

# **Learning Review for Ecosystems Services for Poverty Alleviation (ESPA)**

**Prepared by  
Laura R. Meagher, PhD  
Technology Development Group  
and  
Catherine Lyall, PhD  
Information Browser Ltd**

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## EXECUTIVE SUMMARY

This Learning Review of the Ecosystems Services for Poverty Alleviation initiative (ESPA) approach to interdisciplinary review processes was conducted at the request of the ESPA Directorate and Programme Executive Board.

The intention was to share lessons internally and externally, including with funders. This review focused on two key aspects:

- How the application and review process for ESPA-funded projects may have supported and shaped the type of interdisciplinary research funded
- How the process compares to other programmes and what lessons can be learnt that may support future interdisciplinary research programmes.

To this end, a Framework of Core Questions was addressed using a set of methods including: document analysis, semi-structured interviews of individuals involved with ESPA in various ways and of panel reviewers/chairs; rapid-fire focus groups with 2012 projects at their launching conference in summer 2013; and two related surveys, of awardholders and of reviewers.

Key Findings and Issues are presented and discussed. These are followed by reflections on learning from international programmes and from ESPA, leading to Conclusions and Recommendations, which can be summarised as follows:

### Conclusions regarding ESPA's Review Processes

- 1) ESPA has been an ambitious attempt to simultaneously carve out a new conceptual niche of excellent research and to promote new ways of working (in particular via interdisciplinarity), with a firm orientation toward addressing complex, pressing world problems through identified pathways to impact. This combination of goals has created challenges for review processes in the selection of research projects.
- 2) In effect, ESPA has served as an experiment in review processes for interdisciplinary research. Examination of experiences and insights from ESPA's several phases<sup>1</sup> can thus inform a critical inflection point which has often been a severe obstacle to the pursuit of high quality interdisciplinary research.
- 3) The experiences of the 2011 ESPA review process, in particular, throw into sharp relief various problems that can stifle interdisciplinarity, for example:
  - (i) differing views among co-funders
  - (ii) lack of clarity as to desired definition or weighting of interdisciplinarity in calls for proposals and other guidance
  - (iii) use of numerous reviewers not fully informed or comfortable with the programme's interdisciplinary goals
  - (iv) an overburdened, over-large review panel trying to tackle synthetic deliberations of research excellence, interdisciplinarity and impact in the face of numerous lengthy proposals.
- 4) The ESPA programme has evolved over time, commendably learning lessons to improve its review processes (e.g. from the Directorate's 2012 report) and thus offer

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<sup>1</sup> ESPA's phases include the initial Strengthening Research Capacity grants, Partnership and Project Development Grants, Framework Grants and the 2011, 2012, and 2013 waves of funding.

good practices. In contrast to the 2011 experience, a central example is the 2012 introduction of a staged process, so that expressions of interest can be sifted to a manageable number of proposals with a realistic fit to the programme's goals. With this staging has come interaction so that, through workshops, discussions with the director and so on, applicants increase their understanding of the programme's criteria. Another key improvement has been the enhancement of preparation, for peer reviewers but particularly for review panel members, in the form of guidance materials, presentations and a mock panel session prior to deliberations. Through the cumulative effect of the framing of calls, the training of reviewers, the review processes and the funding and implementation of selected research projects, with help and facilitation of linkages from the Directorate, a community is maturing in a new research theme.

- 5) Concerns expressed by some that the 2013 process was hurried, with an overly general call making it more difficult to distinguish among proposals, underscore the lesson learned as to the fundamental importance of taking time to ensure clarity in framing criteria from the start.
- 6) Future funders of interdisciplinary initiatives can learn lessons from ESPA as they design and implement review processes. In their own review panels, they might in addition take advantage of experiences gained by ESPA researchers and panel reviewers who have shown themselves to be capable of thinking widely yet critically about interdisciplinary research.

### **Recommendations for Future Funders in Evaluating Interdisciplinarity**

- **Clarity of Expectations**  
*Funders need to communicate clearly their expectations for interdisciplinarity to applicants, peer reviewers and panel reviewers.*
- **Management of the Review Process**  
*Funders need to structure and manage the overall review process appropriately for the complexity of interdisciplinary (and potentially impact-generating) research programmes.*
- **Composition and Preparation of Review Panels**  
*Funders need to pay particular attention to the review panel stage, as it is here that the crux of interdisciplinary proposal evaluation occurs.*
- **Awareness of the Challenges of Interdisciplinarity**  
*Funders need to appreciate that interdisciplinary research is challenging.*
- **Learning and Adapting**  
*Funders need to be willing to learn and adapt throughout the life of a programme promoting interdisciplinary research.*

# INTRODUCTION

## Background of the ESPA Scheme

As described on its website<sup>2</sup>, Ecosystem Services for Poverty Alleviation (ESPA) “is a seven year, £40 million research programme funded by DFID, ESRC and NERC to provide new knowledge demonstrating how ecosystem services can reduce poverty and enhance well-being for the world’s poor”. It was developed through a 2006-2009 design and consultation phase which, along with focus groups, workshops, etc, included eleven “Strengthening of Research Capacity” projects. Implementation of ESPA began in 2009, when twenty-eight Partnership & Programme Development grants and some eighteen short-term Framework grants were awarded. The Directorate began operating in September 2010, just before the call was published for the three major Research Consortia grants awarded in 2011. Subsequently, in response to the 2012 call, another set of six grants (up to three years duration, £1-2M) were awarded, launching in the summer of 2013. The subsequent 2013 round of awards (£200-500K for 24-30 months) has recently been decided, with eleven approved<sup>3</sup>.

Given the new conceptual niche aligning ecosystem services with poverty alleviation, and the intent to contribute to highly complex problems facing international development, the programme has throughout its lifetime aimed to be innovative. A key dimension of this has been emphasis on interdisciplinarity, with integration across problem framing, approaches, methods and types of data seen as crucial to tackling complexity: for example, guidance to panellists judging 2012 proposals highlighted interdisciplinarity:

*“...ESPA is an international programme funding cutting-edge interdisciplinary research generating new primary data and knowledge to enhance global understanding of how ecosystems function and provide services that contribute to human well-being, poverty alleviation and sustainable growth that benefits the poor. .... This call for ESPA 2012 Grants provides an opportunity for the world’s best researchers to collaborate in interdisciplinary teams linking their research excellence to potential development impact intended to benefit poor people in low income countries.”*

## Objectives of this Review

The objectives of this study were to conduct a mid-course Learning Review of ESPA’s interdisciplinary approach in terms of review processes and to share lessons internally and externally, including with funders. This review focused on two key aspects:

1. How the application and review process for ESPA-funded projects may have supported and shaped the type of interdisciplinary research funded
2. How the process compares to other programmes and what lessons can be learnt that may support future interdisciplinary research programmes

The foci for exploration included:

- an assessment of the peer review process, including how reviewers and panels were briefed (regarding interdisciplinarity and also impact on development)
- a comparison of the ESPA-2011 and ESPA-2012 review processes
- the role of the initial Strengthening Research Capacity grants and the Partnership and Project Development grants in supporting later interdisciplinary research.

This learning review captured lessons learned as to good practice from ESPA, drew on insights from other relevant initiatives (e.g. NSF’s SESYNC and Dynamics of Coupled Natural and Human Systems, RELU, MISTRA). Along with key conclusions, this review also offers a set of recommendations for future funders and evaluators of interdisciplinary schemes to consider.

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<sup>2</sup> [www.espa.ac.uk](http://www.espa.ac.uk)

<sup>3</sup> Additional small grants have been awarded, e.g. Evidence and Impact Research Grants to increase the impacts of ESPA, but their review processes are not considered here.

## METHODS

### Framework of Core Questions

In order to be able to draw together the results of a multi-method evaluation or learning review, we have found it important to provide a synthesising intellectual structure. Therefore, we designed a Framework of Core Questions (**Annex A**) that covered the full scope of this review, with one or more methods addressing each core question. Initial questions were fleshed out by early consultation with ESPA staff and input from the ESPA PEB discussion.

### Document Analysis and Data Access

In addition to reviewing documents available via the ESPA website and some desk research of existing, comparable initiatives, we were able to examine some briefing materials supplied to panel reviewers; however, we did not receive as hoped minutes of panel sessions. As noted below, we did have access to the ESPA database of successful applicants. We eventually were able to gain names of panel reviewers, but did not have access to any databases of either peer reviewers or unsuccessful applicants.

### Semi-structured Interviews

An interview topic guide (**Annex B**) drawing upon the Framework of Core Questions provided structure for the telephone interviews, while allowing flexibility to explore in-depth areas on which interviewees had more to say. Key points were transcribed, coded and collated, so that all interviewees' answers to a particular question were analysed for commonalities, differences and patterns. To gain a depth of insight into particular questions, while ensuring a diversity of input, we conducted 19 interviews with a range of individuals (some of whom held multiple roles):

Individuals involved with ESPA	Directorate leadership Key ESPA team members NERC Secretariat Programme Executive Board	7
	Awardholders/ PIs	2
Reviewers	Review Panel Chairs/members	8
External Perspectives	Key informants in other relevant programmes nationally and internationally	2 (plus insights from previous interviews regarding RELU and NSF)
	<b>TOTAL</b>	<b>19</b>

### Focus Groups

We hosted brief interactive sessions with newly funded ESPA-2012 projects at the Inception Workshop in London on 26 June 2013 where we facilitated rapid-fire discussion on application processes and suggestions for others who might be soliciting, evaluating or selecting interdisciplinary bids in future funding initiatives (**Annex C**).

### Surveys

We anticipated two online surveys as part of our data collection. The first was aimed at PIs/lead applicants of the ESPA-2011 and ESPA-2012 competitions as well as Strengthening Research Capacity grants and the Partnership and Project Development grants to get their perspective on the application and review processes (successful and, if possible, unsuccessful applicants in each case). A second online survey of peer reviewers/panel members would seek information on their experience of the review process. The survey instrument was designed so that it could also be used to gather comparable data from applicants, peer reviewers, panel members and panel chairs.

## Survey of awardholders

Drawing from the Framework of Core Questions, a 16-question awardholders' questionnaire comprising a mix of Lickert scale, pre-coded and free text response modes was designed using Survey Monkey (see **Annex D** for survey instrument). We opted for a relatively simple survey design without too many multiple layers depending on the respondents' level of experience with ESPA. Completed surveys indicated that it was taking respondents around 10 minutes to complete. From the email contacts database provided by the ESPA office, we extracted all of the PI addresses, yielding an initial sample size of 107. Surveys were distributed by email on 14 June with two reminders (24 June and 2 July). Of the initial 107 requests, two emails failed to reach the intended recipient and two recipients opted out, leaving a final sample size of 103.

