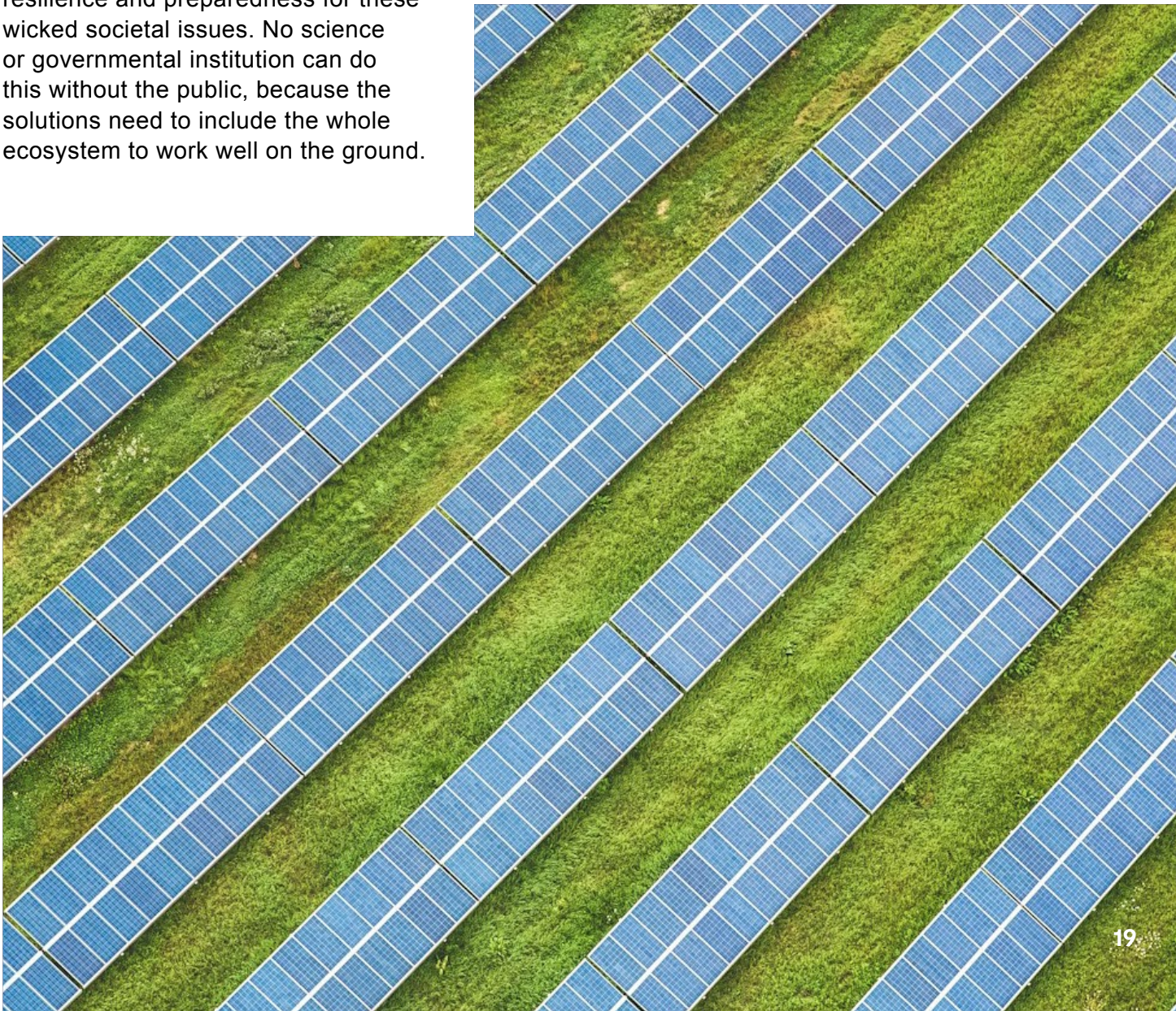
Participants echoed the first roundtable in the areas where they felt public engagement would be important in future. Discussion moved on to identify important principles for refreshing the landscape of public dialogue going forward. Participants then identified some key, practical ways that dialogue could evolve in the coming years.

This chapter summarises their reflections.

Why will we continue to need public engagement and dialogue in science?

