John Innes Centre engagement on its proposed Science Strategy 2017-2022: Final Report

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Contents

Executive Summary

- This is the final evaluation report on the dialogue project on the John Innes Centre Science Strategy 2017-2022. The project was commissioned and co-funded by the Biotechnology and Biological Sciences Research Council (BBSRC), co-funded and managed by the John Innes Centre (JIC), and supported by Sciencewise[1].

- The project comprised a number of interrelated elements, including:
- Recruitment of an independent Advisory Group
- Desk research of previous dialogue studies in scientific areas cognate to JIC research to inform the current process
- Consultation by the contractor with the leads of the JIC's Independent Strategic Programmes (ISPs) to discuss strategic issues for JIC
- a Researcher Day involving group discussions with researchers from the JIC (who were encouraged to put forward ideas of what they would like to have raised with the public)
- Face-to-face dialogue workshops in Norwich (involving 17 participants) and Birmingham (involving 15 participants) in March and April 2015. Workshops commenced on a Friday evening and concluded the following Saturday afternoon.
- An online community of 446 participants active from May – July 2015

- We have segmented this executive summary into three discrete yet intersecting parts.

1. Baseline Assessment

- The researchers' day event was held at JIC on 11th February 2015. Over three 2-hour sessions around 50 JIC staff (volunteers to the process) engaged in facilitated discussions. The project was introduced and described to the participants, and their views were sought on key issues to present to the public (for discussion). The three sessions (two of which were recorded) varied slightly in format, but allowed most participants a chance to contribute. The

[1] Sciencewise is the UK's national centre for public dialogue in policy making involving science and technology issues, and is funded by the Department for Business, Innovation and Skills (BIS). See www.sciencewise-erc.org.uk

identification of common problems/ themes across the three sessions suggests that some degree of 'saturation' was achieved.

- As evaluators, we noted a number of minor points in the transmission and collection of information, which was conveyed to the contractors for formative means. However, we are content that the event was a valuable exercise in engaging and informing the JIC community and in helping firm up ideas for the public dialogue events to come.
- Another important element in the project process has been the selection of an Advisory Group, comprising experts from various domains (necessary to provide oversight and ensure a 'fair' framing of the issues). This process has been rather difficult, and might have been aided by a using a more structured and reasoned 'stakeholder matrix' (i.e. identifying exactly what type of stakeholder should be involved, in what proportions, and why). Nevertheless, in spite of various changes, a group with a (we suggest) suitable variety of perspectives has been comprised, and had its first meeting in London on 19th February. Not all members could attend, but non-attendees have been able to email responses, ideas, and commentary to the contractor team (subsequently).
- A number of initial interviews with key stakeholders were also conducted by the evaluation team, in order to get a sense of 'baseline' expectations for the project. Interviews were conducted with three members of the Advisory Group and two of JIC's ISP programme leaders.
- The project was seen as potentially significant (by the interviewees) for inducing culture change, informing communication strategy, demonstrating public accountability, and potentially impacting research competitiveness. Two main potential limitations were identified: the first was that there might only be a limited return for the financial outlay and the second was that lack of public knowledge might limit the usefulness of the public contribution. Anticipated impacts included improved connectivity (with the public), democratic discussions and more impactful researchers and research.
- When asked what they felt the success of the dialogue project would look like, they suggested it would lead to communicating research in ways more sensitive and responsive to public concerns, an increased focus of researchers on the non-academic impact of their research, and generating a science strategy that takes account and reflects the input received from the public dialogue workshops.
- Barriers were seen as the limited number of participants involved and the potential partisanship among this number, and a potential failure for the project's lessons and/or a sustainable model of public engagement to embed or be appropriately regulated.

2. The Dialogue Workshops

- The design process leading up to the dialogue workshops was a lengthy one, with the content undergoing various iterations and the final version sent to the advisory group and subsequently agreed on March 25th (two days before the first dialogue event). The contractor team was clearly concerned, throughout, to ensure that project aims were adhered to, and that information materials were accurate and framed in a neutral manner.
- Each of these events took place over a Friday evening and the main part of the following Saturday. The Norwich event had 17 participants and the Birmingham event had 15 participants (in each case chosen to cover broad demographic categories, e.g. to comprise a range of ages and ethnicities, roughly half male half female, and so on).
- The events were fairly similar, although a number of minor amendments were made to the second event to take account learning from the first. For example, the number of case studies was reduced (from the outset).
- In the evening sessions, the participants were largely introduced to the process, the personnel (contractors, scientists, observers and evaluators), and then the issue of global challenges in food and medicine. A set of six global challenges was discussed in smaller facilitated groups.
- On the next day, participants learned about the science at JIC (with some examples), as well as about genetic modification (GM). The main part of the day involved consideration of case studies on a number of JIC's projects.
- Activities during the two days included presentations (from the senior facilitator and certain JIC scientists), plenary exercises, and exercises carried out in two groups (comprising about half of the participants in each event), during which participants considered printed material on A4 sheets or discussed other questions and gave answers that were recorded on flip charts.
- One exercise required participants to allocate 'dots', representing funding, to the set of considered case studies, to give a sense of research priorities. Another exercise involved participants volunteering principles for how JIC should be run.
- Participants were reimbursed for their time, after completing an evaluation questionnaire.

- Output from the participant discussions was recorded by scribes (one at each table) and through digital recorders.
- All 32 participants (from the two events) completed the evaluation questionnaire. In general, their responses were very positive. Participants received fairly comprehensive information on their roles and task, and all almost all thought that they had sufficient time to discuss the issues that needed to be discussed.
- Participants reported having been highly influenced by the material they received. Around two-thirds indicated that they would now be more likely to get involved in events like this in the future, and roughly half indicated that they were now more likely to talk about the issues from this dialogue event to friends and family and follow news stories on the relevant issues.
- Between half and two-thirds thought that participants' opinions *would* influence JIC strategy, while a slightly greater proportion thought that it *should* influence strategy (only one suggested it should not).
- All participants thought the events were well run, and all were either fairly or very satisfied with the events (perhaps the highest ratings these evaluators have collected for events like this!). Participants particularly appreciated learning about JIC and the work it does, and science in general (especially about GM), although they also appreciated the engagement/dialogue aspects (i.e. meeting and talking to scientists). The majority of participants thought that there were no negatives to the event and could think of no ways to improve it.
- In general, evaluator observations concur with the highly positive assessment of the events made by the participants. Both events were well facilitated, and thanks in part to the personable and approachable manners of the scientists, took place in open and good-natured atmospheres conducive to dialogue. The main topics were thoroughly explored and participant output was diligently and comprehensively recorded through scribes and digital recordings.
- There were a few relatively minor issues that may have affected information translation, such as imbalance of contribution of participants (though this is expected, and the facilitators took steps to ameliorate this where they could) and disruption from external noise (e.g. Birmingham).

- A couple of the exercises did not, perhaps, deliver what was expected, but there was a change in programme between events to take this into account (a positive mark for learning, but we suggest the events should have be piloted prior to the session). Also, some exercises were quite intensive (considering all of the case studies), which seemed to fatigue participants (possibly from information overload) and led to the hurrying through of exercises.
- Several recommendations have been made in the final section of the report, including using piloting and attempting to make things more user-friendly for participants (in various ways).
- In summary, the dialogue events were well run events that were very effective at information communication, having a notable impact on educating and enthusing participants.

3. Global summary

- The project had a number of objectives, set by both the JIC and Sciencewise. The Sciencewise criteria concerned whether the project had achieved the aims of the sponsor (i.e. JIC), plus a number of criteria concerning good process and project impact – as detailed shortly.
- JIC's primary objectives were:

  - To inform the development of the John Innes Centre's proposed Science Strategy for 2017-22

  - To provide members of the public with an opportunity to engage in determining the social, economic and environmental challenges which the JIC Science Strategy 2017-2022 should be aiming to address.

  - To inform the development of a new governance framework and initiatives to support and encourage public dialogue in the JIC in future.
- Alongside this, JIC had a number of secondary objectives, which were:

  - To engage in meaningful conversations with public groups about the research proposed by JIC in the next funding cycle

  - To engage a range of views and values

  - To provide advice which is relevant to JIC

  - To provide JIC with an engagement mechanism and a means of reflecting on public opinion in submission to the next funding cycle and beyond.