## Survey of peer reviewers/panel members

We had to initially rely on NERC staff to provide access to the relevant contacts for this second survey. NERC officials take their data protection obligations very seriously and were unable to release the appropriate contacts database to us. Instead, we had to rely on NERC to issue an email invitation containing a weblink to the online survey on our behalf. This invitation was issued w/b 2 July. For expediency, we eventually agreed that the invitation would be issued to only 2011 and 2012 panel members/chairs and reviewers as these contact databases were most readily available to NERC staff.

We requested that a first reminder be sent w/b 15 July but we did not observe the expected spike in responses so it is unclear whether this reminder was issued. Nor do we know the number of contacts to whom this email was sent.

We were then able to negotiate an alternative strategy whereby NERC staff contacted panel members again to say that we would like to contact them and that, unless recipients specifically declined for their details to be passed on to us, NERC would release panel member and chair details to us. This was done and we issued an invitation to 44 panel members and chairs on 19 August with a final reminder on 30 August.

Given these problems with access, we were not able to progress our intention to survey unsuccessful applicants although seven of the survey respondents self-identify as unsuccessful applicants (presumably because they have held multiple roles).

## Response rates

As a result of these three invitations (plus reminders), we collected 101 responses from awardholders, panel members and chairs and peer reviewers; five of these were nil returns and were deleted from the dataset leaving 96 valid responses. We achieved a **42% response rate from awardholders** (43 out of 103) and a **52% response rate from panel members/chairs** (23 out of 44). As we do not know how many peer reviewers were contacted by NERC we cannot calculate a response rate although we can assume that the 29 reviewers who did respond represent a tiny fraction of all of the ESPA reviewers<sup>4</sup>.

## Profile of survey respondents

Of the 96 valid responses received, the majority of responses (38%) have come from awardholders followed by peer reviewers (30%) and panel members (23%) (see **Table 1** and **Chart 1**)<sup>5</sup>. Of the 81 respondents who chose to give their organisation in response to Question 1 (**Table 2**), the majority (58%) were from UK universities. Two-thirds of responses (65%) were from UK-based respondents and one third from overseas (32%).

When we asked respondents to identify all of the ESPA competitions with which they had been involved (**Table 3**), equal numbers (49 respondents) selected the ESPA-2011 and ESPA-2012 competitions. We had not specifically asked about ESPA-2013 in this survey as

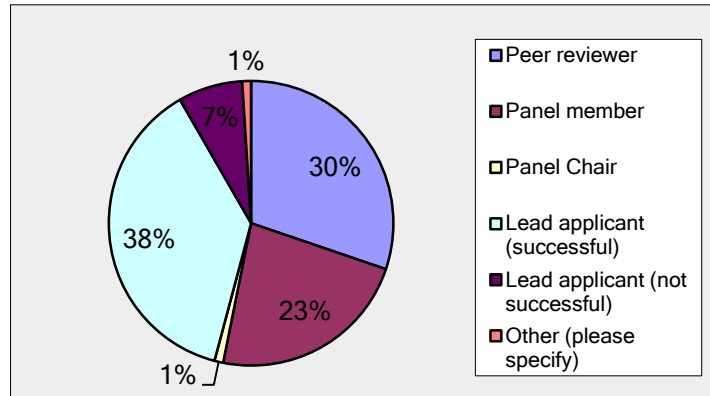
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<sup>4</sup> One additional response was unidentifiable as respondent selected "Other" giving a total of 96 responses.

<sup>5</sup> A full set of Tables is included in **Annex E**.

it was still underway but seven respondents indicated that they had also been involved in this scheme and almost one quarter had experience of the Partnership and Project Development grants.

**Chart 1: Respondent's role within ESPA**



### **Integrative Analysis and Lessons Learned**

We analysed findings from each method and then integrated across methods to address the key objectives of the learning review. In this report, for many of the questions, we lead with quantified survey data (the word “respondents” refers to survey data) and augment with complementary qualitative input from interviews and focus groups. Other, in-depth questions are addressed by a synthesis of reflections from interviews, focus groups and free-text survey responses. We are thus able to draw upon ESPA’s experience to offer a series of lessons learned as to good practice at the critical stage of review processes; and some recommendations to funders of future initiatives encouraging interdisciplinarity and impact-generation.

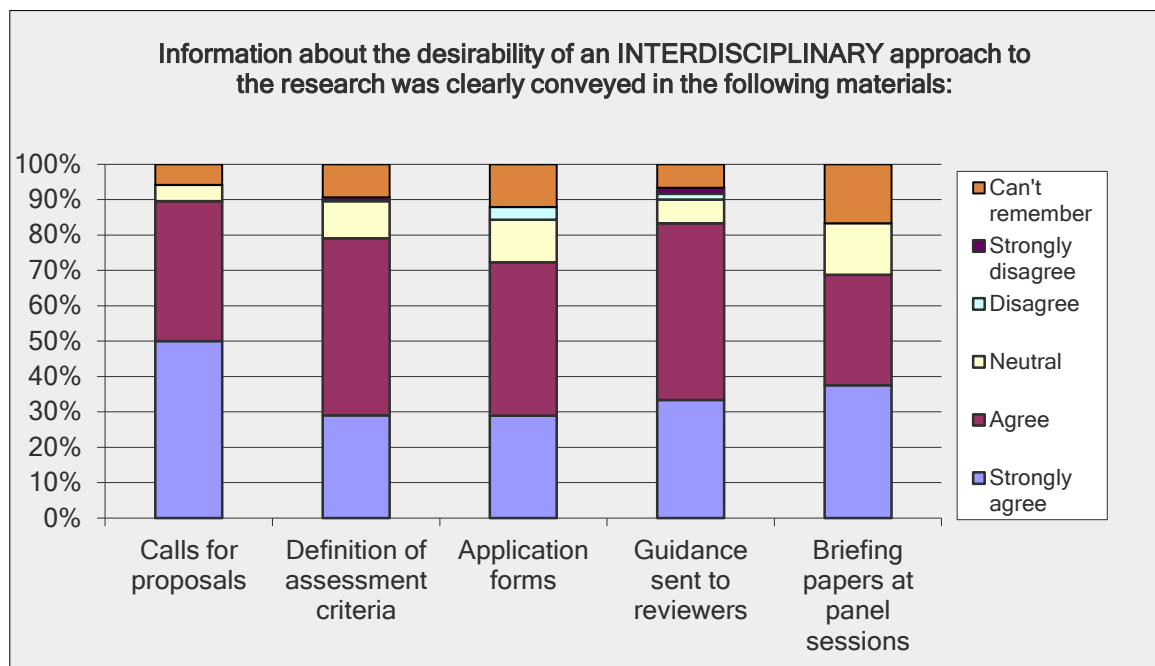


## RESULTS AND ANALYSIS

### Communication of criteria within application and assessment processes

Across all respondents, there was a general view that information was clearly conveyed about the desirability of an interdisciplinary approach to the research (Table 4 and Chart 2) and the desirability of impacts on international development (Table 5 and Chart 3) in materials related to the application and assessment processes.

**Chart 2: Clarity of information about interdisciplinary goals of programme**



Interviewees also agreed that interdisciplinarity was reasonably well communicated, for example:

*“It is sort of an exemplary programme where interdisciplinarity in all its guises is stressed”*

*“Anyone contemplating bidding would have to be particularly naïve if they didn’t understand that it is a major part of the ESPA ethos”*

Referring to “large, flashing lights”, focus group members at the 2013 inception conference generally agreed that interdisciplinarity was clear as a criterion, and in fact that things had improved relative to earlier days, the 2011 round in particular. They commented, for example, that although it was always clear that ESPA should be interdisciplinary, there has been increased clarity in reviewers’ minds over time.

However, some subtleties and issues were raised. For example, even when it was stated that ‘interdisciplinarity’ was a desired end, different perspectives could generate different views as to what that meant, so that an issue has been “*how exactly to communicate it so that both the applicants and reviewers are thinking about the same concept*” and that different disciplines might have different ideas as to what is meant. A reviewer interviewee commented:

*“it was stated a proposal had to be interdisciplinary, but the understanding of what that means was inconsistent. A lack of understanding was reflected by applications and certainly among reviewers there was a diversity of opinion as to what interdisciplinarity was”*

However, it was also observed that a balance is needed, as too explicit a description could be prescriptive and/or lead to game-playing by applicants. One suggestion was to provide illustrations of what interdisciplinarity would look like, perhaps a series of examples or case studies. Some interviewees involved with ESPA suggested that an early challenge more difficult than communicating interdisciplinarity was the difficulty of conveying the new underlying concept of “Ecosystem Services for Poverty Alleviation”. An issue raised was what at times seemed to be a strong emphasis on natural science, despite the need for links not only between natural science and social science, but also between cutting-edge natural science and impacts on development. For at least some recent documents, as in the 2012 call and some recent reviews, an interviewee involved with the programme noted that:

*“it doesn’t outright state (that you have to show) how your proposal is interdisciplinarity, but you have to say the reason for the research and that would have to be interdisciplinary to address the issues”*

Nonetheless, those interviewees involved with ESPA often noted improvement over time in the effectiveness of communicating what was wanted in terms of interdisciplinarity:

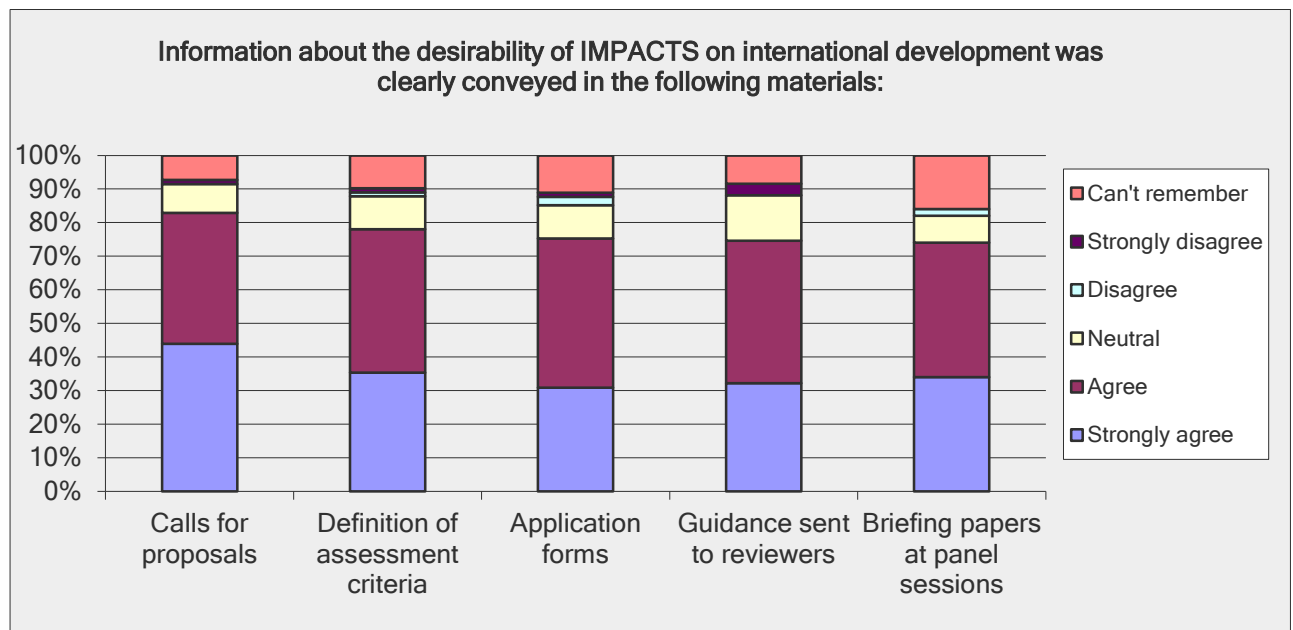
*“Early on in the programme it was not communicated as well as it is now.”*