The complex problems we face will not be solved by any one player alone. Participants underlined that we need input from the public, experts, government, industry and researchers to make science and technology work for the everyone and towards socially beneficial ends. Participants highlighted examples of the damaging impact caused when science has not been challenged by the public in a rigorous way. We live in an era of permacrisis, so we need resilience and preparedness for these wicked societal issues. No science or governmental institution can do this without the public, because the solutions need to include the whole ecosystem to work well on the ground.

Rebalancing power: Again, as at the first roundtable, participants underlined that dialogue is not a one-way communication to the public, or a talking shop. Nor is it about gaining public support or buy-in for preconceived policies or proposals. Dialogue is about members of the public actually shaping policy by exploring ethical issues and concerns in relation to policy and research. Participants felt that there would be a continual need for policymakers and publics to open their minds and be open to change — which is why Sciencewise was created, and why it continues to be relevant.



What should be the underpinning principles of public engagement and dialogue in science policy and research in the UK?

Several themes emerged from the discussion of the group.

- **Equity matters — we need just transitions to new futures.** Dialogue has long told us that the public cares about fairness — who will benefit and who will be harmed by emerging science and tech — and the equitable outcomes of new science and technology. Public judgement, then, will be increasingly important, requiring processes that allow publics to weigh up the right thing to do, based on evidence, with time to consider, and with the awareness that they will be listened to. The development of new science and technology will need to include public engagement so the future is equitable.



- **Timely public input is the only way input is legitimate.** All engagement with science must strive to avoid “talking down” to the public about science, and seek to understand what they think and why they think it. It must be done at a time where the public’s opinions can still make a difference to science policy and technology in the making. This is what Lord Sainsbury said when developing the [*Science and Innovation Investment Framework 2004-2014*](#). And it still applies now — dialogue and engagement is often too late if the public is already fearful about a piece of science or technology.
- **Science and tech should be at the forefront of innovation in engagement:** There is not ‘one dialogue fits all’ when we talk about engagement and dialogue in science and technology. Like the first roundtable participants, this group noted that we have seen huge steps forward in engagement practices, with thousands of examples from around the world in innovations like Citizens’ Assemblies. Of course we need to bring in innovative approaches from other sectors — but science and technology should also be leading the way on innovation in engagement approaches.



APPENDIX 1

About the roundtables

Roundtable 1, Chaired by Professor Dame Ottoline Leyser, Chief Executive of UKRI, Monday 5 February 2024. Summarised by Clio Heslop and Natalia Grzomba, British Science Association.

With thanks to the Chair, and the representatives of the following organisations who took part:

- *Academy of Medical Sciences*
- *BBC Studios*
- *The British Academy*
- *British Science Association*
- *Campaign for Science and Engineering*
- *Centre for Science and Policy*
- *Government Office for Science*
- *Human Fertilisation and Embryology Authority*
- *Involve*
- *London School of Hygiene and Tropical Medicine*
- *Nuffield Council on Bioethics*
- *Royal Institution*
- *Royal Society*
- *The Queens College, Oxford*
- *University College London*
- *We and AI*

Roundtable 2 was a public event titled: 'How can the public help shape our research and policy future?' Attendees included civil servants, researchers and practitioners in public dialogue, plus individuals and representatives of organisations and institutions who had been part of Sciencewise's history and were interested in being part of the future of public dialogue. Their names are protected through GDPR.

APPENDIX 2

Activities and projects mentioned during the discussions

[British Academy Science Trust and Policy project](#)

[BSA Future Forum and Youth Insights](#)

[BSA Ideas Fund and Highlands and Islands Community Grants](#)

[BSA 2024 election manifesto](#)

[Climate Assembly](#)

[Climate Crisis Advisory Group](#)

[Conduct of the GM Nation debate](#)

[Discovery Decade dialogue on society's stake in the research sector](#)

[Ireland citizen assembly on the eighth amendment](#)

[Library of Sciencewise dialogues](#)

[Panel on fair access to pensions](#)

[PCAST Letter on embedding engagement in US Federal Agencies](#)

[Public attitudes to AI tracker survey](#)

[Ri youth summit on AI](#)

[Responsible AI working group on public participation](#)

[Science and Innovation Investment Framework 2004-2014](#)

[Sciencewise dialogue on mitochondrial replacement](#)

[Sciencewise guiding principles](#)

[Sciencewise impact report 2023](#)



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