  - To embed and encourage a culture of public engagement at JIC

- To demonstrate JIC's commitment to open and transparent strategic planning
- To explore models for further use of public dialogue in JIC's strategic planning activities

- The first Sciencewise criterion concerned (JIC's) project objectives (above) and whether they have been achieved. We concluded that those which could be evaluated had been achieved (particularly those regarding engaging with the public on JIC issues and the setting up of models for doing engagement). Others concerning impact on JIC strategy and the culture of public engagement could not yet be evaluated.
- Regarding the Criterion of Good Practice, the *context* and *scope* of the overall dialogue process seemed to be apt and well achieved, thanks to a multi-strand process involving a 'researcher day', interviews with key JIC scientists, a desk review of dialogue processes and the specific scientific domain, and the involvement of an Advisory Group.
- With respect to the dialogue events, both events were well facilitated, and thanks in part to the personable and approachable manners of the scientists, took place in open and good-natured atmospheres conducive to dialogue. The main topics were thoroughly explored and participant output was diligently and comprehensively recorded through scribes and digital recordings.
- A few relatively minor factors may have affected information translation at the public workshops, such as an imbalance of contributions from participants (though this is expected, and the facilitators took steps to ameliorate this where they could) and disruption from external noise (e.g. Birmingham). There was a change in programme between events to take the effectiveness of exercises into account. Some exercises were quite intensive (considering all of the case studies), which seemed to fatigue participants (possibly from information overload), and led to an imbalance of time spent on exercises.
- The online dialogues showed value in continuing and building upon lines of questioning (in some instance begun with the dialogue workshops) and by offering an opportunity for wider public participation; the archiving of interactions for further reference for both JIC researchers and public participants; and for educational value, in the context of JIC researchers' experiential learning of public engagement via online dialogue.
- The online aspect of the dialogue was just one component of a matrix of activities. We advise that the benefits of online dialogues in general need to be treated with caution, as numbers of public participants were (and are liable to be) relatively modest (although greater than might be expected in face-to-face events), while the quality of online dialogue, specifically its fluency, may be compromised by delays or gaps in postings, causing dialogues to appear 'clunky' and unnatural (a common problem with online processes – see Rowe and Gammack,

2004). Of course, qualitative research does not necessarily require large numbers of participants and is useful in its own right as this project recognised. Larger representative samples may be needed in order to generalise to the 'general public'.

- Regarding the Benefits Criterion, it is noted that this rather overlaps the Impacts Criterion (being positive impacts), i.e. some of the Sciencewise Evaluation Criteria are not independent. Nevertheless, with respect to 'participant satisfaction', there is good evidence that the members of public involved in the project – in both the dialogue events and the online activities – were highly satisfied, thought they had learnt a lot, and had enjoyed taking part. Other stakeholders also evinced a good degree of satisfaction with how the project had progressed, and at various aspects of it (e.g. gaining public views and organisational learning).
- Regarding the Criterion of Good Governance, the project was overseen by a Project Management Team, which included representatives from the different funders, plus the contractors, and was responsible for day-to-day decisions. The project also recruited an Advisory Group that comprised a number of senior figures from a variety of backgrounds – which is generally regarded as good practice. The role of the group was to provide commentary on materials used in the project and other advice, and to ensure there was no particular bias in the framing of materials. This group physically met once and perhaps could have been utilised more fully. We note that while other dialogue projects have Advisory Groups which are 'run' by the client themselves, this group was run by the delivery contractor. Discussions post-project have considered whether 'Advisory Group' was the correct name for this group, as it may have led participants who were familiar with terminology to have a pre-set expectation.
- Regarding the Impacts Criterion, we can provide initial impressions on the basis of interviews with key stakeholders at the end. It will take some time post-project for the full ramifications to emerge.
- Stakeholders identified a number of key impacts: first, whilst the early stages of the project were characterized by a sense of nervousness among JIC researchers in approaching a new, untried and untested form of public engagement (for them), the project in its totality was felt to have provided *important insights into dialogue and the role of dialogue as a part of the JIC's mission*, that constituted organisational learning. Reflecting on the overall impact of the dialogue project, stakeholders stated that it had confirmed a sense of the *legitimacy and usefulness of talking with the public* – that the public are interested in what scientists do – and therefore had confirmed the importance of JIC's 'communication' strategy.

- The project was seen to have specifically revealed that the public were very interested in the kinds of scientific research pursued by JIC and generally positive about this (albeit demonstrating a breadth of opinion on JIC's different research areas). The public were sympathetic about the need to do 'blue skies' research, and did not (on the whole) feel that JIC should only research issues that had an immediate impact on, for example, public health. Furthermore, the public were generally trusting of scientists, and thought that decisions on what precise research to do should lie with them (the experts), notwithstanding a feeling that it was important for the public to at least be kept informed as to what key decisions were being made. Throughout the process, the public participants showed a good capacity to synthesize complex scientific material in the process of making informed decisions.
- Several of the stakeholders, particularly those directly working within the JIC community, suggested that one of the main outcomes to them was that the dialogue process had confirmed the autonomy of researchers in making decisions concerning the scientific process (i.e. the public thought that scientists should largely be responsible for making key decisions, not the public).
- The issue of project legacy, and likely impact on future JIC strategy, was one of uncertainty – but no consensus – among stakeholders. That is, some stakeholders were uncertain about whether the project would lead to culture change within JIC – noting that this could not be determined at present.
- Regarding the Criterion of 'Cost-Benefits' we have little to say, as these issue are difficult to measure and compare. The total budget for the project was £142,000, including £71,000 funding from Sciencewise. In terms of benefits, clearly, the various participants and stakeholders felt something positive had come from the project and its various exercises, but whether those positives were perceived as cost effective is difficult to verify as they were not all aware of the cost of the process in terms of time and resources.
- The report ends with a discussion of 'learning' issues, including a large number of recommendations for how to conduct projects (and evaluations) like this in future. Recommendations address issues such as how to compose an advisory group, how to structure processes such as the dialogue workshops, and so on.

1. Preamble: This report

This is the final evaluation report on the public dialogue to inform the John Innes Centre proposed Science Strategy 2017-2022. The project was commissioned and co-funded by the Biotechnology and

Biological Sciences Research Council (BBSRC), co-funded and managed by the John Innes Centre, and supported by Sciencewise[2].

The project comprised a number of elements, including:

- Recruitment of an independent Advisory Group
- Desk research of previous dialogue studies in scientific areas cognate to JIC research to inform the current process
- Consultation by the contractor with the leads of the JIC's Independent Strategic Programmes (ISPs) to discuss strategic issues for JIC
- a Researcher Day involving group discussions with researchers from the JIC (who were encouraged to put forward ideas of what they would like to have raised with the public)
- Face-to-face dialogue workshops in Norwich (involving 17 participants) and Birmingham (involving 15 participants) in March and April 2015. Workshops commenced on a Friday evening and concluded the following Saturday afternoon.
- An online community of 446 participants active from May – July 2015

In this report we provide commentary on the various objectives of the project, stated in the evaluation tender document. These objectives incorporate a set of specific objectives from the John Innes Centre (JIC) along with additional generic objectives from Sciencewise. The objectives will be dealt with in turn in the following sections, following a brief discussion of the methodology underlying this evaluation.

2. Evaluation Methodology

In the subsequent section, the evaluative commentary on the project objectives is based on evidence that has emerged from various evaluator activities including:

- Documentary analysis (of email streams and project materials);
- Participant questionnaires (from participants at the main engagement activities in Birmingham and Norwich);

[2] Sciencewise is the UK's national centre for public dialogue for policy making involving science and technology issues, and is funded by the Department for Business, Innovation and Skills (BIS). See www.sciencewise-erc.org.uk

- Event observation (of the engagement events and Steering Committee meetings, and also of the online processes);
- Early interviews with significant participants in the process, i.e. three members of the project's independent advisory group (a funding council representative; a plant breeder; and a UK academic with specialist expertise in crop breeding and seed supply, agricultural biodiversity conservation and utilization) and two senior researchers from JIC. Interviews were undertaken by phone and averaged thirty minutes in duration.
- Written feedback from participants of the online community

Following the completion of the contractor's report (delivered November 2015) we collected input from a variety of persons who had in multiple ways direct experience of or had in some way contributed to the dialogue project. The persons interviewed included:

- the *JIC project manager;*
- *three JIC researchers;*
- *one JIC Institute Strategic Programme ISP leader;*
- *the JIC online developer who had overseen the project's online dialogue elements;*
- *three members of the project Advisory Group among whom was a representative from the BBSRC;*
- *the project's Sciencewise Dialogue and Engagement Specialist (DES)*.

Eight interviews, each lasting approximately thirty minutes, were completed with project stakeholders, with written feedback provided by a further two. It is important to note that three of our respondents, who had been directly involved in the dialogue as employees of JIC, were at the point of interview, no longer employees of the Centre. These respondents consequently made explicit reference to being unable to comment on the post-dialogue effects – realized short-term and projected, long-term impacts – to JIC research/engagement practice.

The results from the interviews are arranged throughout this report to talk to the different evaluation criteria.

3. Evaluation Criteria

This section considers the evaluation criteria – as detailed in the tender document - one at a time. Because the various criteria overlap to a degree, much of following discussion is concentrated on

certain criteria that are fairly distinct (e.g. Good Practice, Governance, Impact, Lessons) than others (e.g. Benefits, Cost-Benefits) that are arguably non-independent/ subsumed within others. Most of the recommendations are provided in the final section, which concern the issue of Learning.