*“We have had to evolve the process over time.”*

Indeed, more broadly, the comment was made by a funder that programmes such as Relu:

*“pump-primed that [evolution of interdisciplinarity]; the social science and natural science relationship has developed over the last decade. We do far more now. Nine years ago it was virtually zip; Relu was the start – and it was a rocky start – and now it is very common... it doesn’t even feel unnatural to have that connection”.*

**Chart 3: Clarity of information about international development impact goals of programme**



Interviewees also agreed that the desirability of international development impacts (or at least pathways to impact) was conveyed firmly (“ESPA really wants the world on a stick – high level science papers, research outcomes and also real measurable development impacts!”), and this level of expectations could be positive for an innovative programme. Yet, issues arose here as well. As with interdisciplinarity, understanding can vary as to just what is meant:

*“The need to have development impact was always communicated but the question is, where is that impact meant to be felt? There were different interpretations of where that was supposed to be.”*

Different funders can have different views; for example some might see research as being fundamental and having a longer timeframe, others might hope for sooner impacts or at least relevance with clarity about a pathway of steps toward impacts. This can create a tension, however potentially healthy that can be:

*“Calls were always clear regarding the need for impact, but it’s the lenses people use to look at impact [that matter]. Communities have very different lenses; it’s taken a long time to get them to converge.”*

Again there is a sense that improvement has occurred. In fact, when interviewees involved with ESPA talk about this criterion, a process similar to the building of interdisciplinary teams seems to have occurred across funders:

*“A lot of issues involve deliberation and discussions to improve understanding, and that takes time.”*

Having a team with focused responsibilities also helped:

*“Once the Directorate was on board, ESPA had individuals working on what ‘impact’ means for ESPA, establishing and cleaning up the message. Once at that point, it was very easy to communicate it.”*

Focus group members made similar comments, observing for example that clarification has occurred over time that ESPA is about excellent research with pathways to impact, rather than expectations of actual impacts on development within three years. However, focus group teams still noted that impact was a key driver – which brought in partners that would not otherwise have joined the project.

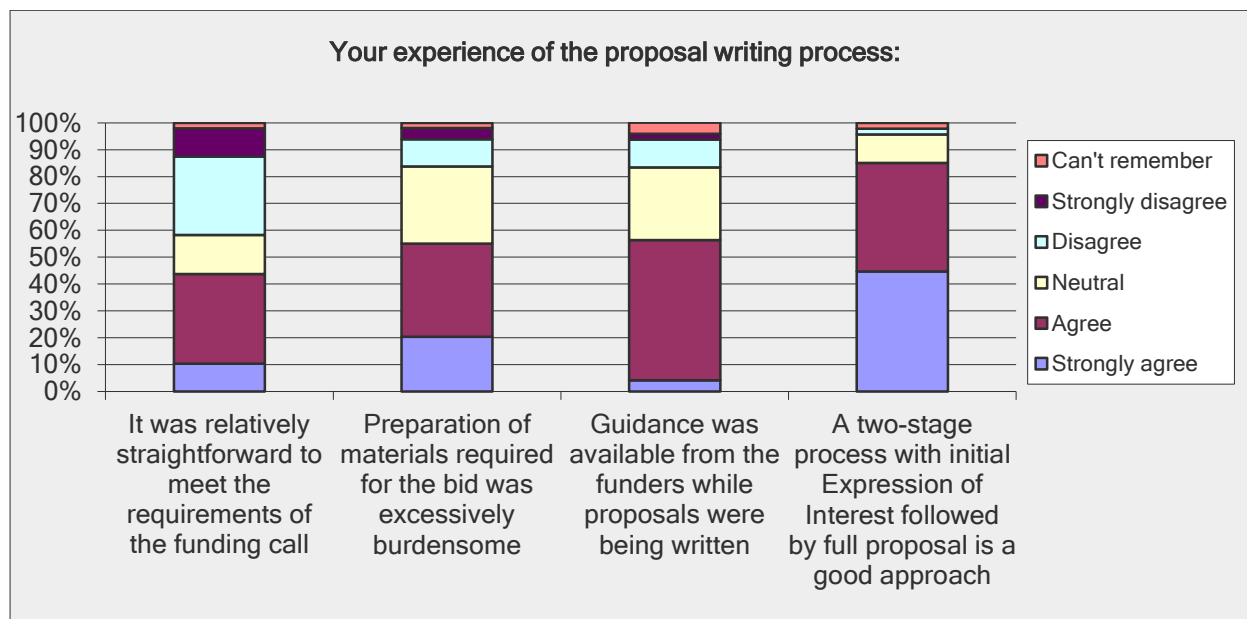
### **Experience of proposal writing process**

Experience was more mixed when we asked about the proposal writing process (**Table 6** and **Chart 4**) with only a minority (44%) of respondents agreeing that it was relatively straightforward to meet the requirements of the funding call. When we cross-tabulate this question against the funding call, 47% of ESPA-2011 awardholders agree with this statement compared with 40% of ESPA-2012 awardholders and only 35% of Partnership and Project Development grant awardholders (**Table 6a**). The majority (55%) across all schemes surveyed felt that preparation of materials required for the bid was excessively burdensome and here we see a more marked difference between calls: 40% of ESPA-2012 awardholders agree with this statement compared with 61% of ESPA-2011 awardholders and 60% of Partnership and Project Development grant awardholders suggesting a possible streamlining of the proposal writing requirements for the main grant schemes over time.

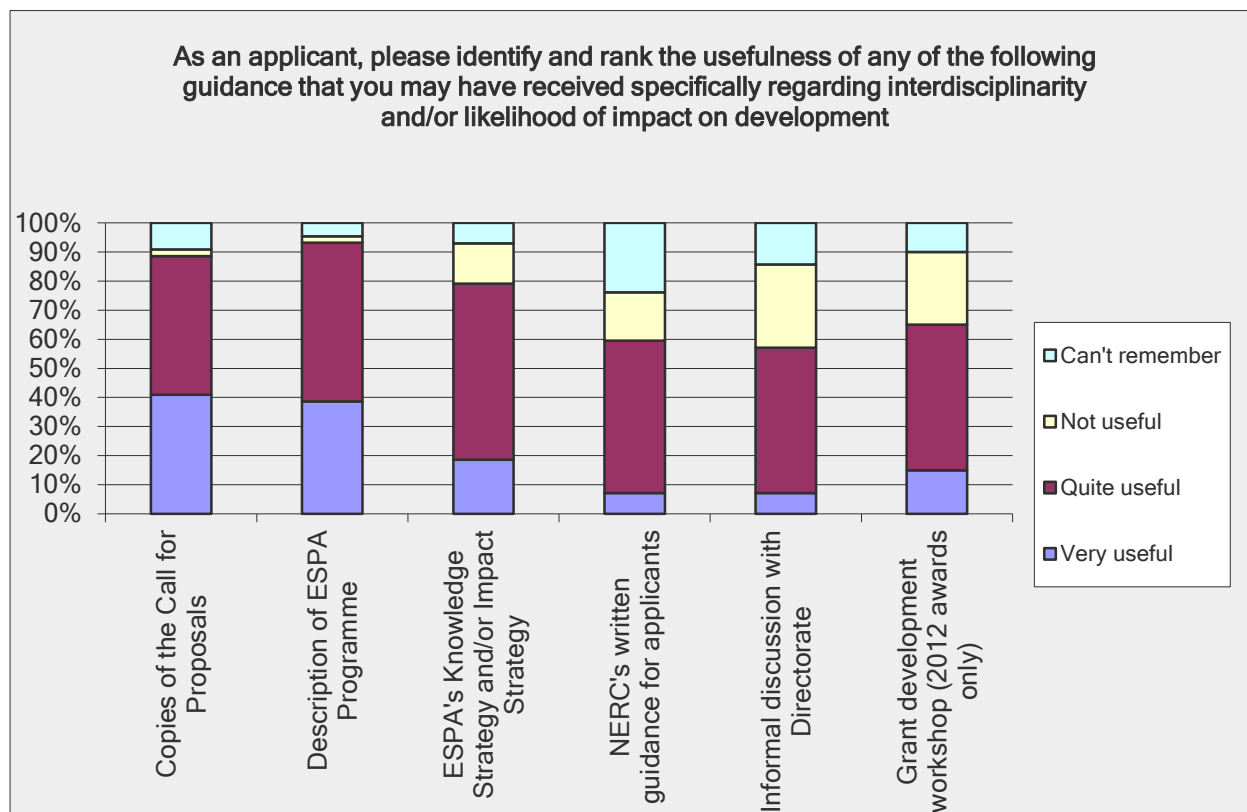
A majority (56%) across all schemes surveyed agreed that guidance was available from the funders while proposals were being written. Most respondents (85%) agreed that a two-stage process with an initial Expression of Interest followed by a full proposal was a good approach. Interviewees strongly encouraged the use of a process with (at least) two stages, as well: “a multi-stage process is a lesson learned for a complex programme”.

When we probed further about the usefulness of any guidance that the applicant may have received specifically regarding interdisciplinarity and/or likelihood of impact on development (**Table 7** and **Chart 5**), responses tended to be “quite useful” rather than “very useful”.

