



NERC

SCIENCE OF THE
ENVIRONMENT

CONSTRUCTING A DIGITAL ENVIRONMENT PUBLIC DIALOGUE EVALUATION REPORT

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Resources
FOR CHANGE

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1. INTRODUCTION

Constructing a Digital Environment is a new NERC programme, all about making use of digital and data technologies and infrastructure to deliver solutions to environmental challenges. It aims to develop the digitally enabled Environment which benefits policymakers, businesses, communities and individuals. sensing-based will happen by creating an integrated network of sensors (in situ and remote sensing-based), methodologies and tools for assessing, analysing, monitoring and forecasting the state of the natural environment. This would support responses to acute events but also inform our understanding of long-term environmental change¹.

NERC has a mission to engage the public with Environmental science and sees public engagement bringing benefits to research by providing a wider perspective on social and ethical implications of that research, and helping NERC make decisions that are relevant to society. In February 2019, they commissioned Hopkins Van Mil (HVM) to design and deliver a Public Dialogue for the Constructing a Digital Environment Programme.

Mike King of Resources for Change (www.r4c.org.uk) was appointed, to undertake an evaluation of the Public Dialogue which took place in April & May 2019.

It was felt that to best understand the likely impact of the Dialogue, some time needed to elapse between NERC receiving the Dialogue report from HVM in June 2019, and its implications being fully understood. This necessitated a two-stage evaluation reporting process:

- ✚ Stage 1: Validity and immediate outcomes of the Dialogue process, the report presented at the same time as the Dialogue report.
- ✚ Stage 2: Understanding the potential impact – updated report to be presented between 3 and 6 months after the Dialogue has been reported, dependent on the client's view as to when NERC's reflection/decision-making process will have produced views and opinions on likely impact.

This report sets out the evaluation findings from Stage 1 and largely focuses on the validity of the Dialogue process. It will be updated in Autumn 2019, then providing a greater focus on outcomes and impact.

¹ <https://nerc.ukri.org/innovation/activities/Environmentaldata/digitalenv/>

2. PUBLIC DIALOGUE

The Public Dialogue was a small-scale trial to test the potential for future, larger dialogic activities and had the following aim, objectives and outcomes²:

2.1. OVERARCHING AIM

To enable NERC to listen and respond to the issues and opportunities raised by members of the public as stakeholders in research, on the topic of Digital Environment.

2.2. OBJECTIVES

- Provide an enjoyable, worthwhile Public Dialogue in which Participants will explore emerging issues and wider possibilities associated with NERC Digital Environment activities through interaction with NERC decision-makers, Environmental scientists, data managers and users and other research stakeholders.
- Identify emerging issues raised by Participants, alongside other relevant stakeholders, for NERC funding priorities that can be fed into the development of future NERC funding calls and events focused on the Digital Environment.
- Demonstrate that NERC listens and responds to a wide range of stakeholders in research, including the public, in a participatory manner on emerging research themes.
- Develop NERC staff capacity and skills to deliver high-quality and relevant Public Dialogue and to develop an understanding of how and where Dialogue can be used as a process to improve NERC science decision making.
- Learn from recent, relevant, successful examples of trialled Public Dialogue, with consideration as to how we can contribute to best practice and become more innovative in the sphere.

2.3. OUTCOMES & IMPACTS

- Having listened to a wider range of stakeholders in a well-informed debate using a participatory approach NERC demonstrates openness, transparency and accountability as a result of the Public Dialogue. Plus:
- NERC research has enhanced relevance and impact, following consultation with the public as stakeholders in research to provide useful insight in shaping, challenging and broadening its thinking.
- Dialogue Participants felt it a positive and worthwhile experience, have enjoyed the opportunity and were able to share their views and ideas on areas of research that affect them, and have had sufficient information following their input.
- Planning excellent communications for Dialogue activities and providing results, learnings and benefits from the Dialogue in a format that can be used and communicated to NERC staff as well as relevant stakeholders including members of the public and NERC researchers.
- NERC staff capacity and skills to deliver high-quality and relevant Public Dialogue are increased, enabling adoption of Dialogue as a process to engage and inform NERC. This includes NERC staff

² Digital Environment Public Dialogue: Briefing Document. NERC 2019

feeling that Public Dialogue is a useful and necessary activity when developing programmes with associated social and ethical issues. NERC staff involved in the project understand how and where Dialogue can be used as a process to improve NERC science decision making, considering it a useful and necessary activity, and they can communicate this to UKRI colleagues.

- The Digital Environment Public Dialogue and evaluation is a current, relevant, successful example of Public Dialogue and NERC can learn from this small-scale trial in future, larger Dialogue activities.

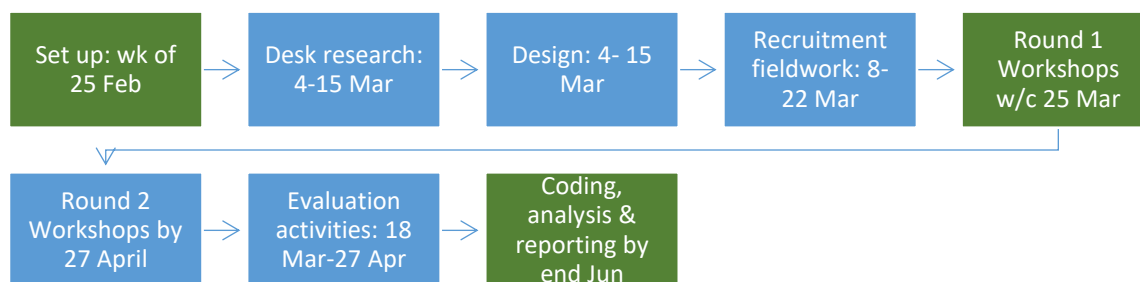
2.4. DIALOGUE DESIGN

To deliver these outcomes the HVM Dialogue Design was based around engaging the public in two locations: London & Swindon. In each location, recruitment of the public targeted a broad demographic in line with the 2011 census for that location and the segmentation used in public insight research. Two Workshops were run in each location with the same members of the public. The Dialogue delivery process is set out in Figure 1 below³.

Workshop 1 introduced them to the topic and helped them relate it to their own lives and locations, while Workshop 2 looked at the implications of the digital environment, what could be achieved and what the public considered to be the priorities.

HVM undertook the analysis and provided a full report from the Dialogue in June 2019.

Figure 1: Dialogue Delivery process



3. EVALUATION METHODOLOGY

3.1. EVALUATION OBJECTIVES

- ✚ To provide a robust and objective evaluation of the Dialogue process to a) validate the methodology and approach as good dialogue practice b) to capture learning that can improve practice in the future. This component of the evaluation will focus on determining if the objectives, as set out in the Public Dialogue brief, for the Dialogue have been met.
- ✚ To develop and provide understanding as to how the desired outcomes and impacts (as outlined in the NERC brief for the Public Dialogue) are being progressed both through the events and post the whole Dialogue process.