3.1 The Objectives Criterion: JIC Project Objectives

The first question asked in the tender document was '***Has the dialogue met its objectives? Were the objectives set the right ones?'*** We refer to this as the '**Objectives Criterion'.** The objectives, as stated on page 3 of the tender document, are divided into three primary and seven secondary category objectives - as illustrated in Figure 1.

Figure 1: Project Objectives

Primary objectives
1. To inform the development of the John Innes Centre's proposed Science Strategy for 2017-22
2. To provide members of the public with an opportunity to engage in determining the social, economic and environmental challenges which the JIC Science Strategy 2017-2022 should be aiming to address.
3. To inform the development of a new governance framework and initiatives to support and encourage public dialogue in the JIC in future.
Secondary objectives
1. To engage in meaningful conversations with public groups about the research proposed by JIC in the next funding cycle
2. To engage a range of views and values
3. To provide advice which is relevant to JIC
4. To provide JIC with an engagement mechanism and a means of reflecting on public opinion in submission to the next funding cycle and beyond.
5. To embed and encourage a culture of public engagement at JIC
6. To demonstrate JIC's commitment to open and transparent strategic planning
7. To explore models for further use of public dialogue in JIC's strategic planning activities

These objectives will be dealt with relatively briefly, as they generally over-lap with the 'Sciencewise' evaluation criteria and - to some extent - with each other.

Of the three Primary Objectives, two (Objectives 1 and 3) relate to rather long-term objectives on which it is difficult to comment at this time. Section 3.5 (on Impacts) provides some commentary on possible future impacts, and we suggest this aspect is revisited – perhaps by BBSRC/ JIC – in six months/a year's time. Primary Objective 2 also speaks to JIC's Science Strategy, emphasizing that the public should be engaged with the relevant challenges facing JIC. Since these challenges were clearly elicited by the contractors from JIC staff (the ISP leaders during interviews, and from staff through the

Researcher Day events), and then used as the basis for discussions in the two public dialogue events, we see that this objective was achieved.

Regarding the seven Secondary Objectives, two (Objectives 1 and 2) speak to engaging with the public about JIC's research – implying a need to present information, collect information, and have conversations. Objective 3 also talks of gaining relevant advice. We take 'relevance' as being issues which can be acknowledged or acted on by JIC. We suggest that public input – from the dialogues and the online processes – was viewed as useful and interesting, though we did not ascertain whether it leads to any new insights (see Section 3.5).

Objective 4 is 'to provide JIC with an engagement mechanism and a means of reflecting on public opinion in submission to the next funding cycle and beyond'. Experience with a new mechanism has been provided; and the online platform that has been developed may provide a second mechanism for future engagement. Section 3.5 discusses the diverse views of stakeholders that the project has led to organisational learning about the public, their views, and the means to engage with them. These processes, and the learning they have inspired, may therefore in future address Objective 7, which talks of exploring 'models for further use of public dialogue in JIC's strategic planning activities'.

Objective 5 concerns embedding and encouraging 'a culture of public engagement at JIC'. As previously, this is an objective that can only be demonstrated with time. However, we note that stakeholders had a range of preliminary views on this: while organisational learning was perceived by some (see Section 3.5), there was also concern that more of the wider JIC research community should have a sustained interest and involvement in the project. There were a number of opportunities for researchers to be engaged with the project, and we understand that the project was designed with a range of activities to reflect the fact that different researchers would probably engage with different aspects. Two of the stakeholders that were close to the organization of the workshops and online dialogues, commented on challenges associated with the difficulty associated with getting JIC researchers involved and incentivized in the process miles away and at weekends/school holidays.

Of course, there is no clear answer on how many researchers needs to be involved, and how deeply, for a project like this to be considered a success. Although some of those we interviewed (above) pointed to specific instances where involving staff was difficult, it is worth emphasizing that *many* members of JIC were involved throughout the process (especially at the initial Researcher Day event). In short, it is unclear whether Objective 5 has, or will be achieved: a good start has been made, but it important that this is built on in future to ensure true culture change.

Finally here, Objective 6 concerned demonstrating 'JIC's commitment to open and transparent strategic planning'. The project has demonstrated a willingness to be open/ transparent about the

organisation's future research plans, with the online platform providing one mechanism where this can be continued in future.

In summary, the project achieved a number of its objectives, and others are still to be determined. The extent to which a culture of public engagement will become embedded within JIC is beyond the scope of this report.

3.2 Good Practice Criterion

Q2 in the tender asked: *Has the dialogue met standards of good practice* (according to Sciencewise guiding principles on issues of *context, scope and delivery* - the two other principles, on impact and evaluation, are covered elsewhere)*? What took place and how credible was the process to the audiences that the results were intended to influence*? We refer to this as the '**Good Practice Criterion**'.

To be more precise, Sciencewise have a number of criteria for good practice, which are:

- that the conditions leading to the dialogue process are conducive to the best outcomes (*Context*);
- that the range of issues and policy opinions covered in the dialogue reflects the participants' interests (*Scope*);
- that the dialogue process itself represents best practice in design and execution (*Delivery*);
- that the dialogue can deliver the desired outcomes (*Impact*);
- that the process is shown to be robust and contributes to learning (*Evaluation*).

These criteria are described in Sciencewise (2013) *The Government's approach to public dialogue on science and technology*. In this section we focus on *context*, *scope* and *delivery*, as *impact* and *evaluation* are separately addressed later. These issues essentially consider the matter of fairness in dialogue, and ensuring there is an absence of bias in various forms, such as in excluding certain information or people, or conducting the dialogue processes in inefficient ways.

We have used various means to assess these issues throughout the project – collecting documentary evidence, conducting interviews with stakeholders, and so on. Importantly, we attended both dialogue workshops as non-participant observers and where we distributed participant questionnaires at the end and attended in person to take notes on the process (unobtrusively) following a pre-specified observation protocol. These instruments (questionnaire and protocol) are informed by our own interpretation of 'good practice' - a normative evaluation framework, based upon 'information

translation' (Horlick-Jones, Rowe and Walls, 2007), which sees engagement processes as information systems, and seeks to assess the quality and nature of information that flows through the system – checking for its comprehensiveness and accuracy (lack of bias). It is important to note that we discussed these instruments with the sponsors before use, and amended them to tweak the questions to ensure that they were appropriate.

The issues of *Context* and *Scope* (along with other issues) were very carefully and thoughtfully approached by the contractors who ensured the context was well-set and wide, notably, to ensure they were sufficiently aware of the key issues that needed to be addressed in the subsequent public debates. They did this through:

- The production of a piece of desk research covering the research issues addressed by JIC;
- Interviews with JIC 'ISP' (Institute Strategic Programme) leaders;
- Running a 'researchers' day' event (at JIC on 11th February 2015), which, over three 2-hour sessions, engaged around 50 JIC staff (volunteers to the process) in facilitated discussions;
- Discussions with an Advisory Group (at physical meetings and also through email exchanges) comprising experts from various domains (necessary to provide oversight and ensure a 'fair' framing of the issues).

We believe these events were useful and well run, with care taken to access literary and personal information from as wide an array of sources as viable in the time available. The researchers' day event, for example, was a valuable exercise in engaging and informing the JIC community and in helping firm up ideas for the public dialogue events to come. The framing of the subsequent debates (and the materials used within them) stemmed from these various sources, with iterations of materials right up to the week of the first event itself, in Norwich.

On the issue of *Delivery* the design process was a lengthy one, with the design undergoing various iterations, with the final version signed off on March 25th (two days before the first dialogue event). The contractor team ensured that project aims were adhered to, and that information materials were accurate and framed in a neutral manner (i.e. *Context* and *Scope* were well-considered).

The Public Dialogue workshops:

- Were attended by a number of the partners as observers (including one evaluator at each event), with several JIC scientists available to answer questions alongside the facilitating staff of the contractor;

- Took place over a Friday evening and the following Saturday (27th-28th March for Norwich; 10th- 11th April for Birmingham);
- Had 17 participants (in Norwich) and 15 participants (in Birmingham), who were recruited on the street by Ipsos MORI recruiters (who used a screener which ensured a variety of demographic groups were represented, roughly half male half female, and that those with a close connection to the subject matter or the JIC were excluded, as well as those declaring strong views for or against the subject matter);
- A qualitative, deliberative approach was considered the best way to allow participants to explore this topic, from both a personal and a citizen perspective. Qualitative methods allow participants the freedom to express the issues that are salient to them and develop their views in the light of discussion and debate. A reconvened approach allowed participants enough time to digest the complex information that they received on the first evening, and reflect on the topic outside of the dialogue environment.
- Were fairly similar - although a number of minor amendments were made to the second event to take account learning from the first e.g. the number of case studies was reduced (from the outset);
- Used the evening sessions to introduce participants to the process and the personnel (contractors, scientists, observers and evaluators), and then to the issue of global challenges in food and medicine (i.e. a set of six global challenges were discussed in smaller facilitated groups);
- Used the next day to engage with participants about the science at JIC (with some examples), as well as about genetic modification (GM), with the main part of the day involving consideration of case studies on a number of JIC's projects;
- Involved a variety of activities over the two days, such as presentations (from the senior facilitator and certain JIC scientists), plenary exercises, and exercises carried out in two groups (comprising about half of the participants in each event), during which participants considered printed material on A4 sheets or discussed other questions and gave answers that were recorded on flip charts;
- Had one exercise that required participants to allocate 'dots', representing funding, to the set of considered case studies, to give a sense of research priorities, and another exercise that involved participants volunteering principles for how JIC should be run.