**Chart 4: Experience of the proposal writing process**



**Chart 5: Effectiveness of specific guidance regarding interdisciplinarity and/or likelihood of impact on development**



Interviewees were asked to comment on “burdens” that may have been placed during different calls/treatments on applicants, the Directorate and reviewers. By far, most comments had to do with the extreme burdens imposed by the large-scale 2011 round, in which so many large consortium projects (some 90) had to submit full-scale proposals (well over one hundred pages each). The 2011 experience was roundly denounced, in terms of both the effort required of applicants and the extent of the reviews required. A typical view, from someone involved with ESPA:

*“We wasted loads of time and effort producing final proposals in 2011 – and lots of people did—a huge amount of resources went into that call. People were really p\*\*\*\*d off by it.”*

Despite uniform and strong distaste for the burdens of the round, a silver lining was offered for the vast extent of consortium proposals created for the 2011 round:

*“You can expect that some of the collaborations will emerge in other situations. The end result, without any expenditure from ESPA: there will be loads of teams that had made connections!”*

And a reviewer made a similar comment:

*“Whether it was quite as wasteful as it was thought to be is a question – it created a lot of collaborations and put the ESPA agenda on the global map, even among those not funded.”*

Following recognition of the excessive burdens of 2011, interviewees spoke very positively of the changes made to “a staged process, not overburdening researchers in preparing proposals unlikely to be successful”. Management of the second round was seen by interviewees as “much smarter”, with a “reduction of burdens on everyone”:

*“I am not saying something new if I express that from both sides the 2012 round was much better.”*

Thus in 2012, (as described in the guidance for panel members) a short proposal, in the form of an expression of interest, acted as a “sift”. Following that, a three-day workshop was held for those teams making it through that sift, to help guide them through the process. (Although the workshop was recognised as helpful, not all were convinced that a full three days were necessary for those already steeped in ESPA’s requirements.) Then an outline proposal was submitted, followed by a full proposal. Numbers thus decreased from 153 expressions of interest to 34 outline bids to 12 invited to submit full proposals, each receiving between three and seven external peer reviews sent to the PI for response. Considering the reviews and responses, the ESPA Programme Executive Board invited nine proposals to the final round of interviews and selection of 6 projects. Staging of the process has been used since 2012. (The 2013 Call received 132 outline bids, sifted to 32 invitations for full proposals, with 27 submitting; following external peer review and PI response, an internal sift meeting put forward 22 proposals for the panel’s decision-making. The ESPA Programme Executive Board signs off on each stage.) Regarding multi-stage processes, an interviewee noted:

*“you knew where you were, writing slightly longer for the next round, then the full round, then an interview –it took a lot of time, but the chances got better and better, so it was not disproportionate”*

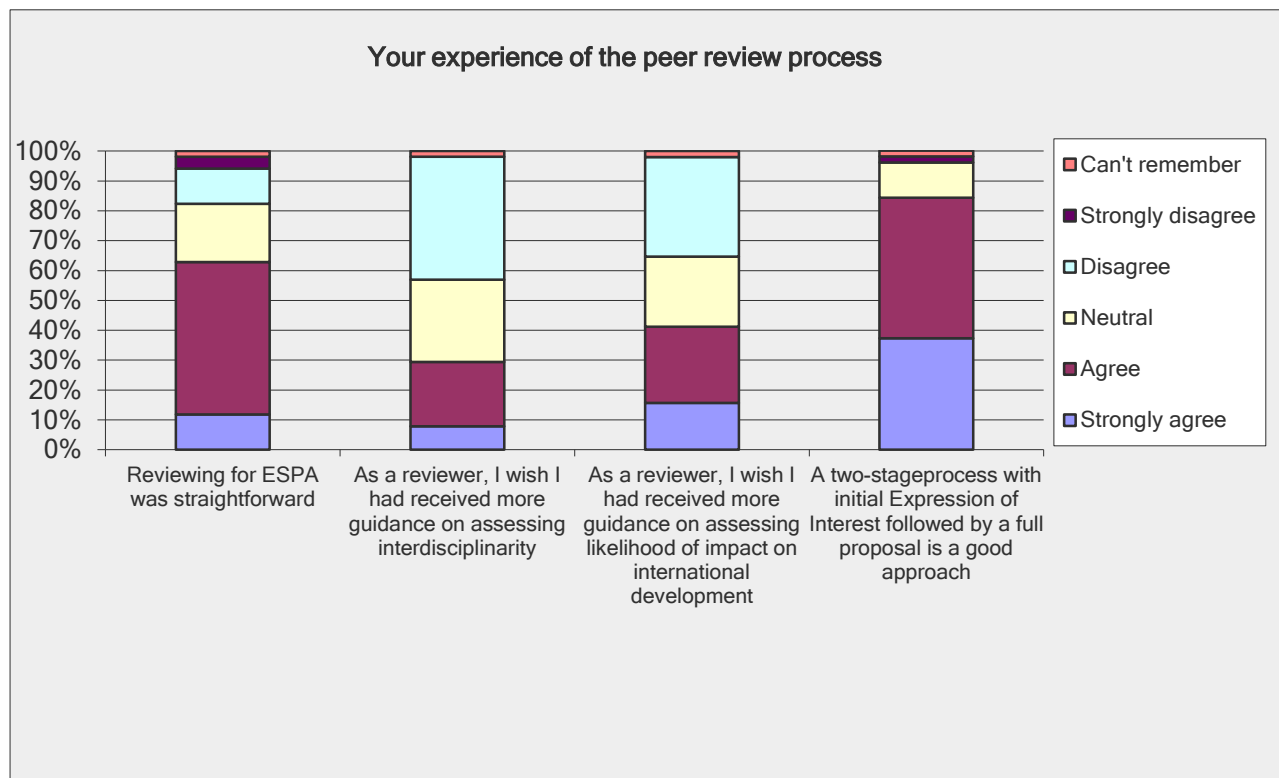
A specific issue relating to burdens on applicants was that difficulties faced by international partners in responding to the Research Council forms/requirements (e.g. JES) meant that it was easier for the UK institutions within consortia to act as the lead and handle all the administration. Current staging of the process now means that complex submissions are asked of only a few applicants.

### **Experience of peer review process**

Sixty-three per cent agreed that reviewing for ESPA was straightforward (**Table 8** and **Chart 6**) but there was a spread of views on whether respondents would have appreciated more guidance on assessing interdisciplinarity (29% would have liked more; 28% were neutral; 41% did not feel they needed more guidance). A similar spread was observed when asked whether they would have appreciated more guidance on assessing likelihood of impact on international development (41% would have liked more; 24% were neutral; 33% did not feel they needed more guidance). There was much more unanimity when asked about the two-

stage application process with 84% agreeing that a two-stage process with an initial Expression of Interest followed by a full proposal was a good approach (12% neutral).

**Chart 6: Experience of peer review process**



The 2011 round was seen by interviewees as having imposed extensive burdens on the peer review process. Even the early stage of selecting peer reviewers was affected, as so many peer reviewers were needed to handle so many full proposals – with complaints that all could not be of equal quality, particularly since a great many relevant people could not be invited to so serve, as they were involved with one proposal or another. Then at the panel stage, the sheer number of proposals (about 90) meant that the panel was “massive”, and no one read all the proposals. (Individual proposals were each very long, as well.) Having a large, ‘multi-disciplinary’ panel seems to have had implications; in the view of one interviewee:

*“the net result was that the interdisciplinarity we got out was not as good as it should have been”*

In the face of this extraordinary volume of work, the efforts of the secretariat staff were recognised:

*“The burden on the NERC Secretariat was huge; they did a very good job to manage that”*

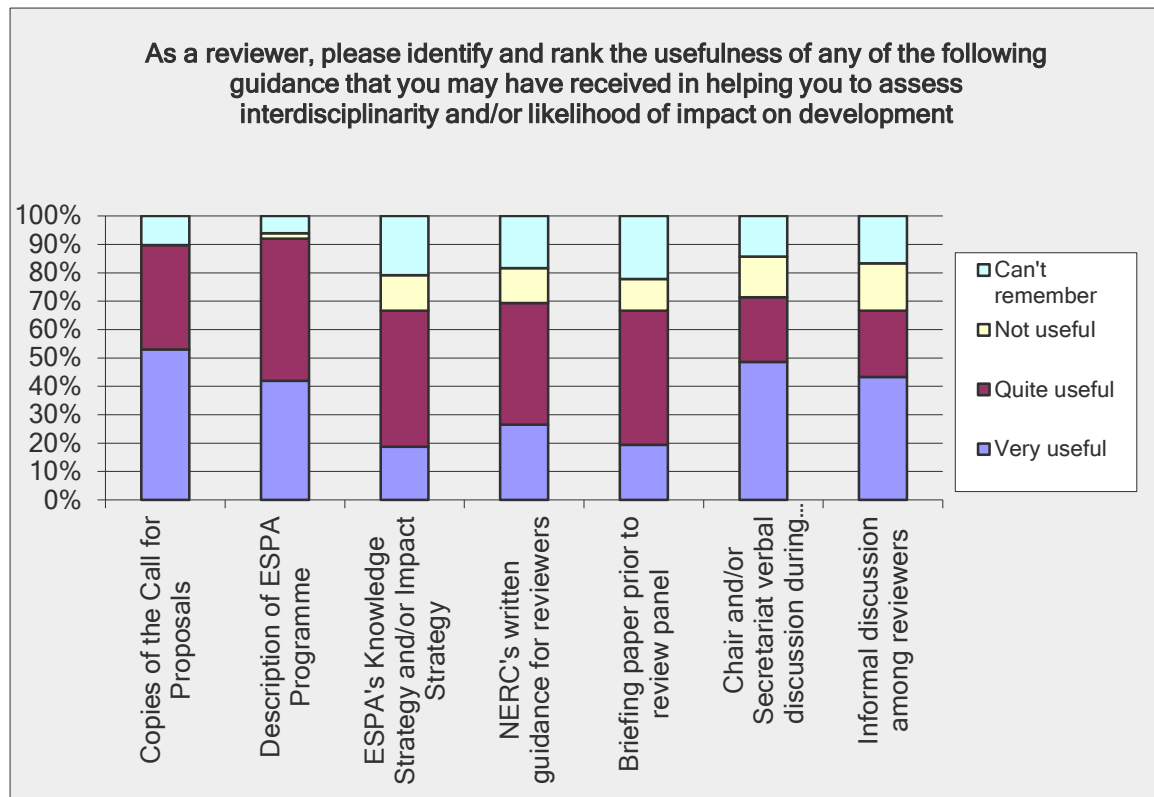
With the change in 2012 to a staged process, such that sifting led to a far smaller number of full proposals going to reviewers, there was a perceived improvement in the standard of reviews. One focus group, for example, highlighted the view that full proposals were seen by the best referees, leading to very constructive comments.

### Guidance for reviewers

We also asked reviewers about the usefulness of any guidance that they may have received specifically regarding interdisciplinarity and/or likelihood of impact on development (**Table 9**

and **Chart 7**), responses were positive and tended to be slightly more positive than those from applicants (**Table 10**).

**Chart 7: Usefulness of guidance for peer reviewers**



One respondent noted that it would have been helpful for reviewers to have access to ESRC guidance too.