³ Hopkins Van Mil proposal

3.2. EVALUATION COMPONENTS

The evaluation methodology has 6 components:

Component	Method
1. Observation at events	To obtain a first-hand objective view as to the validity of the Dialogue process by attending an event in each round, undertaking a structured observation of the process using an Observation Framework – see Appendix 1.
2. Participant questionnaire	To understand what it was like for the Participants to be involved in the Dialogue, in particular, their level of understanding, their ability to participate and what they feel that they have got out of the experience. The questionnaire handed out at the end of each event is contained in Appendix 1.
3. ‘Process’ interviews with members of the NERC Team	To undertake semi-structured confidential telephone interviews with 5 stakeholders (who are to be agreed with the client) soon after the last Dialogue event. These stakeholders are to attend one or ideally more of the Workshops and represent a range of NERC perspectives. The purpose of these interviews is to collect views on the validity and effectiveness of the process and, at that point in time, what they think the longer-term impact might be. Questions will be supplied to the interviewees prior to the interview taking place to aid preparation. The questions for these interviews are set out in Appendix 1.
4. Stage 1 reporting	Reporting on the validity and immediate outcomes using the data from components 1,2,3 above.
5. ‘Impact’ interviews with stakeholders	Second interviews with the original 5 stakeholders to develop an understanding as to progress in achieving the desired outcomes and impact.
6. Stage 2 reporting	Providing an updated Evaluation report using the data from the ‘impact’ interviews.

4. FINDINGS

4.1. WORKSHOP OBSERVATION

The evaluator attended two Workshops: Swindon in Round 1, and London in Round 2.

4.1.1. ACHIEVING OBJECTIVES

In Workshop 1 Participants initially appeared to struggle with the term “Digital Environment. This had been anticipated in terms of the process design, enabling participants to engage with a topic that they were familiar with (local environment) before being introduced to the more complex idea of the “Digital Environment”. In the second workshop, the two elements were effectively brought together as more examples were given, and the focus was on applying “digital” to the “Environment”. The “homework”:

encouraging people to use a number of digital tools, also greatly helped in this respect as it brought the subject to life.

4.1.2. WORKSHOP DESIGN

This was a technical subject and it would have been very easy to have presented it in an over technical way. Both the presenters and the facilitators did a very good job of making the subject accessible to all those present. Nobody appeared to disengage with the subject at any point through the process which would have been the case if they did not understand the subject.

The facilitated small group sessions worked well. In Workshop 1 the Participants responded well to the session mapping local Environmental issues, and in Workshop 2 they were particularly motivated when they had to design a digital Environmental tool using arts & craft materials.

As already stated in 4.1.1. the framing of the topic was perhaps the biggest challenge. What was meant by “digital Environment” and how did it relate to the Participants’ experience? The facilitators had to work hard to keep the “digital” part of the topic in the conversation. Perhaps, in hindsight, a different title for the Dialogue, something along the lines of ‘Exploring the use of digital tools to help solve environmental issues’, might have helped frame the discussion better.

4.1.3. PARTICIPANTS

Participants clearly valued being able to interact with NERC staff. For some, this was the first they had heard of the organisation and they were pleased, and reassured, that the type of research that NERC undertook was going on, as was being funded by the Government.

They engaged well with the subject. For many, it was the first time that they had been asked to think about “digital” and “Environment” together and, although as has already been said, this was initially a challenge, all seemed to go away from Workshop 2 (in London) understanding the links and their implications.

Participants clearly learnt a lot from the process and had lots of questions for the NERC staff about how they could find out more and get more involved. As one Participant said to the evaluator:

“Loving it, so much to learn”

....and another showed the impact that being involved in a Dialogue of this type can have:

“(Since the first Workshop) I have started to discuss these issues with my son (12 years old) and involve him in things like the recycling and we have downloaded some of the Apps which we are doing together”.

4.1.4. NERC INVOLVEMENT

Key messages for NERC tended to focus on the need for better promotion and communication across all that they do, rather than just the Digital Environment. In essence, the Participants liked what they were hearing and would like to hear more.

Comments made at the Workshop by NERC staff suggest that they did not really know what to expect and were pleasantly surprised about the level of engagement from the participants, the quality of the

questions, and the positive and constructive manner in which the Dialogue was conducted. As has already been stated, the NERC staff input was pitched at the right level, providing good content while being accessible to a non-technical audience. This was certainly the case with the verbal presentations but not always backed up by the presentation slides, which sometimes still appeared to be aimed more at an academic audience than the public. They were a bit wordy and the language on some was rather technical. Working closer with the Facilitation Team in reviewing slides and the language used might have helped in this respect.

NERC had invested a lot of staff time in this process and the salient question that comes out of this observation exercise is whether they made the best use of it, in its entirety. In the second Workshop NERC staff largely sat with each other at lunch and in the coffee breaks rather than interacting with the Participants. This seems like a bit of a missed opportunity to continue on the conversation and learn more. In the future, perhaps there needs to be the recognition that Dialogue is the complete process, not just the facilitated sessions.

4.2. PARTICIPANT FEEDBACK

Feedback questionnaires were handed out at the end of all four Workshops, and 48⁴ returns were received from Participants. Twelve statements were provided, and participants were asked to rate their response as Strongly disagree, Tend to disagree, Neither disagree or agree, Tend to agree, Strongly agree. They were also provided with the opportunity to provide comments for each question.

The full question set can be found in Appendix 1, page 22.

The results for all four Workshops combined are provided below and variations between rounds or Workshops are highlighted in the text.

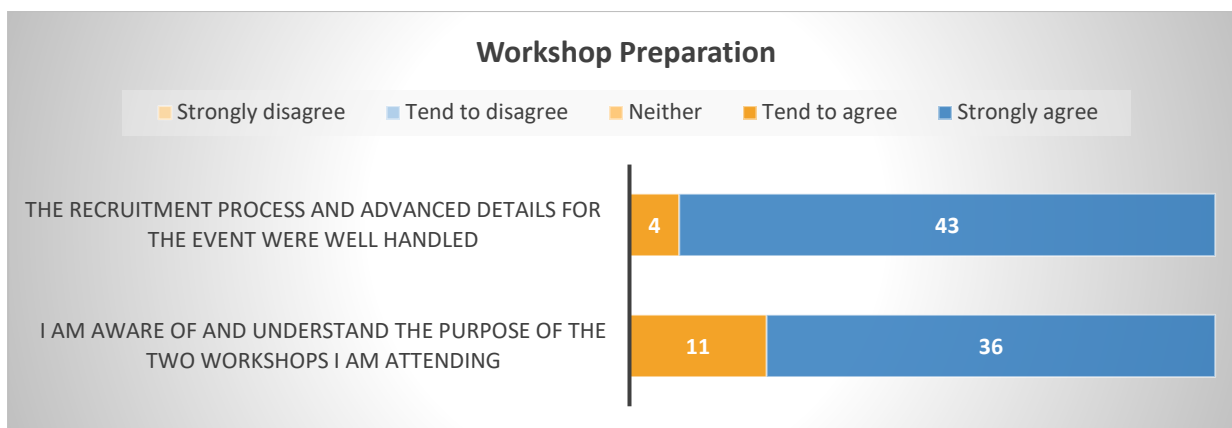
4.2.1. WORKSHOP PREPARATION

Figure 2 shows that Recruitment was clearly handled well with all participants agreeing with the statement. In respect to Participants' awareness of the purpose of the Workshop, although there was still 100% agreement, more "tended to agree" and this was the case from both Workshop 1 and 2. The observations suggested that there was an issue with the level of understanding of the purpose of the Dialogue at the outset, but that this was resolved in the second round. However, these results suggest that there was still some level of doubt in the minds of some Participants (6 in Round 2; 5 in London, 1 in Swindon) as to what the Dialogue was really about.