Output from the participant discussions was recorded by scribes (one at each table) and through digital recorders, while participants provided their views on the process by completing an evaluation questionnaire (after which they were reimbursed for their time). Regarding the process, the 32 respondents (from the two events) were positive. Notably, they indicated that:

- They had received fairly comprehensive information on their roles and task, and almost all thought that they had sufficient time to discuss the issues that needed to be discussed;
- *All* participants thought the events were well run, and *all* were either *fairly* or *very satisfied* with the events (perhaps the highest ratings these evaluators have collected for events like this!);
- The majority thought that there were *no negatives* to the event and could think of no ways to improve it.

In general, evaluator observations concurred with the highly positive assessment of the events made by the participants. Both events were well facilitated, and thanks in part to the personable and approachable manners of the scientists, took place in open and good-natured atmospheres conducive to dialogue. The main topics were thoroughly explored and participant output was diligently and comprehensively recorded through scribes and digital recordings. There were a few relatively minor issues that may have affected information translation, such as an imbalance of contributions from participants (though this is expected, and the facilitators took steps to ameliorate this where they could) and disruption from external noise (e.g. Birmingham). There was a change in programme between events to take the effectiveness of exercises into account. Some exercises were quite intensive (considering all of the case studies), which seemed to fatigue participants (possibly from information overload) and led to the hurrying through of exercises.

In summary, the *dialogue events* were well run and were very effective at information communication, having a notable impact on educating and enthusing participants, and hence we felt the *Delivery* element of the *Criterion of Good Practice* was well met for these.

One further major element of the project is the development and activation of the online JIC presence. An online community as recruited by the contractor – via its online panels – and maintained for a seven week period between May and July 2015. The online community, with a total population of 446 participants and a gender distribution of 52% male and 48% female, was engaged in four ways by the contractor as online moderator/chaperone – not including an initial profiling questionnaire. These activities – which built on the findings of the workshops (providing a source of iterative learning for JIC) - are represented in Figure 2: they included a rapid online question-and-answer session and an attitudinal survey - which asked online community participants to respond to questions concerning

what they considered to be areas of science most interesting/important to society, societal challenges that science might respond to, who the JIC should listen to when strategizing their research programme, how the public might be involved in scientific work, and what were the best methods of communication in building this collaborative/co-operative interface. The other two aspects of the online community were an open question forum, in which participants were invited to pose direct questions to scientists, and online discussion groups, in which participants were encouraged to reflect on the scientific response to global societal challenges; the ethics of scientific research; and the contribution of scientific research to human health.

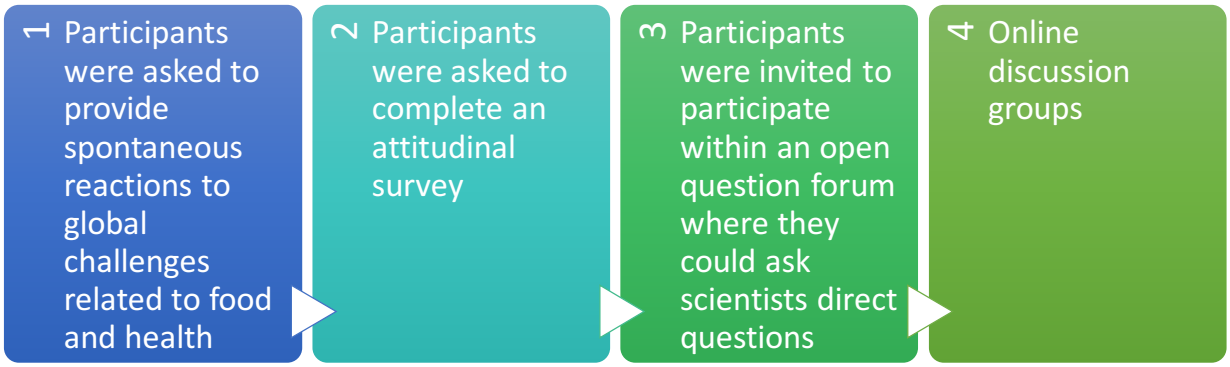

Figure 2: Online community activities

The project's online portal was intended as both an easy-access informational repository – disseminating what JIC does – and a platform for extended dialogical activity, unconstrained by the time and resource limitations of, and social/cultural conventions and dynamics that can inhibit confident and sustained participation in, dialogue workshops. Much in the same way as workshop participants were incentivized by prizes in return for the time they spent, online community members were encouraged to contribute to activities by means of a prize draw; high street vouchers; and on the basis of points accumulated through regular interface resulting in improved user status i.e. bronze, silver, gold.

The online community served not only to extend the reach, inclusivity and, therefore, membership of the JIC dialogue process, by making participation available to a wider community of public stakeholders, and potential public discussants, but allowed further reflection and scrutiny of outputs of the (offline) dialogue workshops, as for instance through two instalments of an online quiz. It also provided more opportunities for JIC researchers to become involved and engaged with the dialogue process. The platform was run on a piece of software called CMTY, set up by Ipsos MORI and is in operation in other projects that they run too.

Our observations of online community activities suggest caution in over-claiming 'extension' and 'diversification' of participation when transferring to online dialogue - where online dialogue is often idealized as a perfect mechanism for democratizing public involvement in science debate (Rowe and Gammack, 2004) - particularly when numbers of public participants remain relatively modest. Similarly, the quality of online dialogue, specifically its fluency, appeared to us - in observing the live web-chats – compromised by delays or gaps in postings, which affected the flow of conversation. None of these of course are the fault of the facilitators, more the inadequacies and limitations *inherent to online dialogue technologies* (Rowe and Gammack, 2004). Notwithstanding, there is a clear value-added dimension to the project's online component, in continuing and building upon lines of questioning – in some instance begun with the dialogue workshops – and by offering an opportunity for wider public participation. The archiving of these interactions is also useful in further revealing public interest/concerns both to JIC researchers and public participants themselves and therefore the materialization of a more genuinely reflexive, dialogue community. Finally, there is a clear educational value, in the context of JIC researchers' experiential learning of public engagement via online dialogue.

In an effort to ascertain the views of the public participants involved within the online community, we distributed, via the contractor and the JIC, a request for feedback. We received text comments returned to us in the form of eight separate e-mail responses - of the total 446 (although nearly half of these only responded to one of the separate activities) a response rate of just 1.8%, and so we must be careful reading too much into this.

The responses we did receive pointed to issues primarily related to problems of navigation and disconnect between participants' expectations and experiences of being involved as online community members. Some - for instance, 'Respondent 2' - spoke of uncertainty about activity 3 and 'ask a scientist'. This particular respondent spoke of not knowing what to ask and of preferring a survey method of interaction:

> I enjoyed the initial part of the community as I felt I was involved, by taking part in surveys, etc. I enjoyed giving my thoughts and opinions about things in the surveys and reading the opinions of other community members too. I liked the idea of the 'Ask a Scientist' sessions but couldn't think of anything to ask, so didn't take part in these. I felt less involved more recently as I was expecting more surveys but these didn't happen. (Respondent 2)

Conversely, 'Respondent 5' spoke of being dis-engaged by the survey approach and consequently pointed to the impossibility of a 'one size fits all' approach to online dialogue, which to our mind the online community was decidedly not, providing as it did three discrete mechanisms of participation:

> I took part in the initial survey, but seemed only to be prompted to ask questions, which I wasn't totally keen to do as I didn't have much knowledge of what you do [John Innes Centre's research). In short I didn't feel "engaged with". (Respondent 5)

However, the variety of participation was disorienting and confusing for some like 'Respondent 1' who stated being unclear of what s/he was being asked to do:

> The website's design, and objectives looked very clearly odd, and confusing. It didn't look like a survey website, and I recall looking at it and asking myself to understand what it said, what it is, where I was and such. (Respondent 1)

Other online community members like 'Respondent 3' stated feeling that the exact purpose of the online community was unclear and lacked the direction that might have been provided by a moderator – a point also repeated by 'Respondent 6':

> It was an interesting experience and it was nice to feel involved in helping the John Innes Centre shape its future. On the whole I thought that the whole idea behind was well conducted. On the negative side I did feel that there was not enough direction given to us. I for one would have liked a moderator to keep us on the "straight and narrow". (Respondent 3)

> I've learned a lot (of) research is needed for us to improve our lives and health. Being given a voice and getting answer has been good. Hearing other points of views and opinions I really enjoyed. I liked taking part in the discussion but I felt that it was not keeping to the topic and should have been controlled better. (Respondent 6)

From our own observations of the 'ask the scientist' session we are aware of the contribution of the contractor in providing steer in the way described by 'Respondent 3' and are concurrently not entirely sure what more could have be done to make this role and therefore 'live' guidance to participants either more explicit and/ or easier to follow/respond to. Notwithstanding, 'Respondent 3' does make a valid point regarding the visibility and active participation of the dialogue moderator/chaperone, specifically in the online social environment, which is without the social scaffolding characteristic of off-line dialogue and face-to-face interactions.