A related, challenging issue in the review process raised by both survey respondents and interviewees was the inherent difficulty of weighting diverse desiderata into review scoring, in particular the relative priorities assigned to scientific excellence vs. impact:

*“Most of the applications try to [include impact goals] but in terms of how it is factored into scores by panel, I think that is the point where it disappears. The one stronger on the science will always be funded ... where it causes an issue is post-award, you don't always get the projects from which it would be easiest to deliver development impact. ... There is a range of criteria for selection process: interdisciplinarity, good science and potential for development impact.... And at the end of that, a single score. Different reviewers will vary their weighting between those things in their mind and (yet) this leads to single score. (When you see) comments from reviewers—it is sometimes difficult to understand the process that leads to the single score.”*

*“During the panel it became clear that the highest priority was good science and only then would we discuss the impact of potential proposals. This was unexpected and may need to have been made more clear in the call and to applicants and reviewers. The briefing notes for panel members also did not explain the process that any proposal would first be assessed as to its level of good science and that only those proposals higher than 6 would get further discussed in the panel despite some having great potential for impact.”*

A reviewer interviewee felt quite strongly that scientific excellence was clearly weighted most heavily:

*“It turned out, [within] the named criteria – [what came] first of all, ‘was the proposal really really good -in terms of scientific robustness and advancing science- it was irrelevant if the proposal was interdisciplinary*

*or likely to have impact ... in our case, literally it was 'tell me your score; if all scores are below 7 on science, then it will not be discussed in detail'.*

Certainly in, for example, the guidance provided to 2012 panel members, it seems that, first, there is a request for an “overall natural *and/or* social science excellence grade”, followed by a description of “Grade Definitions; Fit to Scheme” that is split into “specific scientific objectives or requirements” and “alternative, generally non-scientific, aspects”, listed as “Approach to Interdisciplinarity and Quality of Integration”; “Research Partnerships”; and “Capacity-building”. Whether or not it benefits interdisciplinarity to be categorised as “non-scientific” and separate from science excellence, is an interesting question. And, panellists are asked to assess Pathways to Impact, as well. Thus, guidance for the 2013 panel asks readers and introducers for each proposal to read reviews, PI responses and make comments on a provisional score for the “**Research Excellence, Fit to Scheme** (Scientific and non-scientific) i.e. to the specific objectives of the Programme as outlined in the Announcement of Opportunity, and **Pathways to Impact** of the proposal”. Of course, criteria can be interwoven, as one reviewer interviewee asserted:

*“Science can be bound to a discipline, but the implementation process cannot be taken care of unless it is truly interdisciplinary or transdisciplinary.”*

Interestingly, given comments made, the 2013 guidance includes in a subsection on Proposal Prioritisation: “A ranked list of the proposals will be compiled based on the scores assigned to each proposal for Research Excellence. Pathways to Impact scores will then be used as a first pass at ranking within the Research Excellence scores. It is important to stress that the panel has the right to rearrange this ranking order, if the science is felt to give a more appropriate order, but only within the Research Excellence score (e.g. within all those given a score of ‘7’ for excellence).”

Interviewees were asked about preparation or training of reviewers. There is a sense that in the first tranches of funding, particularly 2011 (which saw such numerous full proposals and thus required an enlarged pool of reviewers), many of the peer reviewers enlisted, whether international or in the UK, were not accustomed to a review process of this sort. Numbers of required reviewers has decreased with staged application processes, allowing a core of particularly relevant reviewers to be selected, and also, over time, preparation for panellists has been developed. (A reviewer interviewee who has been on more than one panel notes: “They are becoming better at it every time, improving these pre-panel presentations”.) Now, typically, the ESPA Director gives a preliminary introduction to the nature of ESPA and aims of the particular call (but is not then involved with the panel’s processes). There may also be a context-setting presentation by a member of the Programme Executive Board on the objectives for the panel. The Secretariat provides handout material. At this point, panellists will have already assessed some proposals each as individuals, with earlier Secretariat materials for guidance. Such materials have themselves been improved over time, providing “clearer guidance, with answers to all obvious questions”.

An innovative step designed by the ESPA Secretariat for the 2012 assessment panel, which continues to be used by ESPA and has been picked up by different funders for review processes of other complex programmes, has been an interactive ‘mock panel’ exercise conducted around past proposals. With the lead of the Secretariat acting as Chair, the panel reads through some anonymised presentations/proposals from an earlier round and comes up with comments. They are also given the past panel’s notes and feedback, as well as reviewer comments.

*“It was not a perfect process as those proposals were quite different, but it really helped [the panellists] home in on the kinds of things they should be picking up on, what the scoring range actually meant. ... When we did the panel itself, it went like clockwork. There is always a teething process at the beginning of the panel, little issues that can slow you down, but following training [there was] a momentum, very slick, it irons out surrounding issues so that panellists are very clear about what they are trying to deliver.”*



Although only about an hour and a half long, this mock panel thus provided all panellists with a common experience base in working through the sorts of discussions that might arise, prior to the assessment itself. As a reviewer interviewee observed:

*“The discussion that it [the mock panel] elicits gives you some idea of what you’re looking at; I found it helpful to get [the panellists] more or less on the same page. It is quite daunting to be on the ESPA panel, so I appreciated all the help, documentation and training”.*

Another reviewer interviewee praised the preparation process:

*“Absolutely excellent. We had an afternoon and then a full day. In the afternoon, there was a full briefing not only around the broad ESPA agenda and criteria but also to implement what those criteria might mean in a panel discussion. I’ve never seen clearer..... Each panel has its own particularities, so it might be an open question if the case material was (just right for) this panel, but it got us talking. It gives all the panellists the confidence to speak up so in terms of panel dynamics that really helped.”*

While another reviewer interviewee with extensive experience in reviewing for NERC “didn’t learn much from that training”, others felt that the complexity of ESPA (as it aims for excellent research, interdisciplinarity and impact on development) was best served by extra attention:

*“The overall issues about what ESPA does and is trying to do are sometimes quite grandiose so it is sometimes useful to learn about nuts and bolts with Paul [the Director] and so on there and be able to quiz them as to what was wanted in the call”.*

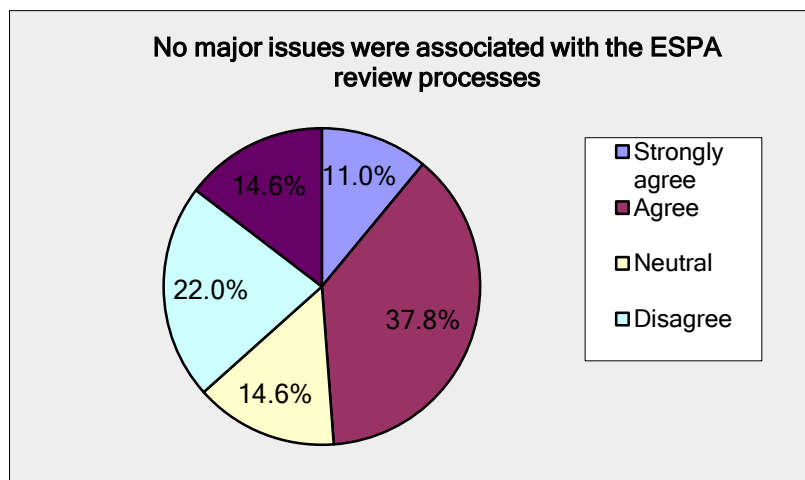
Of course, time asked of busy panellists can be an issue, requiring a balance of information provision for: responsibilities prior to the panel; the preparation stage and the panel deliberations. One reviewer interviewee liked the pre-panel preparation but felt that some of the context it conveyed could also be presented more extensively in the materials already sent with the proposals to be read beforehand.

### Overall experience of ESPA review processes

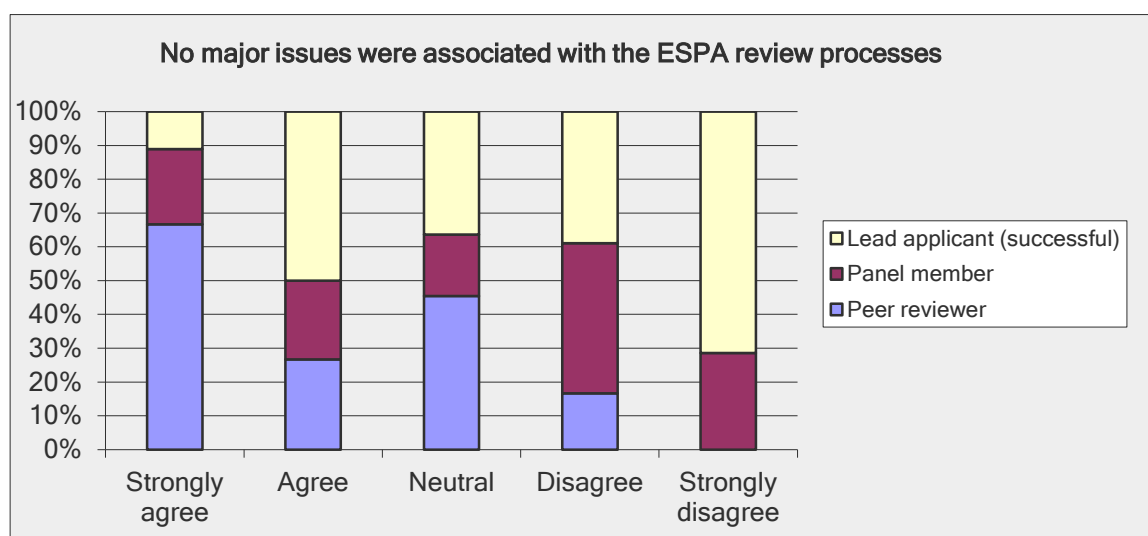
Although 49% of respondents overall felt that there were no major issues with the ESPA review processes (**Table 11** and **Chart 8**), 37% disagreed with this statement. When we cross-tabulate this question against the funding call, 54% of ESPA-2012 awardholders agree with this statement compared with only 37% of ESPA-2011 awardholders and 32% Partnership and Project Development grants awardholders suggesting a possible improvement in the review process over time (**Table 11a**).

Analysing responses to this question from the different groups of respondents within the dataset revealed some variations (**Table 12** and **Chart 9**). Panel members were most likely to cite issues with the review process with 48% disagreeing with the statement that there no major issues associated with the ESPA review processes compared with 14% of peer reviewers and 31% of awardholders who answered this question.

**Chart 8: Overall experience of ESPA review processes**



**Chart 9: Overall experience of ESPA review processes**



When given the opportunity to expand on their response to this question, some concerns were raised about the role of the social sciences within ESPA:

*“the absence of the ESRC from the panel review process is possibly to the detriment of ESPA. Despite the number of applications and the duration of the programme to date it was somewhat disappointing to see the paucity of applications that are conceptually informed. I feel this could be strengthened if ESRC were more engaged in the process.”*

*“Because ESPA is NERC centric there has been an excessive favouring / preference for natural sciences ... we feel we have had to contort what our research agenda too much is to fit the NERC / natural science bias in ESPA”*

*My experience... is that the different funding agencies came at the programme from different directions with different expectations and criteria.*

And issues with the interdisciplinary peer review process were raised:

*“There is a need for a greater weight of genuinely inter-disciplinary researchers in the reviewer list/panel to help to provide a greater counter-balance to the views of those taking a more disciplinary partisan view.”*

Interviewees raised similar points. Opinions of the 2011 round were certainly negative, with focus group members as well as interviewees using pejorative words such as “shambolic”, with “shoddy reviewers”. However, the general consensus was that ESPA appears to have learned, for example through the 2012 summary of *Lessons Learned* authored by the ESPA Directorate<sup>6</sup>. Following this study, commendably demonstrating organisational learning in action, the ESPA Programme Executive Board issued a statement, captured in the report’s Executive Summary, thanking people for their interest, acknowledging frustration felt, and announcing a new procedure for the 2012 call: “This new process aims to significantly reduce the investment from applicants who do not succeed and reduce the peer review burden on the community. It will also enable engagement and interaction with applicants early on in the scoping of their research idea, including guidance on the remit of ESPA and the scope of the call.”