"I was actually pretty confused about the purpose of the Workshops. I am still slightly unsure what exact outcome NERC are after." London R2

Figure 2: Workshop Preparation

⁴ Please note – not every participant answered every question so the response rates vary.

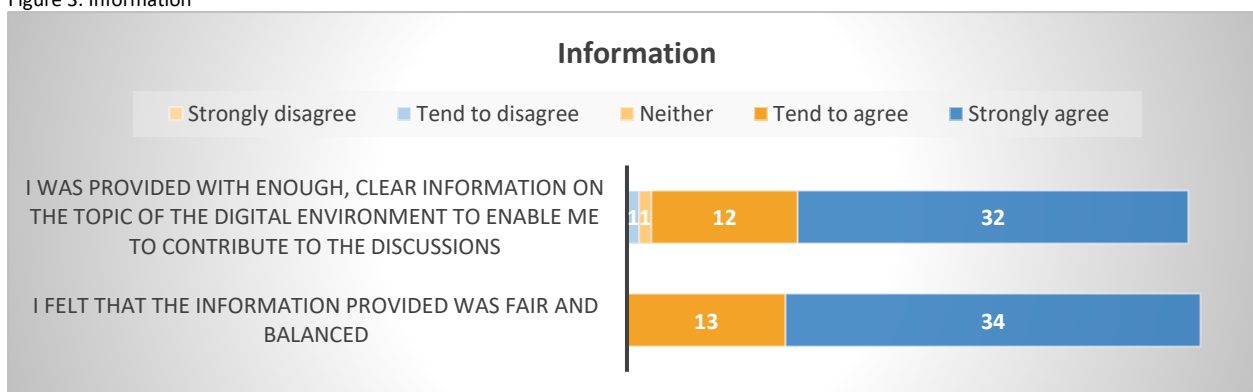


4.2.2. INFORMATION

The majority of the participants were happy with the amount and quality of the information provided. They also all agreed that it was fair and balanced. The small level of disagreement seems to relate again to the understanding of the purpose of the Dialogue, and a suggestion that more could have been done to clarify this prior to the first Workshops.

“The term digital Environment confused me; its meaning in this context only became clear an hour or so into the 1st session. I do think the focus and purpose of the Workshops could have been explained more clearly beforehand so we could have hit the ground running.” London R1

Figure 3: Information



4.2.3. WORKSHOP DESIGN

The most important element of any Dialogue process is that participants felt able to have their say and contribute to the discussion. Clearly, the feedback shows that this was the case, made possible by effective facilitation.

“The facilitators ensured that the event was kept orderly and to time, but also that there was scope for everyone to share their views.” London R1

“Well planned and implemented session. Good balance of talks & presentations with discussion.” Swindon R1

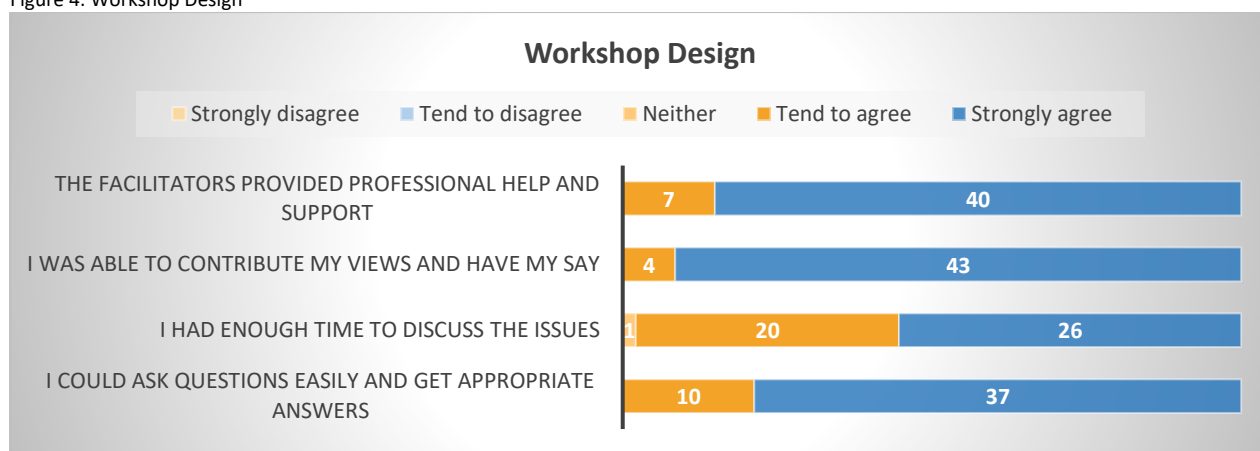
Further feedback that related to the design of the Workshops was all largely positive, perhaps with the exception of that which related to ‘Time’. This largely related to Round 1 which was a 3-hour evening session, and participants felt that they were a bit rushed while appreciating the commitment to finish on time.

“One or two moments where we could have gone on, but we all wanted to leave on time and on balance it was really well handled!” London R1

Even in Round 2 which was a day-long workshop, there was some concern about time, and this seems to relate to some Participants wanting to explore topics in more detail.

“We had a lot of time to discuss things but there were sub-subjects that could have been addressed too.” Swindon R2

Figure 4: Workshop Design



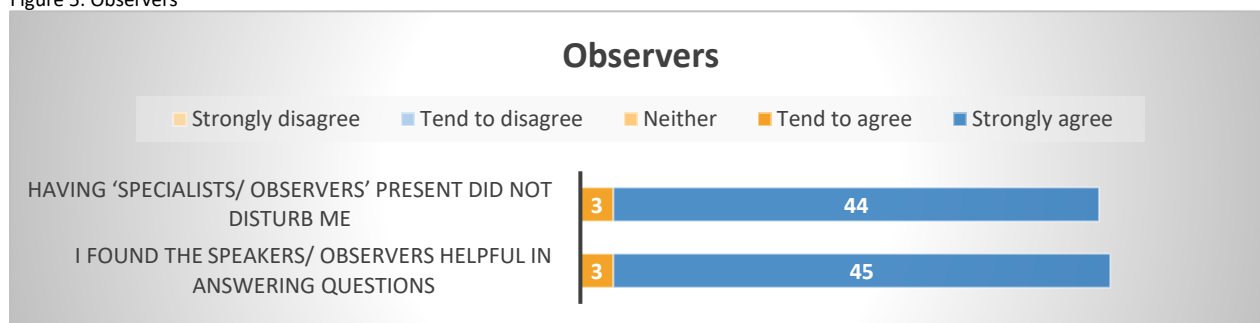
4.2.4. OBSERVERS

Participants were very positive about the role and input from the NERC staff who were observing the sessions. This is not always the case in Dialogues of this type as Observers can be seen as being intrusive, so the NERC team should take credit for creating a positive response.