One issue identified by 'Respondent 8' focuses on dialogue quality, specifically what they consider to be a rather limited interface and responsiveness from the online community's scientist members:

> In my short time as a community member, I have seen very little evidence of interaction from the scientists. Most of the posts I have seen have received vague answers from other

> community members, even when the initial post have been on the days when questions are encouraged. (Respondent 8)

In terms of what the online community achieved, respondents stated having enjoyed an opportunity to participate in what 'Respondent 3' described as ' . . . helping the John Innes Centre shape its future'. Others like 'Respondent 4' spoke of the online community providing a 'lively and proactive way' with which to talk and exchange views; a point reiterated by 'Respondent 6' who also identified having learnt the greater value of scientific research:

> It did get people talking to each other and exchanging their views, in what I thought was a lively and proactive way. (Respondent 4)

Other still, such as 'Respondent 7', further talked up the experience of being involved in the online community by referring to how it stimulated further interest both within the science being discussed and the process of online dialogue itself:

> I knew that research took place but up until this community I had only a passing interest now I have more interest in this area – I watched a programme about super foods where research enabled the crossbreeding of the orange and white sweet potato to be grown in Africa benefiting children's health. This community has opened my eyes. I would be very interested in any future online discussions. (Respondent 7)

Thus, evidence pertaining to participants' experience of the online community is distinctly limited and tells us little in the way in which it was experienced by its all participants. However, these few responses do point to some of the inherent difficulties in operationalising online dialogue in general, not least an ability to cater to all needs and preferences. Overall, it is useful to note, as Figure 3 illustrates, what we suggest as challenges as well as opportunities for online dialogue, particularly in the context of the JIC using digital spaces for public engagement in the project's legacy building.

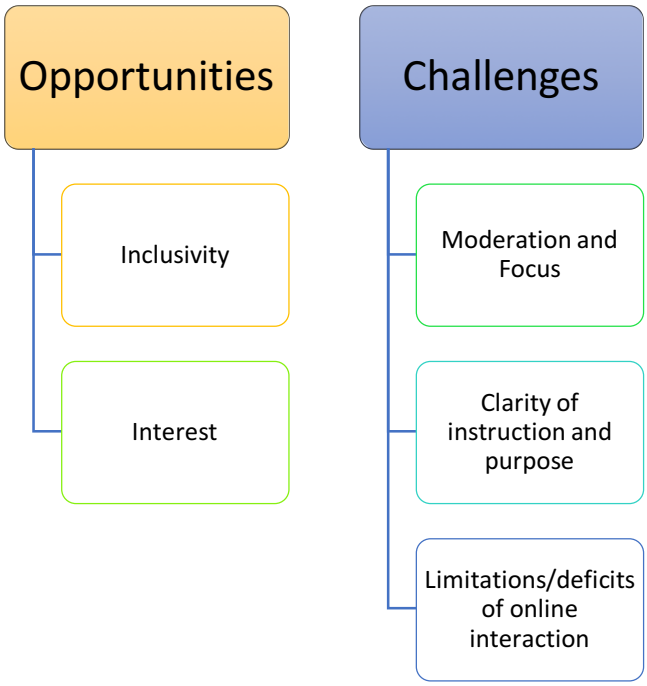

Figure 3: Opportunities and Challenges 1

The online community was a topic of interest to the stakeholders in the final interviews, and they had some interesting perspectives. Indeed, all of the stakeholders were keen to discuss the merits and limitations of the online aspect of the dialogue process. Some spoke of the limitations of the online format precluding *free flowing and continuous dialogue* – of the kind experienced in the face-to-face workshops. Others, however, suggested that in being on-line, anonymous participants might be afforded *greater confidence* and would therefore *be more inclined to ask questions of scientists* than they would in face-to-face/offline context. The online aspects were also seen to be a key tool in boosting the *numerical participation* of public participants and in providing *further contextualization to and confirmation of the responses collected in the dialogue workshops*. Overall, the project's online dimension was seen to be a core feature of the dialogue's *legacy*.

> "There were some interesting questions coming in that we could give answers to. But there was a problem with the period of time, where there weren't so many people logged on so the questions weren't coming back in the hour allocation. It was more difficult to have discussion than it was in the face-to-face session. . . There could be several points that had been misunderstood . . . You don't have that immediate opportunity to have quick responses".

> "While it might be a more difficult format for discussion, it does give you a chance to post up links to supporting information or when people pick up a question to expand on that without

a time-limit. And I think for a lot of people it gives the confidence to ask a question that they might not face-to-face – because of the anonymity I suppose".

"We could explore different ways of doing the online dimensions, perhaps through video streaming. One of the problems we had was that everything came up in one stream. So you could look at better formats for allowing more flow in the online conversations"

"I think that it's been useful for the JIC. It was very much a core part of their [JIC] vision and having a platform that continue on into the future and I think that they've partly got that. In terms of what it's added to the analysis, I think in some places its provided some reassuring confirmation and in others opened up other lines of investigation".

"The 'ask-the-scientist' was incredibly popular . . . I think about 140 questions were asked and it provided us with an opportunity to get more scientists involved than through the face-to-face dialogues. The one thing that didn't really work was the live web-chats. If I was to do it again I'd try and build a sense of community first."

If there was one generic issue regarding the process that was a cause of concern *to some stakeholders* it relates to sample bias and limitations of sample size. That is, *stakeholders* spoke of what they perceived to be an issue of sample size, specifically, the relatively small number of numbers of public participants attending or contributing to the face-to-face and online dialogues and the extent to which their input could be claimed as representative of broader public constituencies. Of course, this is a characteristic of all dialogue exercises (particularly aimed at qualitative research), especially those conducted in off-line contexts, where the behaviour and input associated with workshop members offers only a snap-shot or indication of a general public response. It is also worth noting that Sciencewise Guiding Principles warn that "Public dialogue does not claim to be fully representative, rather it is a group of the public, who, after adequate information, discussion, access to specialists and time to deliberate, form considered advice which gives strong indications of how the public at large feels about certain issues." Further, it is important to point out that the participants were recruited randomly to quotas - the open element was only a small proportion of the total, and those voices were analysed separately.

A few stakeholders, particularly those involved in the face-to-face workshops, aired their concerns about the extent to which the dialogue was an exercise, albeit tacitly or unwittingly, focused on legitimizing JIC research activity by securing public assent and furthermore, that an excess of information provision constricted participant feedback:

"At points I worried about whether we were just bringing them onside rather than just starting a discussion. But my feeling by the end of the day was that we needed to give them some

information to discuss as we started from a null point and then built up information. We tried to be as objective as possible. And I think that did work. I just wondered at times whether we were just feeding them the positive case studies."

"If we had re-run it I would have focused down on a specific topic, simply because we never really had the chance to explore any options."

One other stakeholder spoke of their concern regarding the scientific capital of JIC researchers causing a degree of conservatism among workshop participants or resulting in them being overly-led:

"There's a question in my mind of how much JIC being the science organization that it is – with lots of very passionate scientists – influences what public participants feel they can say and what they contribute".

In summary, the online community processes seemed to be well delivered and to serve a useful purpose for JIC (enabling wider participation and – albeit delayed – responses to public queries). Difficulties with this part of the dialogue largely reflect inherent difficulties with online processes (rather than contractor delivery) i.e. there are limitations in the numbers and types of respondents attracted to take part, and dialogue processes can be stilted. Furthermore, both context and scope of the different activities seemed apt, and calibration of information (provided and sought) is easy to enable because of the flexibility of the online platform itself.

In conclusion, we believe the project has performed well overall on the Criterion of Good Practice over its various elements, with only a few relatively minor issues - although identifying these is also valuable, enabling us to learn from the project (see the Learning Criterion later). It is also certainly fair to conclude that what took place was 'credible… to the audiences that the results were intended to influence'.

3.3 Benefits Criterion

Q3 in the tender asked: *What are the benefits and value of the project, including the extent to which all those involved were satisfied with the dialogue outcomes and process?* We refer to this as the '**Benefits Criterion**'.