In general, interviewees appeared relatively satisfied with the overall review experience:

<sup>6</sup> *Lessons Learned from early ESPA research applications: analysis of feedback from applicants*, authored by the ESPA Directorate, <http://www.espa.ac.uk/files/espa/ESPA-Application-Report-FINAL.pdf> (February 2012)

*“People came out of the panel feeling it was a good process, in my view. It was a panel that worked ... ESPA is much more experienced than when it began, so it is not surprising I am so positive” (about the review process).*

Another reviewer interviewee affirmed the value of the selection process:

*“I think the ones we recommended and were funded were the best of the bunch. And the process was extremely fair and it worked well”.*

Interviewees involved with ESPA emphasised the effectiveness of the 2012 round:

*“We ended up with a portfolio of projects that really do encapsulate what ESPA is trying to do.... This was done in an efficient and effective way, that didn't put too many people to exceptional work when not needed.”*

Even so, some issues were raised. One is the traditional problem of peer reviewers uncomfortable with interdisciplinary proposals, although some thought this was addressed in a much better way at the review panel stage:

*“I had the impression that some of the [peer] reviewers struggled with interdisciplinarity ... when we got our reviews they were very mixed... I had the impression that the panel did quite a good job in taking some distance from the reviewers and getting beyond issues of them looking at a proposal only from their own background. From experience with other proposals (in other programmes), it is not unlikely that one single negative review torpedoes your proposal, but not in this case.”*

Others noted instances of seeming dis-proportionality even in panel discussions:

*“in relation to the panel itself, there was a delicate balance between social and natural science... I got the sense that natural science held some sort of veto”*

Perhaps analogous to interdisciplinarity issues, interviewees also noted differences in priorities across funders, whether the natural science orientation of NERC or the social science orientation of ESRC, or indeed whether the emphasis was on quality of research (and associated timeframe often showing only pathways toward impacts) familiar to Research Councils or on differences made to international development, the core business of DFID.

Quite a few interviewees discussed the importance of composing a review panel carefully, for a mix of disciplines but also an understanding of interdisciplinarity –and also for a mix of perspectives including appreciation of impacts on development:

*“A lot of variables in an ESPA review panel are required that are quite different from those required in a (typical) review panel in the UK.”*

A reviewer spoke sympathetically of the number of criteria (perhaps too many) that applicants must meet, within each of the main criteria of path-breaking research, interdisciplinarity and impact:

*“By the time you've gone through the details, you've got a whole lot more criteria. Sometimes as an applicant it must be baffling. But the spirit of ESPA allows very interesting proposals to come through and be funded within the balance of criteria”.*

ESPA had to “actually build the community of both researchers and reviewers before constructive dialogue could take place” and many interviewees felt that there has been a “growing maturity in the community” with more people aware of what ESPA is looking for. This appears to have been aided by a variety of factors, including clarity provided by ESPA's Knowledge Framework and Impact Strategy, presentations and informal conversations by the Director and PEB members, growth in experience with subsequent funding rounds, and selection and preparation of reviewers and of course increasing numbers of active researchers within ESPA. There are now over 500 people in numerous countries conducting ESPA research.

A number of interviewees raised issues and noted improvements in the overall chain of events composing the review process, particularly in the change from 2011 to 2012. After 2011, emphasis was put on the improvement in communication of what ESPA was looking for and on how the process developed into a multi-stage process, in which sifting was done

in an informed way, with some stages interactive. Thus, comments from one interviewee involved with ESPA reflect what many described, including a strong role by the Programme Executive Board:

*"We made a mistake in the first round as we thought academic reviewers would get it, but they didn't; so they sifted incorrectly as they didn't understand the remit. (In the first round we had a workshop for applicants but didn't think about educating reviewers, so in the second round we had a training day (most of a day) for reviewers.)*

*In the second call we had a multi-stage process where we took people through it step by step. At the outline stage, we sifted on those closest to understanding it. .... You could tell they were sort of getting there and could sense a willingness on the part of the team to move in a particular direction... (we held) a workshop... they had the chance to engage... a very interactive process. ... Then they were asked to put in another bid, sifted further.*

*[In the second round] in the earliest stages, the sifting people were those of us involved in the design of ESPA. .... So we made sure we got projects closer and closer to the ESPA ambition; then at the final stage we brought in academics to assess the science; we gave them only the projects in the ESPA space."*

Finally, some survey respondents cited concerns about lack of transparency in the review process and 'interference' from the ESPA Directorate:

*"More difficult was the need to address requests from the ESPA Directorate, over and above what the reviewers had suggested. I understand the Directorate would like a set of projects that fit with their vision, but it is not a good idea to try to re-shape proposals AFTER they have been evaluated, approved and partially implemented."*

*"Views, indeed the provisional ranking of proposals, of the Moderating Panel appear to have been ignored, leaving one wondering what the relevance of the reviewing process was."*

*"interdisciplinarity/impact should be built in from the beginning and not 'retro-fitted' following peer review"*

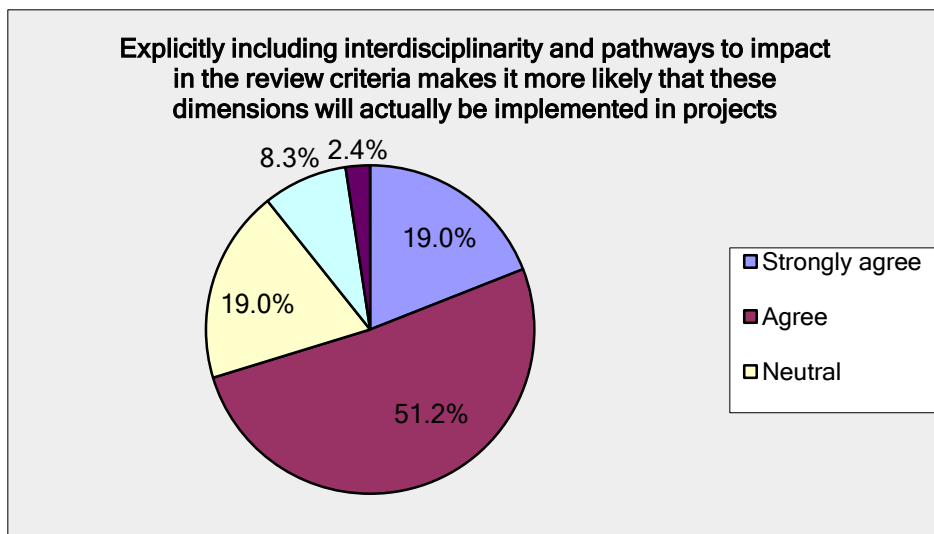
It was also noted by interviewees involved with ESPA that the Directorate had input into the process, such as in the framing of goals for a round, and sometimes communication of its views as to "fit" with ESPA, but then the Directorate was kept completely out of the formal assessment managed by NERC on behalf of the funders. "By maintaining that distance to the Directorate have been able to interact much more directly with the research community, and give advice" ... After panel reviewers produce a ranked list of projects recommended for funding, the Programme Executive Board makes final decisions, not the Directorate, though recently the Directorate has provided comments on fit to the programme for the PEB to consider as well. As one interviewee framed the issue of the Directorate's role:

*"Their input is valuable, but we need a Chinese wall between them and selection of the projects. How do you make best use of their experience and expertise without compromising their independence? ... Their views are shared with the panel ... this tends to be around remit not quality."*

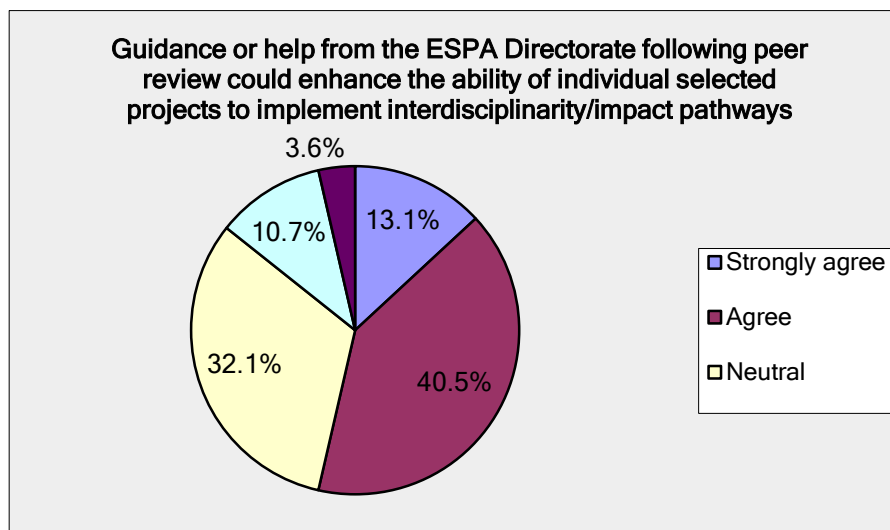
### **Review criteria and implementation**

The majority of respondents (70%) agreed that explicitly including interdisciplinarity and pathways to impact in the review criteria makes it more likely that these dimensions will actually be implemented in projects (**Table 13** and **Chart 10**) but a smaller majority (54%) agreed that guidance or help from the ESPA Directorate following peer review could enhance the ability of individual selected projects to implement interdisciplinarity/impact pathways (a third of respondents were neutral on this question) (**Table 14** and **Chart 11**).