“It was fun to gain some knowledge of them” London R2

“I loved the input from the representatives from NERC in particular.” Swindon R2

Figure 5: Observers



4.2.5. PARTICIPANT BENEFIT

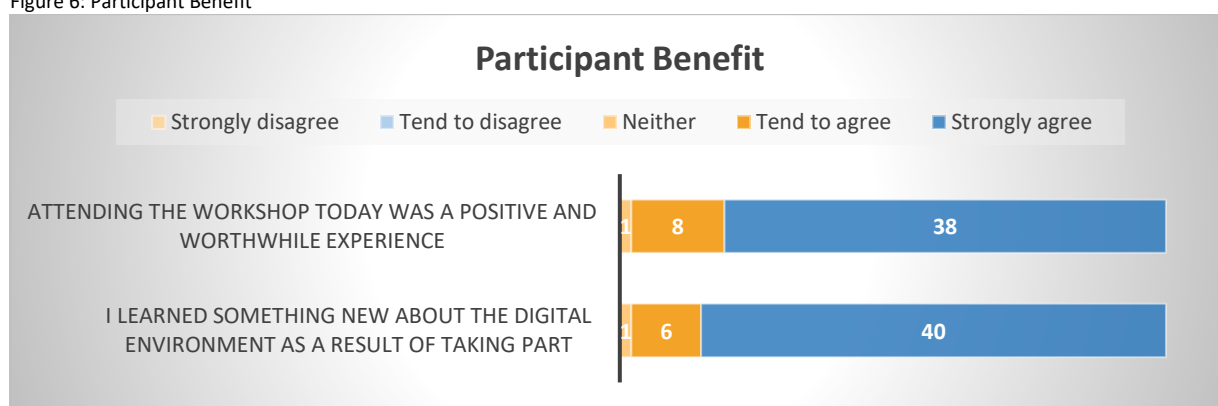
Participants gave up their weekends and evenings to attend this Dialogue and worked hard during the sessions, so it is important to ensure that they have got something out of the process beyond the incentive payment. In this case, Participants were very positive that this Dialogue provided them with a positive and worthwhile experience.

“I had fun and enjoyed my time. I felt that my opinions mattered.” London R2

“Very engaging & informative.” Swindon R1

“I met some interesting people.” Swindon R1

Figure 6: Participant Benefit



Participants were also very positive about what they had learnt. They were asked to identify the ‘main thing that they learnt’, and these are listed in full below. What the list shows is that Participants learnt a lot from the Dialogue process on a wide range of topics. Most of this learning was content-related about the Digital Environment or the Environment in general, but some related to the Dialogue process; learning that ‘one’s voice matters’ and being motivated to continue to ‘extend my knowledge’ is perhaps where the real learning impact lies.

Round 1	Round 2
<i>“The concerns related to the Environment from the UK Government. The session made me see the bigger picture”</i>	<i>“A wider understanding of our Environment”</i>
<i>“That there were available apps”</i>	<i>“Citizen science is a thing”</i>
<i>“About NERC and how their research has helped gain funding for bringing about positive change”</i>	<i>“I have learnt a lot and will continue to extend my knowledge”</i>
<i>“I thought that I knew about the digital environment, but I learnt more”</i>	<i>“How the digital Environment could be formed”</i>

<i>"A NASA website which shows the light pollution"</i>	<i>"What we can do to help in the future"</i>
<i>"The importance and influence of Big Data"</i>	<i>"That this is about digital apps that help in Environmental science"</i>
<i>"The sheer extent of it – it's mind-boggling. There is so much data being processed... so many ambitious and exciting projects... the general public doesn't know what's going on, which is a shame."</i>	<i>"How much NERC contributes to the policy discussion e.g. microbeads"</i>
<i>"I was also very struck by the idea that you can create a duplicate or dummy Environment through digital data and use that to replace our old 'trial and error' process of impacting the Environment – amazing potential for modelling outcomes."</i>	<i>"That changes need to be made to save our Environment"</i>
<i>"It was also great to learn about ways the public can interact with the digital environment and those studying it and to think that ultimately this could allow us to call on the powers that be to take action. A transfer of power?"</i>	<i>"My voice actually matters"</i>
<i>"Since government seems to be behind the curve on a lot of Environmental stuff, a collaboration between the public and scientific communities is a really important development"</i>	

4.3. NERC TEAM INTERVIEWS – STAGE 1

Semi-structured interviews were undertaken with five members of the NERC team, all of whom had been to at least one Workshop and who had a role in developing the Digital Environment programme. The interview questions can be found in Appendix 1, page 26 and the responses are summarised as follows:

4.3.1. STRENGTHS OF THE PUBLIC DIALOGUE PROCESS

- Very well organised event, inclusive and welcoming, enjoyable.
- Recruitment strategy really good - met all the equality and diversity criteria and had people from a wide geographical area.
- Useful opportunity to hear about the public issues and concerns for the Environment and understand that they are similar to NERC's.
- Good to engage over 2 Workshops, the first one was broad-based, this meant that people were not inhibited by the science and felt very able to contribute to the second one.
- Participants learnt about NERC and their feedback was very motivational for NERC Staff.

- The endpoint reached is remarkably conversant with NERC priority areas and strategy.
- Videos and NERC presentations were good.
- Involvement of programme academic and senior NERC staff was good.

4.3.2. WEAKNESSES OF THE PUBLIC DIALOGUE PROCESS

- People struggled to understand what it was all about; perhaps digital Environment is too specific for a Dialogue of this type.
- Room acoustics meant that listening (as Observers) was often difficult.
- A small number of people, question how representative it is.
- The two locations provided some degree of geographical contrast but could be more representative with further sites.
- Very tight timescales to organise events meant not a lot of time to prepare.
- Not enough time at the events to cover ethical issues. Could we have covered more ground quicker?
- Timing is a weakness – where it comes in the programme development cycle, it is too late to influence much.
- Should have been more involvement from senior NERC staff.

4.3.3. SURPRISES FROM THE PROCESS

- Impressed as to how people gelled as a group and worked very respectfully with each other.
- How personal the Environment is for people; talked of in terms of peace, tranquillity, family. Not words scientists use but perhaps should do.
- Reinforced how important ‘language’ is and the need to make it relevant to the public.
- The public saying that they did not know about NERC or what it did!
- The high level of knowledge that the public has about the environment and the importance they attach to it.

4.3.4. KEY LESSONS FROM THE PROCESS

- The public has a lot to offer and they often see things differently which both is refreshing and challenging. Listening to the public perhaps provides a way of achieving change.
- We don’t always have to teach – its important to step back and listen.
- Hard but rewarding to listen and realise that most people don't think in linear ways, this can provide new perspectives.
- Communication about this programme is jargon-heavy.

4.3.5. PROGRESS TOWARDS THE DIALOGUE OUTCOMES

Interviewees were asked to identify early progress towards the stated outcomes. This process will be repeated in stage 2 of the evaluation as these outcomes have a longer timeframe.