This criterion somewhat overlaps with the criterion on 'impacts' (see Section 3.5), as 'benefits' can be seen as positive impacts. We reserve our in-depth discussion on this for that section, and at this point will simply suggest that the Sciencewise evaluation criteria might need to be revisited to ensure the different criteria are truly independent. Regarding the issue of 'satisfaction', however, we did collect

feedback from all 32 participants from the two events and their responses were generally very positive. Notably:

- Participants reported having been highly influenced by the material they received;
- Around two-thirds of participants indicated that they would now be more likely to get involved in events like this in the future, and roughly half indicated that they were now more likely to talk about the issues from this dialogue event to friends and family and follow news stories on the relevant issues;
- Between half and two-thirds thought that participants' opinions *would* influence JIC strategy, while a slightly greater proportion thought that it *should* influence strategy (only one suggested it should not);
- Participants particularly appreciated learning about JIC and the work it does, and science in general (especially about GM), although they also appreciated the engagement/dialogue aspects (i.e. meeting and talking to scientists).

We gained limited information from eight respondents to the online activities (as previously discussed), but these also indicated their general satisfaction.

Without wishing to pre-empt the discussion in Section 3.5, a fair degree of satisfaction was also evinced by the various stakeholders in the process, particularly with respect to:

- Organisational and practice-based learning;
- Learning about the public;
- Implications of public views towards research(er) autonomy.

Having said this, there was also some concern about the extent of researcher buy-in (see Section 3.1). The extent to which JIC strategy has been influenced cannot be told at this stage.

3.4 Good Governance Criterion

Q4 in the tender asked: *How successful has the governance of the project been, including the role of stakeholders, oversight groups, the commissioning body and Sciencewise?* We refer to this as the '**Good Governance Criterion**'.

Throughout the project, we have been careful to keep an audit trail of communications and decisions related to the governance of the project, as well as attending and observing the Advisory Committee meeting (on 19th February). Aside from this, interviews through the project with various relevant

individuals have provided some additional insight into governance efficiency, as well as those interviews carried out at the end of the project.

One issue generally recognised as relevant for good governance is the appointment of an independent advisory group to provide expert oversight and ensure fairness in framing and representing the main issues. The recruitment process, in the instance of this project was rather difficult, with suggestions as to membership made on the basis of people known to the project management team. Naturally, because many of the recommendations were senior people, not all of those invited could take part, while certain imbalances were recognised too, leading to later suggestions. All of this might have been aided by a using a more structured and reasoned 'stakeholder matrix' (i.e. identifying exactly what type of stakeholder should be involved, in what proportions, and why). Furthermore, clearer terms of reference to the exact role of the advisory group and/or a change of title may have mitigated against misconceptions to do with its function. Nevertheless, in spite of various changes, a group with a (we agree) suitable variety of perspectives was comprised. This met in London on 19th February. Not all members could attend, but non-attendees were able to email responses, ideas, and commentary to the contractor team (subsequently). These early discussions were about the rationale for the project and the materials for subsequent activities, including the public dialogue events. Since this time, the role of the Advisory Group has been less apparent, with no further meetings, and the final report being sent in November 2015 with a short time allowed for comments and feedback.

In the final interviews, stakeholders discussed issues of governance and the opportunity for contribution from the advisory group. This was especially noted in the context of being able to feedback into the final report, or rather a lack of time with which to do so:

> "The governance was a little odder than normal. The role of the advisory group was slightly strange".
>
> "I thought the advisory group would have been involved more than they were. I think that could have been a lot tighter. We could have had much better relationships or more in the way of legacy relationships with the advisory group".
>
> "I'm struggling to remember the impact or input of the advisory group into the final report".

One stakeholder who was a member of the advisory group reported feeling that advice had been largely ignored or had not been reflected upon:

> "I spotted and flagged a few places in the report where unexamined assumptions had made it through into the final text – precisely what the text warns can undermine public trust".

In summary, then, governance was aided by the appointment of an advisory group, which seemed reasonably fairly constituted (although the recruitment process was not without difficulties). However, the advisory group was perhaps not fully or effectively utilised. Accepting that logistics (costs, timings) may well have been a problem, it may nevertheless have been valuable to hold a second meeting with this group, to perhaps discuss the major online component or the preliminary results, and it would have also been useful to allow the group more time/opportunity to provide feedback on the results (again, perhaps at a meeting where a presentation could have been made). We do note, however, that the intended role of the advisory group was rather different to the experiences and expectation of its members and our own as evaluators. Specific terms-of-reference and or renaming of the group may have avoided confusions as to the precise role of its members.

3.5 Impact Criterion

Q5 in the tender asked: *What difference / impact has the dialogue made on policy and decisions, on decision making, on organisational learning and change, and on policy makers and others involved including public participants, expert speakers, other stakeholders (e.g. learning, interest in future dialogue), and including relationships with and between stakeholders and public participants)?* We refer to this as the '**Impact Criterion**'.

Assessing 'impacts' is an extremely difficult task, mainly because impacts are often difficult to pin down and may emerge – slowly and nebulously – over the course of many months or years. That is, a perennial problem in evaluating the impact of public dialogues is the period of time required for dialogue impacts to mature. An impact gestation period corresponds to the kinds of impacts discernible in the immediate aftermath of a dialogue project being rather more juvenile or nascent than fully formed and translates, therefore, into evaluators making more speculative rather than authoritative judgements about a project's impact.

Self-evidently, in the context of stakeholder testimonial, reflections on impact are similarly limited. A minimum six-month hiatus between the conclusion of the project and revisiting of its impacts is advisable in determining the extent of organizational learning and change, as noted by several stakeholders in the interviews:

> "In terms of realizing the impacts, we need to come back to this in two to three years' time".
>
> "In terms of whether the dialogue has informed JIC's science strategy, we'll only be able to say in a year or so. In terms of whether it's changed attitudes? Some hearts and minds might have changed. A culture of valuing other views is hopefully a little more embedded".

We have grouped what respondents articulated as project impacts into three categories according to the emergent themes in the interviews: organizational and practice-based learning; learning about the public; learning about future relationships with the public.

3.5.1 Organisational and practice-based learning

Whilst the early stages of the project were characterized by a sense of nervousness among JIC researchers in approaching what, to them, was a new, untried and untested form of public engagement, the project in its totality was felt to have provided important insights into dialogue and the role of dialogue as a part of the JIC's mission:

> "It was something new which we hadn't done before. Internally [within JIC] there was some nervousness about how it would all pan out. But I think the process has given people the opportunity to see what dialogue is and what dialogue isn't. I think that overall it's started to embed how we can listen to and reflect on public opinion internally".

Reflecting on the overall impact of the dialogue project, stakeholders stated that it had confirmed a sense of the *legitimacy* and *usefulness* of talking with the public – that the public are interested in what scientists do – and therefore had provided a springboard to confirming the importance of and ameliorating and/or further developing JIC's 'communication' strategy.

> "I think this will make them [JIC] stop and think when they put their strategies together. They don't have carte blanche just to do great science. There's a social mission that's crying out".

> "The breadth and diversity of views and level of interest were both important for us and also made us feel the exercise was worthwhile and that we're doing something that the majority of people, if they knew more about it, would engage with. And that makes us think that we need more mechanisms to make sure that more people can engage with it and that we change the way think about communications in the future".

> "I think it's opened our eyes to the fact that in the right context people do want to know about what we do and we can make more effort to allow them to know and feedback what they think about it".

Stakeholders spoke of the dialogue as having provided an important space for critical reflection and collective dialogue across the JIC community and a unique opportunity for JIC members to focus and share ideas both on public engagement and the non-academic value of their research. In the latter context, stakeholders stated that the dialogue had also helped to identify what more researchers can do in the terms of their public interface and in more sustainable ways:

> "It was something quite different to discuss and there were a number of opinions expressed that we hadn't really articulated before so that was a very useful exercise in itself and if we can find more ways of doing those things that would help engage the site as a whole with what we should be doing in the way of public display".
>
> "In any site there are going to a lot of people who want to do this sort of thing and spend a great deal of time and effort on it. And then also there are an awful lot of people who don't really think that this is their bag at all. I'm not sure that it's changed that ratio but it did provide a new kind of forum for people to talk about their engagement. That kind of forum is very useful for the exchange of ideas and co-ordination".
>
> "The researchers who were involved in the dialogue at various points – it would have given them food-for-thought in terms of thinking about why they do their research. Broader than that, I would hope that from the dialogue we develop the activities to be more ongoing. We've got a strong PE (public engagement) team but there's more we can do".

Stakeholders also spoke of the dialogue in the terms of capacity and confidence building, particularly in the context of operationalizing and advocating upstream engagement and facilitating a transition to a more positive conceptualization of the public/scientific interface predicated less on scientific apology – a concern especially connected with GM (genetic modification):

> "Has [the dialogue] changed JIC's engagement strategy? It's provided momentum to researchers listening as well as telling".
>
> "It was good to discover credible ways to do this sort of exercise, which I previously didn't know of but now I do. It's helped me think about the ways with which we might ask questions in the future".
>
> "It's quite affected my way with which I talk about science. It definitely gave me confidence to be much more positive than defensive about explaining the work. And actually partly because, we prepared for GM being a big issue, and that's something that I know a lot of scientists get uptight about because they think they're going to get a massive backlash as soon as it's mentioned. But actually GM technology was never really discussed at Birmingham. The biggest for me, was that not everyone is immediately against it. So – the opportunity to go out and talk more positively about it".