**Chart 10: Review criteria**



**Chart 11: Guidance from Directorate**



When given the opportunity to expand on what the ESPA Directorate could usefully do to support applicants, there were several comments by respondents about good science prevailing despite emphasis on interdisciplinarity and impact, and a sense that some applicants were receiving mixed messages with interdisciplinarity and impact being seen as something of an “afterthought”. Specific suggestions for activities that the Directorate might undertake to enhance the ability of individual selected projects to implement interdisciplinarity/impact pathways included:

- providing a check list to help applicants ensure their proposed project meets interdisciplinarity and impact requirements
- the Directorate taking a co-ordination role to optimise engagement and avoid multiple approaches to stakeholders
- hosting a conference on interdisciplinarity to discuss what constitutes or defines rigorous forms of interdisciplinarity
- bringing PIs together occasionally to share ideas and learning from past programmes

Interviewees acknowledge that there is a balance to be achieved between Directorate involvement and intrusion. On the one hand:

*“Projects are funded on a set of objectives so they have to deliver. The guidance upfront says all projects are expected to work with the Directorate; they know there will be a higher level of engagement”*

On the other hand, high quality researchers, particularly those raised in the Research Council culture, expect to develop their own work. Another interviewee described a “massive spectrum” of attitudes among people associated with ESPA, from “Let them do their own thing” to “This is ESPA and there are things they have to deliver since ESPA has to deliver impact”. There is a middle ground:

*“Projects have to have the opportunity to explore in their own way, or we would not get those creative solutions, but on the other hand they do have to be constantly reminded we are looking for impacts”.*

The Director visits projects regularly, including their field teams, and holds six-monthly meetings with the PIs at least, staying in touch with the projects and sharing insights across them. The Directorate has organised fora such as science conferences and knowledge workshops to explore interdisciplinary themes, facilitate collaborations across projects, and ideally to enhance their likelihood of impact. The Directorate also offers fellowships linking projects and introduces project teams to each other as well as the goals of ESPA in inception conferences for each round. A focus group team suggested that events such as the inception conference were useful for linkages or synergies with other projects and data sets, and also for possible ‘impact bridges’ which the directorate with its many connections could help projects with, in accessing stakeholder groups, informing bigger debates on policies or otherwise scaling up from project-specific to wider impacts.

### **Advice for Future Funders**

Interviewees, respondents and focus group members engaged with the request to draw upon their own insights to offer advice on review processes for future funders of complex initiatives entailing interdisciplinarity. Several key inter-related themes emerged, including:

- clarity of expectations
- management of the review process (staging, informing, conducting the process)
- composition and preparation of review panels (selecting panel reviewers, preparing panel reviewers, peer reviewers)
- awareness of the challenges of interdisciplinarity
- learning & adapting (adapting at the project level, funders’ interactions, at the programme level, making the most of learning)

Detailed insights, fleshing out each of these themes, have been captured in **Annex F**.

## INSIGHTS FROM OTHER INTERNATIONAL REVIEW PROCESSES

Before concluding this report, we offer some highlights from four international review processes for interdisciplinarity which may be thought-provoking as far as the overall learning goal of this review.

### National Science Foundation “synthesis centres”

In the US, the National Science Foundation has funded multiple “synthesis centres” to bring researchers together, and together with new types of data. (The key part of synthesis centers is that researchers work with existing data. And not all use new types or new combinations of data). Perhaps the most well known of these centres is the National Centre for Ecological Synthesis. Following upon that success, NSF held a competition for an environmental science synthesis centre that would involve integration of environmental sciences with social science and focus on broader impact. The winner, the National Socio-Environmental Synthesis Center, SESYNC (<http://www.sesync.org>) was founded in 2011 at the University of Maryland, with a mission that is resonant with that of ESPA. As described on its website, SESYNC is “dedicated to solving society’s most challenging and complex environmental problems. These problems, rooted in the multi-faceted relationship between humans and the ecosystems in which they live, require collaboration amongst natural, social and computational scientists, such as ecologists, sociologists and political scientists. ... SESYNC is a resource for the scholarly community, facilitating innovative, cross-discipline research by providing a unique array of support and activities, as well as a physical collaborative space, to accelerate socio-environmental research and synthesis.”

SESYNC provides support to interdisciplinary teams (often including NGOs or government as well as academics); teams come to the centre for 4-5 days at a time for perhaps half a dozen visits over 2-3 years. SYSYNC provides not only a common location designed for group interaction, but also practical help such as computational database and programming support. Distinctively, it also provides ongoing facilitative support, with a “Director of Interdisciplinary Science” helping with facilitation of the team’s dynamics, agenda design, joint conceptual framing, and so on.

As we understand it, there are several interesting aspects of SESYNC’s review processes:

- a) SESYNC uses *a long-lived review panel*, which, although rotation keeps the panel fresh, allows most panellists to serve for two years, so that they have time to learn about SESYNC aims and the complexity of what it is asking people to do.
- b) While panel members have varied backgrounds within the general arena of SESYNC, *a key criterion for panel member selection is receptivity to interdisciplinary approaches*. (External peer reviewers who may respond from their disciplinary perspectives can be used as needed, but review panellists are seen as needing to be able to have both disciplinary expertise and act as generalists in the context of SESYNC’s mission.)
- c) There is a good bit of *iteration with leaders* of the projects in the proposal process, as part of the mission is to build capacity, along with stringent winnowing as necessary.
- d) Before each panel meeting, the Center provides *an introduction to the aims and themes*.
- e) Working with the review panels as they deliberate, the Director of Interdisciplinary Science *facilitates the review panels* by posing questions connected to the centre’s mission and themes, helping to get the best from the panels but definitely not promoting particular proposals, as the panel conducts a stringent review.

## National Science Foundation Dynamics of Coupled Natural and Human Systems

Another National Science Foundation initiative that seeks interdisciplinary proposals is Dynamics of Coupled Natural and Human Systems (with a budget of \$17M in 2010). This was the subject of a case study in the chapter on evaluating interdisciplinarity in our book<sup>7</sup>. The initiative is meant to support research into the dynamics of interactions and feedbacks between human and natural systems, with a genuine balance among those areas. Highlights relevant to interdisciplinary review processes include the following, with points (b)-(e) extracted directly from the book's case study (italics added):

- a) The three NSF directorates (Biological Sciences, Geosciences, and Social, Behavioral and Economic Sciences) reflect good interdisciplinary practice as co-funders in their joint management of the programme and its review processes, for instance rotating the leadership among programme managers on an annual basis and over time evolving to a collective vision. The three programme managers alert their communities to the programme, suggest reviewers, attend panel meetings and participate in the winnowing of proposals.
- b) "written reviews from both the natural and the social sciences are secured"
- c) "in selection of panel members, programme officers consciously look for people with broader outlooks and expertise across a range of areas (people who are comfortable evaluating the breadth of proposals received;"
- d) "at the beginning of each advisory panel meeting (which lasts two-and-a-half days) at least one hour is spent talking about the philosophy of the programme, to make sure all panellists have a common understanding"
- e) "With this 'coaching', each panel develops a collective view, interacting through stimulating discussions and ensuring that both natural and social science components of proposals are sound."

## RCUK Rural Economy and Land Use (RELU)

The large-scale, ten-year, multi-funder initiative Rural Economy and Land Use (RELU) is recognised as having helped to pave the way among research funders for recognition of the value (and potential for quality) of interdisciplinary research; this and evidence for enhancement of impact-generation capacity by interdisciplinarity was shown in the non-academic impact evaluation conducted by Meagher (2012). Earlier in RELU's "life", Meagher and Lyall (2007)<sup>8</sup> conducted an evaluation for RELU of its own "seed-corn" scheme, involving Capacity Building Awards, Scoping Studies, Development Awards and Networking Awards. Perhaps pertinent to ESPA's earlier grants, as well as to its overall aims of helping a new, interdisciplinary community to mature, findings included:

- a) "seed-corn funding can play very important roles in catalysing interdisciplinarity and the building of interdisciplinary communities with increased capacity to tackle complex problems"
- b) "The seed-corn awards mobilised interest in the RELU programme, engaging diverse researchers in its issues."
- c) "Follow-on activity includes full-project bids to RELU, which in many cases appear to have been strengthened by seed-corn experience."
- d) "Issues of assessment appropriate to interdisciplinary bids also arose. ... Individuals were keenly aware of the importance of assessment issues, particularly the need to select or train assessors who can place appropriate value on proposals showing genuine interdisciplinarity."

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<sup>7</sup> *Interdisciplinary Research Journeys: Practical Strategies for Capturing Creativity* (Lyall et al. 2011, Bloomsbury Academic, pp 148-9)

<sup>8</sup> Executive Summary, and p. 26, Review of the RELU Programme's Seed-Corn Funding Mechanisms, <http://www.relu.ac.uk/news/Evaluation.htm>



- e) “If several funding bodies are involved, they should expect to take more time than for a conventional mono-disciplinary programme to design a joint seed-corn scheme, define common objectives and expend more energy streamlining administrative burdens.

### **Mistra, the Swedish Foundation for Strategic Environmental Research**

In Sweden, Mistra, the Swedish Foundation for Strategic Environmental Research has funded research programmes related to environmental issues and sustainable development since 1994. A recent evaluation<sup>9</sup> concluded that, particularly with its close involvement of stakeholders, Mistra’s research programmes have been highly influential; it also acknowledged the challenges inherent in collaboration across subject boundaries and the importance of good programme leaders. A separate survey conducted by Mistra<sup>10</sup> showed that “Mistra is regarded as the best Swedish research funder in terms of interdisciplinary research initiatives”. As we understand it, there are several points about Mistra’s decision-making that may contribute to thinking about interdisciplinary review processes generally:

- a) Mistra funds quite large programmes (which may have a number of projects within each); these need to address Mistra’s twenty-year inclusion of interdisciplinarity in its terms of reference. Attention is paid to communicating clear criteria, to applicants and reviewers.
- b) Panels are composed carefully to include different disciplines, but also different backgrounds including stakeholders. A balance is seen as needed between having a mixture of some specialised people (although not so many as to create an over-large panel, no more than 10 members) and the important inclusion of some people who have expertise in working in an interdisciplinary way.
- c) Briefing materials are sent ahead to reviewers, explaining the (interdisciplinary, useful) mission of Mistra, the call describing the problem to be addressed, and about five evaluation criteria, one of which is to look at science quality, especially interdisciplinary research and how social sciences are included with natural sciences, and another is bridging of science with policy and practice.
- d) Reviewers are also given an introduction when they arrive for the review process, which will typically last 3-4 days in the selection of one winner from several proposals. The core teams of applicants are available for discussions during this time.
- e) An observation made is that projects that are funded must not only be good scientifically, but also, in most cases, “*a gold standard*” from an interdisciplinary point of view; if only conventional projects are selected, people will think interdisciplinarity is not actually important.

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<sup>9</sup> Hedin and Eriksson, described 28 June 2013 on Mistra’s website <http://www.mistra.org/en/mistra/news/news-archive/2013-06-28-effects-of-20-years-research-evaluated.html>

<sup>10</sup> <http://www.mistra.org/en/mistra/news/news-archive/2012-10-16-confidence-in-mistra-very-high.html>

## CONCLUSIONS AND RECOMMENDATIONS

### Learning through the phases of ESPA

In many ways, the 2011 round was a watershed year for ESPA in terms of learning about review processes for interdisciplinarity and likelihood of impact. The 2011 round followed 28 smaller Partnership and Project Development grants and 18 Framework grants, which afforded some individuals early experience with the ESPA concept and with interdisciplinarity, and which also served to help promote the ESPA aims and criteria. During the design and consultation phase, there had been 11 Strengthening Research Capacity projects. (For the most part, the Directorate found that applicants were generally positive about the process, although citing some issues of difficulty with the application process and, at times, quality of feedback.) During one of our focus groups, the point was made that people do not generally appreciate how long thinking through something can take in science, particularly in interdisciplinary work. The early grants thus helped people develop ideas and consortia. However, their review processes had to tackle the challenges of assessing interdisciplinarity, perhaps especially challenging when the 'hybrid' concept of pairing Ecosystem Services with Poverty Alleviation was still very new. Apparently, the 2012 round was not in the original plan for ESPA; the 2013 round had been, but the scope was changed to be "more directed than it would have been at the outset". Experimenting and learning, and drawing in very large part upon the review written in February 2012 by the ESPA Director and a colleague, the 2012 round implemented widely-praised changes, particularly in the staging of the review process (with expressions of interest sifted prior to full proposals) and clarity of communication. This took a great deal of attention. While a staged process in selection was also appreciated, an issue raised was the speed with which the subsequent 2013 call for proposals had to be put together, with one interviewee noting that "we didn't have nearly such a clear call, it was vague, a much more interdisciplinary question... so a lot of proposals were also vague and hard to assess." The expectation is that there will be one more round of small, synthesising awards; clarity of aims and thus review criteria for these will be important.