Constructing a Digital Environment Public Dialogue Evaluation Report

Outcome	Comments
<p>Having listened to a wider range of stakeholders in a well-informed debate using a participatory approach NERC demonstrates openness, transparency and accountability as a result of the Public Dialogue</p>	<ul style="list-style-type: none"> • Successful Workshops have ensured progress on this. • The NERC team listened and responded. • They learnt about NERC and we learnt a lot about what interests/ concerns them. • NERC demonstrated a willingness to listen to a wider range of views – not all were positive, but all seemed constructive, providing lots to think about.
<p>NERC research has enhanced relevance and impact, following consultation with the public as stakeholders in research to provide useful insight in shaping, challenging and broadening its thinking</p>	<ul style="list-style-type: none"> • NERC priorities and public concerns appear to be closely aligned. • Demonstrated that we can gain insight from this type of engagement. • Reaffirming process – Digital Environment is a relevant programme. • Feedback will help guide the development of the forward programme.
<p>Dialogue Participants felt it a positive and worthwhile experience; have enjoyed the opportunity and were able to share their views and ideas on areas of research that affect them; and have had sufficient information following their input</p>	<ul style="list-style-type: none"> • Everyone appeared to enjoy the opportunity and valued the opportunity. • People came back on a Bank holiday weekend! • The public wants NERC to keep doing what it's doing and thinks it should have more money for doing so!
<p>Planning excellent communications for Dialogue activities and providing results, learnings and benefits from the Dialogue in a format that can be used and communicated to NERC staff, as well as relevant stakeholders including members of the public and NERC researchers</p>	<ul style="list-style-type: none"> • At times it felt a bit generic (about NERC) rather than a specific programme. It would be difficult to build a business case for generic Dialogues. There is a need to get better at framing the Dialogue topic. • Need to think about how best to communicate the findings back to NERC.
<p>NERC staff capacity and skills to deliver high-quality and relevant Public Dialogue is increased, enabling adoption of Dialogue as a process to engage and inform NERC. This includes NERC staff feeling that Public Dialogue is a useful and necessary activity when developing programmes with associated social and ethical issues. NERC staff involved in the</p>	<ul style="list-style-type: none"> • Been a positive experience - left those involved feeling that Public Dialogue is useful. • The format used in the Dialogue was very good, it provides a useful template. • The Dialogue process involved a lot of NERC staff who will have benefitted from the experience.

<p>project understand how and where Dialogue can be used as a process to improve NERC science decision making, considering it a useful and necessary activity, and communicate this to UKRI colleagues</p>	<ul style="list-style-type: none"> • NERC staff involved now need to engage internally to bring colleagues on board with the process.
<p>The Digital Environment Public Dialogue and evaluation is a current, relevant, successful example of Public Dialogue and NERC can learn from this small-scale trial in future, larger Dialogue activities</p>	<ul style="list-style-type: none"> • Digital Environment is going to be massive and it's great that NERC is doing this early on. It would be good to do it again in the future, to see how things have changed. • Public Dialogue could be very useful in horizon scanning and commissioning priority setting. • Need to consider wider representation in future both geographical and social.

4.3.6. WHAT MIGHT CHANGE AS A RESULT OF THIS DIALOGUE?

- Might influence future capital spend.
- This approach needs to be integrated into our programmes and change the way we work.
- The challenge now is how best to convey the idea of Public Dialogue back to the scientific community in a way that gains support.
- A key opportunity is to pull Dialogue outputs into the programme and use it to influence the 'network of experts', and perhaps the forthcoming Demonstrators Call.
- Need to evidence how the Dialogue is impacting the programme's development.

4.4. NERC TEAM INTERVIEWS – STAGE 2

Six months after the Public Dialogue a second round of Semi-structured interviews was undertaken with four members of the NERC team, all of whom had been interviewed at stage 1. This round of interviews endeavoured to identify the emerging impact that the dialogue had on the programme. The interview questions can be found in Appendix 1, page 24 and the responses are summarised as follows:

4.4.1. STRENGTHS OF THE PUBLIC DIALOGUE PROCESS

- Developing a first-hand view of public opinion.
- Good to engage over two workshops, the first one was broad-based, this meant that people were not inhibited by the science and felt very able to contribute to the second one.
- NERC understands more broadly what people think about us and our research, their feedback to NERC staff was very motivational.
- Has led to engagement with other people who are doing public dialogues such as Defra with the potential to develop a community of practice.

- Having the Champions involved has been really good. They are now promoting public dialogue, giving it a bigger voice and taking it forward. Champions give it legacy.

4.4.2. WEAKNESSES FROM THE PUBLIC DIALOGUE PROCESS

- Digital Environment is a complex subject. People struggled in the first session to get their head around it, but this was resolved by the second session. This meant that session 1 was probably more valuable for NERC in general rather than specifically the Digital Environment Team.
- Question as to whether more/ better use could have been made of the observers. Some people found this role quite challenging as they were not allowed to talk much!
- Some concern over its lack of representation, it was a very small sample and therefore statistically weak. Because of this, the approach can be undermined by colleagues.
- Have not had time to go back to participants which is a disappointment
- Did we answer the challenge from the participants - what was the real value of their input?

4.4.3. KEY LESSONS FROM THE PROCESS

- The need to engage the public earlier in the process - at the ideas stage, when the programme is being shaped and certainly before the writing of the announcement of opportunity. This would have meant that the output would have been more relevant.
- Not run it at the right point in the programme, if it had done it a bit later more researchers could be involved.
- Focus on themes rather than programmes. Spend more time on controversial issues on which it would be really interesting/ useful to get the public input.
- Involvement in the process seemed to encourage people to get involved in some of the activities/ using Apps etc. Next time it would be good to build on this to create environmental advocates.

4.4.4. PROGRESS TOWARDS THE DIALOGUE OUTCOMES

Outcome	Comments
Having listened to a wider range of stakeholders in a well-informed debate using a participatory approach NERC demonstrates openness, transparency and accountability as a result of the Public Dialogue	<ul style="list-style-type: none"> • NERC has listened and responded to the public, probably for the first time in this format and it is still being talked about. This is helping to create a more open culture in the organisation. Staff involved in it now have a more open view. This has happened more within the programme than in NERC in general, where some people are less open to approach.
NERC research has enhanced relevance and impact, following consultation with the public as stakeholders in research to provide useful insight in shaping, challenging and broadening its thinking	<ul style="list-style-type: none"> • The process has been reaffirming for the team, helping realise how relevant digital environment is. • Broadened thinking and provided different perspectives rather than providing specific insights