Stakeholders also considered the benefits of the dialogue in more instrumental terms and as an experience engendering improved competency among researchers to respond to things such as RCUK pathways to impact statements (mandatory aspects of all research council funding applications):

"I think it probably has increased our competency and certainly our structure in responding to things like pathways to impact statements".

Finally, stakeholders commented on the value of the contractor having undertaken an evidence review of best practice from previous Sciencewise dialogues as a means with which to inform and hopefully influence the project:

"The desk research was pretty good. I think they were able to look at previous dialogues and pull out things that would inform our own dialogue".

"It provided an interesting attempt to evidence best practice from other dialogues".

3.5.2. Learning about the public

As a project that moved a blueprint for public engagement from a model of public dissemination to public dialogue, stakeholders felt that JIC researchers had learnt a lot about the public. The project was seen to have specifically revealed the *extent of public interest in the kinds of scientific research pursued by JIC*; the *breadth of public opinion on the JIC's research areas*; the *publics' expectations of scientists*; and the *capacity of public participants to synthesize complex scientific material in the process of making informed decisions*:

"I was extremely interested in the outcomes of the dialogue. I think they told us a lot of things that we might have suspected but I had not grounds for knowing whether my suspicions were correct or not. One of the main things was the degree of interest that the public had in what we do once they knew about it. That was extremely interesting and comforting in a way".

"I think it's made us realize how interested the public generally is and that it's not true that the vast majority don't care at all".

"They had a very broad view of what it is we should be doing. There were a significant number of people who thought that fundamental inquiry with long-term outcomes was a valid thing to be doing with their money as well as immediate answers to the world's problems".

Stakeholders were especially enthusiastic in describing what they recognized as public endorsement for basic or fundamental or blue-skies science and a public appreciation – or shared public appreciation with scientists – that not all scientific research produces immediate results or positive impacts:

"We didn't know there was such support of fundamental science . . . The perception was that the public would always want us to have an end goal in sight or some kind of way of delivering

science from the lab into consumer benefits but that's not always the case with fundamental science. But actually, we didn't know that the public is really supportive of us doing fundamental bioscience and was actually quite excited about where it could lead without it necessarily producing a defined outcome".

"It was the realization that scientists and the public had more in common with how they viewed fundamental bioscience. Rather than a mandate for 'yes, you're fine, go on', it was more a case of "the public really do value what we value as well". I think the thinking at the beginning was that we need to answer the 'so-what' question on everything that we do and actually we don't need to be so proscriptive about answering the so-what question. The public trust scientists to explore and see where research might lead".

Stakeholders also pointed to the dialogue project providing a conduit to JIC researchers understanding how the public go about making sense of and rationalizing the kinds of science they are involved in. Stakeholders also spoke of their surprise in the manner with which public participants in the dialogue workshops (Norwich and Birmingham) went about a process of deliberation, which was considered to be more logical and rational than emotional:

"I think it was really interesting and useful to see how the public respond – in the first instance – to the societal challenges and the science that's being done but also the way with which they rationalized projects. I think even though ultimately it's not going to change the science that's being done, I think the discussions and understanding how the public discuss and think about these sort of issues was definitely valuable to the way we think about science before we go ahead and do it".

"For the Birmingham group they were very logical and rational in their decision-making and very much focused on risk-benefit analysis, was essentially what they were doing, and I was expecting much more of a heart-based argument. While it was, and there were emotions in play, the discussion was very much a rational one, and that was really quite eye-opening for me".

Others commented on the (translational) efficiency of the deliberative process observed at the two workshops and how the dialogue project had confirmed the feasibility of upstream engagement with complex science:

"I was quite surprised about how quickly – certainly compared to other dialogues which take place over three or four days – the public were able to start talking about some quite esoteric stuff".

> "I don't think it's necessarily an exemplar of public dialogue but it's tested what can be done up-stream. It's re-emphasised the public can engage with quite upstream, complex theoretical science".

Finally, stakeholders commented on a sense of public realism or rather a sense that the public do not expect all scientists to have a widespread knowledge of everything, but that they are interested in scientific process more generally:

> "A legacy from the dialogue is that we know much more now that the public are . . . that they don't mind that we don't research one particular aspect but they know that we're close to the issue and they like to know how scientists think when giving their answers. So while we might not have in-depth knowledge about a specific subject area, actually the public don't mind as much".

3.5.3. Learning about future relationships with the public

A significant insight of the dialogue voiced by stakeholders, particularly those directly working within the JIC community, was that the dialogue process had confirmed that public participants supported the autonomy of researchers in making decisions concerning the scientific process. Stakeholders reflected that *preference of public participants to delegate the responsibility of scientific decision-making to scientists and defer to their greater expertise*. It was not however felt that the public would seek to be disconnected from or isolated from the decision-making process, more that this should be managed by the scientific community itself:

> "As far as the particular pieces of science are concerned I don't think the public want to be or even could be involved in determining what those are and they need to rely on us to work out what those things are".

> "Another thing that came out of it was that the public didn't really want to tell us what to do. What we got of this was not a strong set of opinions of we should do this and not do that but a broad interest and depending on how you framed the questions some things were more interesting or less interesting – but there wasn't a consensus view that we should be asking them what we should do. They liked to be involved and did have opinions but I did have the impression that their level of – let's say for a better word – understanding was such that they felt they couldn't instruct us with what to do and that the onus was on us to do things that were interesting within a framework which meant that we had consider what other things might be useful that challenge what the outcomes were and who the stakeholders were".

3.5.4 Looking to the future: securing legacy

Although we are unable here to specifically comment on the impact on JIC strategy (see also discussion in Section 3.1), the likely legacy, and long-term impact of the project, was an issue of debate, as we now discuss.

First, interviewees reflected back on initial feelings of hope and anticipation, yet also a sense of nervousness at the outset of the project. From the JIC perspective especially, the dialogue was viewed as something they had never previously undertaken and represented a departure from the kinds of public engagement activity they usually committed to. The 'upstream' nature of the dialogue as an event that broadened the dynamics of JIC's public interactions, from scientists simply talking to the public to scientists listening to the public, was felt to have heightened the significance of the project from just 'outreach' and therefore, its potential impact on JIC's research governance:

> "I was initially quite hopeful as it was set-up to create a legacy effect and feed into science governance. The ambition was good".

> "There was a bit of nervousness about where this might lead and what the consequences would be . . ."

In considering the legacy of the project – and what would be necessary in securing this vision – stakeholders reflected on the importance of the dialogue feeding directly into JIC's institute strategic programme (a prospective impact that requires future evaluation) and much of the momentum of the dialogue being channelled into and through an online dialogue platform:

> "The big impact is on our institute strategic programme. So this was the reason we timed this dialogue in the way that we did and our beginning to think about the next five year funding cycle for the BBSRC and we wanted to be able to incorporate public views and public opinions into our science strategy. So the big impact is that public views are going to be considered as part of the application for our next funding cycle".

> "The legacy aspect is an interesting one. I'd envisaged at the beginning that the online aspect of the dialogue would essentially provide the framework of how we listen at JIC. And I think we still need to work this up some more but I still think this is the way that we might be able to engage most effectively . . . The time taken to do the online work was more than we thought it would be. So I need to redesign that legacy aspect so that we can ensure that more people can get involved internally in a more straight-forward way".

However, one stakeholder provided a leaner prognosis of the project's longer term impact and argued that dialogue/engagement activity at JIC would remain secondary in a hierarchy of research priorities and where the primary objective and concern among researchers is in the generation of grant income or publishable (peer-review and high-impact) outputs:

> "I don't really think this will affect much of what JIC does ultimately because the project leaders will do what they can get grant money for . . . It's just not culturally embedded . . . the number one concern is how much research money can I get.

In the context, thereafter, of what stakeholders thought would further improve the dialogue process or what they might do differently a second time around recommendations focused on lead-in time and securing the requisite plurality in researchers participating:

> "I think the online dialogue – we could plan that further in advance. We could get more people involved in a more structured way. I'm not sure how many people even knew that it was going on".
>
> "We could make sure before we started that we have a cross-section of people [JIC researchers] willing to take part in the exercise and we didn't do that".
>
> "The usual suspects volunteered for it. We could have had a much wider sweep with much more emphasis on what rewards people might get out of it and the importance of it".

In conclusion, stakeholders were able to report upon a number of positive impacts derived from the experience of having undertaken the dialogue project. Most of these related to new intelligence and competencies gained from the dialogue experience.

3.6 Costs-Benefits Criterion

Question 6 asked: *What was the balance overall of the costs and benefits of the dialogue (basic costs compared to benefits, including potential future costs saved)?* We refer to this as the '**Costs-Benefits Criterion'.**

Assessing costs versus benefits is difficult, as there is no commonly accepted equation or calculus for trading off costs and benefits - which are often of different *types*. That is, costs may be counted largely in terms of financial and human (person-hour) costs, while benefits are often intangible – being human and organisational opinion, policy changes, and so on.