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	<ul style="list-style-type: none"> • Demonstrated lots of potential to be an important way of gathering insights in the future • Interesting that many of the issues the public raised have come forward from the scientist as funding proposals. This is a coincidence but shows that there is a broad understanding of what is important.
<p>Dialogue Participants felt it a positive and worthwhile experience; have enjoyed the opportunity and were able to share their views and ideas on areas of research that affect them; and have had sufficient information following their input</p>	<ul style="list-style-type: none"> • Feedback was very positive • There was an intention to go back to the public and provide them with opportunities to stay involved. This does not seem to have happened.
<p>Planning excellent communications for Dialogue activities and providing results, learnings and benefits from the Dialogue in a format that can be used and communicated to NERC staff, as well as relevant stakeholders including members of the public and NERC researchers</p>	<ul style="list-style-type: none"> • The report is going to be very useful, written in a digestible format. Intend to share with staff and present it at the January 2020 Staff meeting. Champions are taking it to a wider audience, included in all their presentations and workshops
<p>NERC staff capacity and skills to deliver high-quality and relevant Public Dialogue is increased, enabling adoption of Dialogue as a process to engage and inform NERC. This includes NERC staff feeling that Public Dialogue is a useful and necessary activity when developing programmes with associated social and ethical issues. NERC staff involved in the project understand how and where Dialogue can be used as a process to improve NERC science decision making, considering it a useful and necessary activity, and communicate this to UKRI colleagues</p>	<ul style="list-style-type: none"> • Personal development has been considerable. Need to think about how knowledge transfer now occurs • NERC has learnt a lot from doing this. Has informed a lot of future thinking already.
<p>The Digital Environment Public Dialogue and evaluation is a current, relevant, successful example of Public Dialogue and NERC can learn from this small-scale trial in future, larger Dialogue activities</p>	<ul style="list-style-type: none"> • Very current and relevant, viewed as a success by the team but don't know how it is considered by the rest of NERC

4.4.5. PROGRAMME/ ORGANISATIONAL CHANGE

- A network of 26 experts to support the programme have recently been appointed. As a result of the dialogue points to do with public engagement have been factored into the remote of the experts. They now need to demonstrate an interest in and a track record in public engagement, this has become a factor in their selection.
- NERC is now developing a track record in dialogue. Aiming for it to be more integrated but still working out how this will occur.
- The impact has really been about the process of dialogue, it started a conversation in the organisation about how the process can best be used and prospective applicants are showing interest.
- The biggest impact has been internal, on NERC's own staff.
- Champions are more aware of the public thoughts in this space and interest in public involvement has been elevated. Normally get public involvement at the end of the programme (a one-way process about providing information) now interest in a more two-way process earlier on in programme design

4.4.6. PERSONAL CHANGE

- Many of the staff do engagement, but this was real dialogue, which enabled issues to be explored in more depth. Staff identified that it was good to have to listen, rather than to always be in teaching mode. Recognising the importance of 'listening' is perhaps the biggest personal change that has come about through involvement in the dialogue
- Motivated to stay engaged with the public. The approach needs to be integrated into more programmes; this should lead to changes/ developments into the way the organisation works.

4.4.7. OTHER AREAS OF NERC'S WORK WHERE PUBLIC DIALOGUE COULD PLAY AN IMPORTANT ROLE?

- Feedback from those interviewed suggests that there is a lot of interest in NERC needs to continuing with dialogue as there is an opportunity to gain so much from hearing from the public. There is a feeling that NERC should now always do PD for their large SPF programmes - like the one they are now running on Landscape Decisions
- Most areas are relevant - key programmes; Digital environment, Health environment, Productive environment, Resilient environment. Opportunities for formalised public dialogue. Some areas less relevant such as polar science.
- The capacity to do this is limited. Need to build it into bids to government.
- A real and growing interest in Citizen Science - many projects in the current programme reflect that and there is an interest to explore the interface between dialogue and citizen science.

5. CONCLUSIONS

5.1. VALIDATION

The Evaluation research strongly suggests that this was a successful process for all parties involved. NERC’s aspiration was to deliver a successful Public Dialogue on the Digital Environment in line with the ScienceWise “guiding principles for Public Dialogue in science and technology”⁵. It is therefore important to validate the Dialogue against these principles as follows:

ScienceWise principles	Commentary
Context: the conditions leading to the Dialogue process are conducive to the best outcomes	NERC has a clear strategic aspiration, as set out in its Public Engagement Strategy ⁶ , to engage the public with Environmental Science and has identified Public Dialogue as a key mechanism for doing this. This provides the strategic context. A question has emerged through the evaluation as to whether Digital Environment was the right topic or programme on which to base this trial. It presented a challenge of definition for Participants which may have restricted their contribution.
Scope: the range of issues and policy opinions covered in the Dialogue reflects the Participants’ interests	The public was recruited not for their prior interest or knowledge in the subject but because they provided a representative sample of the population in the Dialogue locations, as is standard practice in Public Dialogues of this type. In addition, the recruitment also draws on the Public Insight Report which divided the UK population into five segments which all should be represented within a public dialogue. There was a high level of interest in the subject, as it was made relevant to Participants’ own experiences. Feedback from participants shows that the majority of them were very engaged and learnt a lot from being involved, an opportunity they valued.
Delivery: the Dialogue process itself represents best practice in design and execution	Observation of the process and feedback from Participants, all point to the fact that this Dialogue delivered best practice. People were treated with respect, there was good interaction between the Participants and the Observers, people were given ample opportunity to contribute, the process was fun and engaging and people left with smiles on their faces! The process generated a considerable amount of output material which should contribute to a robust and informative Dialogue report.

⁵ <https://sciencewise.org.uk/wp-content/uploads/2018/09/Sciencewise-Guiding-Principles-August-2018.pdf>

⁶ <https://nerc.ukri.org/about/whatwedo/engage/public/nerc-per-strategy/>

Impact: the Dialogue can deliver the desired outcomes (Impact)	Section 5.2 below provides a commentary on the achievements of the Dialogue objectives. A review of outcomes forms stage 2 of this evaluation.
Evaluation: the process is shown to be robust and contributes to learning	The Dialogue process has been evaluated and section 5.4 below identifies lessons learnt through the delivery of the Dialogue.

5.2. DELIVERING PUBLIC DIALOGUE OBJECTIVES

NERC identified 5 objectives for the Public Dialogue process. Reviewing the evaluation findings enables a view being taken on how well each has been delivered. It should be noted that the commentary provided reflects a snapshot in time, as we are aware that discussions about many elements of the Dialogue are ongoing within NERC.

Objective 1: Provide an enjoyable, worthwhile Public Dialogue in which Participants will explore emerging issues and wider possibilities associated with NERC Digital Environment activities through interaction with NERC decision-makers, Environmental scientists, data managers and users and other research stakeholders:

- This objective has been largely achieved. The feedback from participants showed that they had a worthwhile and enjoyable experience. They particularly valued the interaction with the NERC team, learning not only about the Digital Environment but also about the work of NERC in general. Participants were impressed by what they heard and were very supportive of what NERC was doing and trying to achieve.

Objective 2: Identify emerging issues raised by Participants, alongside other relevant stakeholders, for NERC funding priorities that can be fed into the development of future NERC funding calls and events focused on the Digital Environment:

- This objective has been partially achieved. Participants found the Digital Environment topic quite challenging. It took considerable effort from the NERC team and the facilitators to create a common understanding of the programme and what it was trying to achieve. Participants understood them as separate topics and, in some instances, found it a real challenge to see how and where they came together. Case studies and locally relevant examples helped address the challenge so emerging issues could be identified and prioritised. More value might have been derived if the Dialogue topic had been better framed at the outset.

Objective 3: Demonstrate that NERC listens and responds to a wide range of stakeholders in research, including the public, in a participatory manner on emerging research themes:

- This objective has been partially achieved. NERC demonstrated on the day that its staff listen and respond to the public in a Dialogue situation. Wider stakeholders were not included in this process so part of this objective either has not been met or falls outside the scope of this evaluation. It must also be remembered that the numbers involved in the Dialogue are small and therefore the real impact, in terms of delivering this objective, comes from how the Dialogue experience and results are communicated to a wider audience.

Objective 4: Develop NERC staff capacity and skills to deliver high-quality and relevant Public Dialogue and to develop an understanding of how and where Dialogue can be used as a process to improve NERC science decision-making:

- Largely achieved, although again with a small number of people. NERC staff have been involved in the procurement, planning, delivery and evaluation of the Public Dialogue and, as the interviews have shown, they have learnt a lot from the process. Through having been involved, and having experienced Dialogue at first hand, the team involved having a much clearer idea as to how it can be used to improve NERC science decision-making and have stated aspirations to use it to do so.

Objective 5: Learn from recent, relevant, successful examples of trialled Public Dialogue, with consideration as to how we can contribute to best practice and become more innovative in the sphere:

- By using HVM to design and deliver the Dialogue, NERC has ensured that the process builds upon recent and relevant Dialogues. HVM’s way of working, co-creating the process with the client, has meant that learning and best practice has been transferred and the NERC team can now hopefully see how Dialogue can be used and further developed for the benefit of NERC, its stakeholders and the public. At this stage, this objective can only be described as partially achieved, as we understand that discussions are ongoing in NERC as to the next steps in their development of Public Dialogue.

5.3. OUTCOMES & IMPACT

The review of the dialogue outcomes conducted through two the two evaluation rounds indicates the following in terms of progress towards achieving the desired end results.

Outcome	Comments
Having listened to a wider range of stakeholders in a well-informed debate using a participatory approach NERC demonstrates openness, transparency and accountability as a result of the Public Dialogue	<ul style="list-style-type: none"> • The NERC staff involved listened to the views of the public and found this to be a positive experience both in terms of what they heard but also in the whole process of dialogue which required a move from ‘telling’ to ‘listening’. This has provided a successful model for the way NERC can demonstrate greater openness transparency and accountability in the future.
NERC research has enhanced relevance and impact, following consultation with the public as stakeholders in research to provide useful insight in shaping, challenging and broadening its thinking	<ul style="list-style-type: none"> • The dialogue process has demonstrated that NERC research has relevance to the public as NERC priorities and public concerns were closely aligned. Although the process did affirm the importance and relevance of the Digital Environment programme the feedback broadened thinking by providing different perspectives rather than providing specific insights.
Dialogue Participants felt it a positive and worthwhile experience; have enjoyed the opportunity and were able to share their views	<ul style="list-style-type: none"> • Feedback from the participants was positive, most indicating that they got a lot from the process and some clearly motivated to find out

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<p>and ideas on areas of research that affect them; and have had sufficient information following their input</p>	<p>more and to become more involved. The process has shown that the public is largely unaware of the work of NERC but once they are more informed, they are largely positive and supportive.</p>
<p>Planning excellent communications for Dialogue activities and providing results, learnings and benefits from the Dialogue in a format that can be used and communicated to NERC staff, as well as relevant stakeholders including members of the public and NERC researchers</p>	<ul style="list-style-type: none"> • The Digital Environment Champions are taking the results of the dialogue to a wider audience and report that there is considerable interest in the research community. The dialogue report (including the evaluation report), presented in an accessible format is seen as a key communication mechanism within NERC. It is perhaps too early to determine the impact of delivering this particular outcome as it is largely dependent on the conclusion of the reporting process.
<p>NERC staff capacity and skills to deliver high-quality and relevant Public Dialogue is increased, enabling adoption of Dialogue as a process to engage and inform NERC. This includes NERC staff feeling that Public Dialogue is a useful and necessary activity when developing programmes with associated social and ethical issues. NERC staff involved in the project understand how and where Dialogue can be used as a process to improve NERC science decision making, considering it a useful and necessary activity, and communicate this to UKRI colleagues</p>	<ul style="list-style-type: none"> • This is perhaps the area of greatest impact. Personal development of those NERC staff and programme champions has been considerable but we need to recognise that this is a relatively small number of people so determining how the knowledge transfer now occurs is a key priority. For those involved, there is enthusiasm for taking the approach forward in the organisation and these people now need to act a 'dialogue champions' to help develop it as a 'useful' and 'necessary' activity
<p>The Digital Environment Public Dialogue and evaluation is a current, relevant, successful example of Public Dialogue and NERC can learn from this small-scale trial in future, larger Dialogue activities</p>	<ul style="list-style-type: none"> • The Digital Environment Public dialogue has been viewed as a success by all those involved. There is a recognition that the timing of future dialogues in terms of programme development is important, dialogues need to run earlier in the development process and be more involved in scoping the programme and priority setting. There is also a recognised need to consider wider representation, both geographical and social. This dialogue process has identified the potential for Public Dialogue to be an important mechanism for NERC to expand its public engagement work int the future.

5.4. LESSONS LEARNT

Clearly, from the feedback, the Participants learnt a lot from being involved but what about the learning that has emerged from the planning, design and delivery of the Dialogue process? Four key lessons have been identified by the Evaluator:

- For the NERC team, for whom Dialogue was a relatively new experience, there is a recognition that engaging the public has a lot to offer in helping to develop ideas and thinking. This could have quite a profound impact on NERC. As one of the people interviewed said, *“We don’t always have to teach – it’s important to step back and listen”* which suggests cultural change and a new approach to research planning. What happens next within the organisation will be largely influenced by how it is communicated back into the organisation and the wider NERC community. There is a danger that those that have not experienced it by being involved will not necessarily ‘get’ its potential.
- Another benefit of Public Dialogue for the commissioning organisation is that it ‘holds up a mirror’ on processes and practices and perhaps challenges organisational norms. In this case, it has enabled those involved, in the design and delivery of the Digital Environment programme, see the programme from a different perspective and recognise that there are challenges around its communication related to jargon and technical language.
- When in the programme development cycle should public dialogue take place? It was recognised that the scheduling of this dialogue process quite late in the development of the Digital Environment programme development process meant that its influence over direction and priorities was limited. In this instance, it acted as an affirmation process, which had value but perhaps could have been more valuable if the dialogue took place earlier in the programme development. Dialogue is good for ‘scoping issues’ and ‘shaping direction’ of programmes and plans and less good at providing feedback on detailed plans.
- Topic selection and framing is another key lesson that emerges from the Dialogue. Was the Digital Environment the right topic and, if so, was it framed in the right way? A Dialogue title such as ‘Exploring the use of digital tools to help solve Environmental problems’ as opposed to ‘Constructing a Digital Environment’ might have gone some way to helping Participants better understand at the outset what the Dialogue was about. Engaging Dialogue practitioners earlier on in the planning process might help in this respect.
- ‘Time’ is perhaps another lesson learnt. Participants felt that they would have liked more time, particularly in the first, evening, Workshop. The NERC and facilitation team felt that the preparation time was rushed, and there was also some feedback that the timing of the Dialogue was not best-suited for influencing the decision-making cycles in the organisation. Dialogue planning needs to start early and allow enough time to enable every aspect to function effectively. Issues to do with ‘time’ are also linked to the budget available. The need to spend money in a particular financial year and the overall budget available placed constraints on the dialogue design. An open discussion with the Facilitation Team would help consolidate the learning in this respect.