The total budget for the project was £142,000; including £71,000 co-funding from Sciencewise. In terms of what the project set out to deliver it succeeded and therefore might be adjudged to be money

well spent. Although there were clear short-term benefits for public participants and JIC, at this moment in time - given uncertainty about the medium to long term benefits - we find the assessment of costs versus benefits almost impossible to address (as did *all* those we spoke to as immediate stakeholders) and so will not do so here. Even comparing the costs of this exercise to the cost of others is fraught with difficulty, given the nature of relative benefits from different projects. If we had any recommendation about this issue it would be to request Sciencewise establish a standard template for all projects it co-funds specifying the nature of aspects and activities that should be included on both the costs and benefits side of a ledger (and metrics for recording the different types of information).

3.7 Learning Criterion

Question 7 asked: *What are the lessons for the future (including what worked well and less well)?* We refer to this as the **'Learning Criterion'**. This criterion differs conceptually from the others: it is less about meeting a standard or target, and more about summarising lessons learnt throughout (regarding the other criteria).

In terms of 'what worked well', many of the *process* aspects as well as the *design* overall could be cited (see, especially, the section on 'Good Practice'). That is, the overall design seems a good template for projects like this, beginning with a thorough acclimatisation of the contractors with the problems and issues of the sponsors (establishing their aims), the information that needed to be communicated to the public (during engagement processes), and the information that needed to be sought from the public (to answer sponsor questions). The multi-strand approach should therefore be commended, with information gained via interviews with key staff, desk research, a 'public listening' exercise, and a one-day event involving many of the sponsor institute's staff. On top of this, the presence of an advisory board was important, to add credibility, alternative perspectives and oversight. Beyond this, the public dialogue events used were fairly standard (a sign that they are an accepted/ appreciative mechanism to achieve public engagement), and the online activities that followed allowed for the use of modern media and *potential* project continuity, particularly the ability to follow up on issues raised in the dialogue and others emerging subsequently. The major events themselves were generally run well, with high professionalism (see section 3.2).

Learning does, however, seem to be enhanced more by consideration of where things worked less-well, than where they worked well, so we have more to say on the latter. In discussing the following, and stating recommendations that may be seen as learning outcomes, this needs to be put in

perspective: the following were relatively minor issues in a project that, at least in terms of *process*, was very well done.

So, what worked less well and might be improved? We summarise findings here related to the most significant criteria/issues. One thing crucial to note is that these recommendations do not imply that there were 'flaws' in the project: they are based on both good and less-good practice in the project!

Regarding 'Objectives':

- Ensuring a consistent and coherent set of objectives, understood by all relevant parties, is crucial (we make this as a general point of all projects!). Our analysis of the JIC's objectives shows a degree of overlap and some vagueness, which meant that important time was spent early in the project trying the ensure mutual understanding and in determining the appropriate framing of the project to both JIC scientists (in the Researcher Day event) and to the public (revealed in the negotiations on how to cast the project to the public in the dialogue events). Of course, this negotiation process can be a good thing, helping all those involved to clarify their thinking, and enabling an iterative process in which, for example, scientific accuracy and understandings can be checked. The issue in the latter case is more one of timing: expect things to take longer than you think (in psychology the term 'planning fallacy' is given to the general tendency of projects to cost more and take longer than planned, as people find it hard to predict all mitigating factors).

Regarding 'Good Practice':

- First, we would recommend piloting important processes wherever possible – processes such as the public dialogues or the researcher day event. This does not mean running a whole process in one go, but rather, using small samples of participants (if possible, otherwise volunteers or colleagues if not) to test out the individual exercises. Such a process would likely have revealed that one or two of the exercises in the dialogues were difficult and would have given a clearer idea of timings (and would likely have revealed the impossibility of using 10 case studies in that particular exercise). Consequently, the first event acted as something of a pilot, being amended in time for the second. We must say, from our experience, that this absence of piloting is the norm for engagement exercises – and we would recommend future dialogues have a degree of 'pilot' built in.
- Attention needs to be paid to the structure of events, using variety to prevent boredom and loss of interest. Though generally good, the dialogue events, for example, might have benefited from some more energizing sessions, or opportunities for participants to get on

their feet as some of the exercises were lengthy, leading to a certain observed restlessness and fatigue among participants.

- We would also suggest more in the way of visual signposting in engagement events. An illustrative road-map for instance would be helpful in providing participants a clear sense of the sequence of tasks and their inter-relatedness. There was on occasion a lack of clarity in the dialogues as to why participants were being asked to do certain things and their exact relevance to the overall purpose of the workshop. We would recommend more, then, in the way of simple and succinct reminders and prompts about what participants have done and what they are yet to do.

- Care should be taken to make events as user-friendly as possible. For example, legibility of responses might be enhanced in dialogue events (and indeed, in an event such as the 'Researchers' Day') using large post-its and marker pens, and requesting/using capitalised writing on the post-its and flip charts, just to ensure all material is as readable as possible to all. Other ways of making the events more user-friendly might be tried too: for example, in the Norwich dialogue, the scientist gave his presentation from written notes, when a powerpoint presentation would have been more visual. Also, some of the questions that the facilitators were asking for the different exercises in the dialogues might have been printed on cards for distribution to participants to concentrate their thinking as appropriate.

- Relatedly, attention should be paid to the collecting of information, with audio or video recording considered wherever possible (as was done by the contractors), to ensure maximal fidelity. Notes by rapporteurs, or scribbled responses on whiteboards, may miss important facets of information – rationales, tone, and so on.

- There are also lessons from the online community: it is important to provide explicit and clear instructions to participants, and to consider the time/effort of managing and moderating these processes (which may take longer than one thinks).

- Finally, we believe the online community has demonstrated the qualitative difference between an off-line and on-line public interface: that is, there are comparative limitations in achieving broad and deep dialogue in on-line approaches as discussions are often asynchronous (delays between input) and unnatural-feeling. Nevertheless, online approaches have the capacity to engage people who are geographically remote (they don't all need to be in the same place at the same time), and do not require immediate responses, allowing time to think before answering. (The pros and cons of online approaches generally have been researched and discussed elsewhere, e.g. Rowe and Gammack, 2004.)

- The issue of 'sample size' and thus representativeness of public opinion is a difficult one. Most engagement processes involve a relatively small number of people, because of the need to first provide them with information on a topic about which they may know little, then involve them in lengthy conversations – which is time consuming. Online processes can potentially access more people, but often their representativeness is difficult to confirm, particularly if access is open, and so some biases will be inevitable (which is NOT to criticise the current project, in which only a small proportion of the online participants came through an open process and most were recruited randomly to quotas; this is a more general word of warning about online processes). Our key recommendation is that the nature of participants is collected/ recorded (*as was done here*) so that the type of 'bias' – if any - can be acknowledged up front, and indeed, point to the nature of under-represented participants who might then be more purposefully sought. Nevertheless, the relatively small numbers involved can make other stakeholders uncomfortable about accepting their opinions (especially if against a stakeholder's own well-held opinion) and lead to them dismissing the output. (As one of the commenters on a draft of this report noted, 'this is an issue of misunderstanding of the nature of the process rather than a flaw in the process'. Our general experience is that this may indeed be a case of 'misunderstanding'; unfortunately, it may also be a more deliberate and political response, which should be borne in mind.)

Regarding 'Good Governance':

- We have noted that the selection process for the Advisory Group might have been better informed by a stakeholder analysis (as was suggested by one of the management group members).
- We would also suggest involving such a group more fully in the process – perhaps by having a second meeting at a significant stage of the project (e.g. in this case, either before the online component was fully operationalised, or when preliminary results were available and feedback could be provided for incorporation into the final report).

Regarding 'Impact':

- Medium-to-long-term impacts are impossible to establish in a conventional approach to project commissioning. To establish impact, it is necessary to revisit the project scenario at a later time – e.g. after six months, and perhaps again after twelve months. We would advocate having such a possibility written into such projects, with evaluation activities specified and costed *a priori*, leading to short update reports. Only through such a process can 'impacts' be potentially proven.

Regarding 'Costs-Benefits':

- We have found this difficult to analyse and would propose that Sciencewise develop a standard template for projects in which key 'benefits' and 'costs' are identified and specific metrics are advocated.

4. Summary

Interviews with key stakeholders have provided initial impressions of the project and its accomplishment – though ultimately cannot answer some of the longer-reaching questions about impact. Regarding those objectives, and those criteria, that we can address, the findings in this report are largely positive: in many ways, the project followed a structure of activities that is becoming common (for the good reason that they have been demonstrated to work). The different exercises were generally well conducted, and where this was not the case the reason has stemmed from contextual, structural and logistical constraints rather than from faulty implementation e.g. in terms of the numbers of people who can be practically recruited, the time available for complex dialogue processes, etc. Most participants involved – be they members of the public, or stakeholders – were satisfied to a greater or lesser extent. However, the issue of ultimate impact remains undetermined, and cannot be established within the timescale of this evaluation.

5. References

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