APPENDIX 1: EVALUATION MATERIALS

WORKSHOP OBSERVATION FORM

Workshop:	
Date:	Comments
Time:	
To what extent has the Workshop delivered its objectives?	
To what extent have Participants been able to engage with the content?	
Have the Workshop activities been appropriate and engaging for the audience / Participants?	
What has worked well during the Workshop?	
What has not worked well during the Workshop?	
To what extent does it seem that the Workshop has been sufficiently resourced (staff, time and money)?	
Have there been any process design or delivery challenges during the Workshop that future Workshops / processes could learn from?	
<p>To what extent is it possible to observe that Participants:</p> <ul style="list-style-type: none"> • Have taken value and benefit from their participation? • Learnt / changed their opinion? 	

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<ul style="list-style-type: none">• Developed confidence in the process and feel that their views will be impactful in developing plans and policy?	
Have there been any unplanned or unexpected outcomes from the Workshop process?	
Any other observation comments / observations?	

PARTICIPANT FEEDBACK

These events are being independently evaluated and to help us in that process we would appreciate you providing your views below.

Please circle one answer for each of the following statements



1	The recruitment process and advance details for the event were well-handled	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
2	I am aware of and understand the purpose of the two Workshops I am attending	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
3	I was provided with enough, clear information on the topic of the Digital Environment to enable me to contribute to the discussions	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
4	I felt that the information provided was fair and balanced	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
5	I could ask questions easily and get appropriate answers	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
6	I found the speakers/ Observers helpful in answering questions	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
7	I had enough time to discuss the issues	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							

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8	I was able to contribute my views and have my say	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
9	The facilitators provided professional help and support	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
10	Having ' specialists/ Observers ' present did not disturb me	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							
11	I learned something new about the Digital Environment as a result of taking part today	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
What was the main thing you learned?							
12	Attending the Workshop today was a positive and worthwhile experience	Strongly Disagree	Tend to Disagree	Neither	Tend to Agree	Strongly Agree	Don't Know
Comments:							

Any other comments you would like to make

Thank you for your time. Please return your form to the HVM organiser

DIGITAL ENVIRONMENT PUBLIC DIALOGUE EVALUATION INTERVIEW QUESTIONS

Thank you for agreeing to be interviewed as part of the evaluation of the Digital Environment Public Dialogue. Set out below are the questions that I would like to ask you. The approach to the interview is a semi-structured one, whereby the questions prompt discussion to draw out important insights.

Questions

1. What has your involvement been with the Digital Environment Public Dialogue?
2. From your perspective what have been the strengths of the Public Dialogue approach?
3. What have been its weaknesses?
4. Have there been any real surprises for you coming out of your involvement?
5. What do you think are the key lessons that have been learnt about being involved with a Dialogue project of this type?
6. Six desired outcomes and impacts for the Digital Environment Public Dialogue have been identified and are listed below. From your experience to date and knowledge of the project, what progress was made towards these:
 - NERC is more open, having listened and responded to a wider range of stakeholders in a participatory manner. NERC has ensured that there is well-informed debate and Dialogue, demonstrating our openness, transparency and accountability, through a more open approach.
 - NERC research has enhanced relevance and impact, following consultation with the public as stakeholders in research to provide useful insight in shaping, challenging and broadening our thinking.
 - The members of the public involved in the Dialogue activity felt it a positive and worthwhile experience, have enjoyed the opportunity, and were able to share their views and ideas on areas of research that affect them, and have had sufficient information following their input.
 - Planning excellent communications for Dialogue activities, and providing results, learnings and benefits from the Dialogue activity in a format that can be used and communicated to NERC staff (including decision-makers), as well as relevant stakeholders, including members of the public and NERC researchers.
 - NERC staff capacity and skills to deliver high-quality and relevant Public Dialogue is increased, enabling adoption of Dialogue as a process to engage and inform NERC. This includes NERC staff feeling that Public Dialogue is a useful and necessary activity when developing programmes with associated social and ethical issues. NERC staff involved in the project understand how and where Dialogue can be used as a process to improve NERC science decision-making, considering it a useful and necessary activity, and communicate this to UKRI colleagues.

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- The Digital Environment Public Dialogue activity and evaluation is a current, relevant, successful example of Public Dialogue, and NERC can learn from this small-scale trial in future, larger Dialogue activities.
7. In your area of work/ responsibility do you think anything will change as a result of the Digital Environment Public Dialogue? If so, what will bring this about?

Thank you

'IMPACT' STAKEHOLDER INTERVIEW QUESTIONS (DRAFT)

Thank you for agreeing to be interviewed again as part of the evaluation of the Digital Environment Public Dialogue. Set out below are the questions that I would like to ask you. The approach to the interview is a semi-structured one, whereby the questions prompt discussion to draw out important insights.

Questions

1. A few months on, what do you now see as the strengths & weaknesses of the Public Dialogue approach?
2. What key lessons will be taken from this process into any future NERC Public Dialogues?
3. Six desired outcomes and impacts for the Digital Environment Public Dialogue were identified at the outset and are listed below. What are your views now on progress to achieving these?
 - NERC is more open, having listened and responded to a wider range of stakeholders in a participatory manner. NERC has ensured that there is well-informed debate and Dialogue, demonstrating our openness, transparency and accountability, through a more open approach.
 - NERC research has enhanced relevance and impact, following consultation with the public as stakeholders in research to provide useful insight in shaping, challenging and broadening our thinking.
 - The members of the public involved in the Dialogue activity felt it a positive and worthwhile experience, have enjoyed the opportunity, and were able to share their views and ideas on areas of research that affect them, and have had sufficient information following their input.
 - Planning excellent communications for Dialogue activities, and providing results, learnings and benefits from the Dialogue activity in a format that can be used and communicated to NERC staff (including decision-makers), as well as relevant stakeholders, including members of the public and NERC researchers.
 - NERC staff capacity and skills to deliver high-quality and relevant Public Dialogue is increased, enabling adoption of Dialogue as a process to engage and inform NERC. This includes NERC staff feeling that Public Dialogue is a useful and necessary activity when developing programmes with associated social and ethical issues. NERC staff involved in the project understand how and where Dialogue can be used as a process to improve NERC science decision-making, considering it a useful and necessary activity, and communicate this to UKRI colleagues.
 - The Digital Environment Public Dialogue activity and evaluation is a current, relevant, successful example of Public Dialogue, and NERC can learn from this small-scale trial in future, larger Dialogue activities.
4. In terms of NERC and the other organisations involved do you think anything has changed as a result of the Digital Environment Public Dialogue? If there has been change what was important in bringing this about?

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5. In your area of work/ responsibility do you think anything has changed as a result of the Digital Environment Public Dialogue? If there has been change, what was important in bringing this about?