### Conclusions

Conducting this review has led us to several key conclusions regarding ESPA's review processes:

- 1) The programme Ecosystem Services for Poverty Alleviation (ESPA) has been an ambitious attempt to simultaneously carve out a new conceptual niche of excellent research and to promote new ways of working, via interdisciplinarity in particular, with a firm orientation toward addressing complex, pressing world problems through identified pathways to impact. This combination of goals has created challenges for review processes in the selection of proposed research projects.
- 2) In effect, ESPA has served as an experiment in review processes for interdisciplinary research. ESPA's phases include the initial Strengthening Research Capacity grants, Partnership and Project Development Grants, and the 2011, 2012, and 2013 waves of funding. Examination of experiences and insights from ESPA's several phases can thus inform a critical inflection point which has often been a severe obstacle to the pursuit of high quality interdisciplinary research.
- 3) The experiences of the 2011 ESPA review process in particular throw into sharp relief various problems that can stifle interdisciplinarity, for example: differing views among co-funders; lack of clarity as to desired definition or weighting of interdisciplinarity in calls for proposals and other guidance; use of numerous reviewers not fully informed or comfortable with the programme's interdisciplinary goals; an overburdened, over-large

review panel trying to tackle synthetic deliberations of research excellence, interdisciplinarity and impact in the face of numerous lengthy proposals.

- 4) The ESPA programme has evolved over time, commendably learning lessons to improve its review processes (e.g. from the Directorate's 2012 report) and thus offer good practices. In contrast to the 2011 experience, a central example is the 2012 introduction of a staged process, so that expressions of interest can be sifted to a manageable number of proposals with a realistic fit to the programme's goals. With this staging has come interaction, so that through workshops, discussions with the director and so on, applicants increase their understanding of the programme's criteria. Another key improvement has been the enhancement of preparation, for peer reviewers but particularly for review panel members, in the form of guidance materials, presentations and a mock panel session prior to deliberations. Through the cumulative effect of the framing of calls, the training of reviewers, the review processes and the funding and implementation of selected research projects, with help and facilitation of linkages from the directorate, a community is maturing in a new research theme.
- 5) Concerns expressed by some that the 2013 process was hurried, with an overly general call making it more difficult to distinguish among proposals, underscore the lesson learned as to the fundamental importance of taking time to ensure clarity in framing criteria from the start.
- 6) Future funders of interdisciplinary initiatives can learn lessons from ESPA as they design and implement review processes. In their own review panels, they might in addition take advantage of experiences gained by ESPA researchers and panel reviewers who have shown themselves to be capable of thinking widely yet critically about interdisciplinary research.

## Recommendations for Future Funders in Evaluating Interdisciplinarity

### Clarity of Expectations

An oft-repeated refrain is that ***funders need to communicate clearly their expectations for interdisciplinarity to applicants, peer reviewers and panel reviewers.*** So, for example, while ESPA was generally regarded as conveying that interdisciplinarity was important, there was some uncertainty as to the deeper meaning of 'interdisciplinarity' as a functional selection criterion. There was also uncertainty as to the relative weight of that criterion compared to the conventional criterion of research excellence and the newer criterion of demonstrable pathways to impact. Clarity improved over time, particularly with efforts made in the review process and with the review panels; future funders could make use of this lesson from the start.

### Management of the Review Process

***Funders need to structure and manage the overall review process appropriately for the complexity of interdisciplinary (and potentially impact-generating research programmes.*** In this regard, the most frequently offered lesson learned from ESPA was to stage proposal processes, such that short expressions of interest can be sifted first, for fit to the goals of a programme, and then that more effort-consuming proposals are requested from only a smaller group of applicants with a reasonable chance of succeeding. Other suggestions worth considering were to consider careful staging of tranches of funding, perhaps for example delaying the largest grants until later in the programme, when goals, researchers, reviewers and funders themselves become better aligned. Indeed, when multiple funders are involved in the inception and review processes of a novel

interdisciplinary programme, their own relationship-building may not be unlike that of interdisciplinary researchers, mandating time, communication and trust-building.

#### Composition and Preparation of Review Panels

The potential for discipline-centric reviews to “torpedo” innovative proposals is becoming widely recognised. Certainly, care needs to be taken when selecting peer reviewers, ideally to include among them those with some breadth of mind beyond their own discipline, and definitely providing them with guidance as to how to approach reviewing interdisciplinary proposals. Then, their reviews need to be collated in a transparent way (for example, indicating the disciplinary background of the peer reviewer) in full recognition that each review will tell only part of the story. However, ***funders need to pay particular attention to the review panel stage, as it is here that the crux of interdisciplinary proposal evaluation occurs.*** Insights arising from ESPA emphasise the importance of:

- selection of panel members, representing a mix of disciplines but also including individuals who themselves appreciate/have worked in interdisciplinary research
- selection of panel chairs who are extremely comfortable with interdisciplinarity and can tactfully but effectively lead discussions that elicit multiple perspectives (disciplines, countries, areas of impact) while yet coming to agreements that synthesise criteria including interdisciplinarity
- preparation of the review panel which is critical, not only through clear guidance materials beforehand, but also through presentations and discussion with the group prior to deliberations on proposal selection. In this regard, the ‘mock panel’ exercise developed by the ESPA Secretariat is commendable, and is already being adopted by other funders.

#### Awareness of the Challenges of Interdisciplinarity

Funders are encouraged to continue funding interdisciplinary research, particularly if they wish to tackle complex problems, ideally with pathways to impact. At the same time, ***funders need to appreciate that interdisciplinary research is challenging*** and likely to take extra time, and that building/managing interdisciplinary teams requires extra effort. In terms of challenges in reviewing, funders are encouraged to make the extra effort to establish processes and select/prepare reviewers in ways that overcome the status quo, of reviewers tending to advocate for their own areas or to undervalue innovation at the interfaces of disciplines. Funders might even develop subsets of peer review colleges as pools of experienced interdisciplinary reviewers.

#### Learning and Adapting

***Funders need to be willing to learn and adapt throughout the life of a programme promoting interdisciplinary research.*** For example, ESPA and its funders were praised for their willingness to learn and adapt review processes over time, with the shift to a staged review process the most cited example. This shift was accompanied by a move to a smaller number of more appropriate reviewers. ESPA adjusted its review processes to include mechanisms (such as early-stage input from the directorate or programme executive board) for identifying ‘fit’ to the interdisciplinary goals of the programme. Reflection, or indeed formative evaluation, can help flexible funders improve review processes as the programme matures. And, of course, multiple funders joining together in one initiative could themselves pursue good practices for interdisciplinary researchers, such as taking time to understand each other’s aims, develop common goals and build trust.

## ANNEX A: Core Questions Framework

- I. Was communication of desired interdisciplinarity effectively communicated/made explicit throughout calls for proposals, definition of criteria, application format, materials sent to reviewers?
- II. Similarly, how was likelihood of impacts on international development communicated and reviewed as a criterion?
- III. What burdens were placed on applicants (during different calls, treatments)?
- IV. What burdens were placed on the Directorate (during different calls, treatments)?
- V. What responsibilities/roles were expected of reviewers (during different calls, treatments)?
- VI. What was the actual nature of the later training of panel reviewers?
- VII. What components of the total review process seemed effective? Not effective?
- VIII. What issues have arisen regarding review processes? How have they been addressed?
- IX. Is there any perceived connectivity between an application process selecting for interdisciplinarity and subsequent behaviours at either the project or Directorate level?
- X. Could/should there be in the future? (How can the Directorate build upon evaluation criteria to foster interdisciplinarity in selected projects?)
- XI. What lessons were learned about these early phases that could benefit future funders of interdisciplinarity? Future funders of research aiming for influences on development?

## ANNEX B: Semi-structured Interview Template

1. Was *interdisciplinarity* communicated clearly as a goal/criterion for ESPA?  
(to what degree/in what way in different situations, e.g. calls for proposals, definition of criteria, application format, materials sent to reviewers?)
  
2. Was *likelihood of impacts on international development* communicated clearly as a goal/criterion for ESPA?  
(to what degree/in what way in different situations, e.g. calls for proposals, definition of criteria, application format, materials sent to reviewers?)
  
3. Do you have any views as to the '*burdens*' placed during different calls/treatments on:  
Applicants?  
Directorate?  
Reviewers?
  
4. How would you describe any *training* that took place for *panel reviewers*, relative to the *roles and responsibilities* expected of them?
  
5. What *components of the total review process* seemed effective? Not effective? Did the processes successfully attract and select projects with desired characteristics?
  
6. What *issues* have arisen regarding review processes? How have they been addressed?
  
7. Do you see any *connectivity* between an application process selecting for interdisciplinarity and *subsequent behaviours* at either the project or Directorate level? If appropriate, how might the Directorate build upon evaluation criteria to foster interdisciplinarity in selected projects?
  
8. What "*lessons learned*" about review processes would you offer to future funders of interdisciplinarity? To future funders of research aiming for influences on development?

## **ANNEX C: Focus Group Discussion Template**

### **I. Selection Criteria**

**I.A.** To what extent were/are you aware of interdisciplinarity as a criterion for selection of ESPA projects? Of potential for impact on development as a criterion?

**I.B.** How did you find the experience of responding to these criteria as an applicant?

### **II. Manifestation of Criteria**

What mechanisms might help projects ensure they deliver on the interdisciplinarity and impact goals stated in the review criteria?

### **III. Advice**

Given your experience with ESPA to date, what “lessons learned” or advice about review processes would you offer to future funders of complex initiatives involving interdisciplinarity and/or pathways toward impacts such as influences on development?

## Annex D: Survey Instrument



## INTRODUCTION

This survey is a key part of a mid-course study of the review processes utilised in the selection of ESPA projects. We are conducting this study for the ESPA Directorate, in order to gather lessons learned for the future benefit of ESPA and of research funders more broadly. Findings from this study should illuminate the proposal review/selection stage as a critical inflection point for interdisciplinary research and indeed for research seeking to have impact on complex issues.

This brief survey is designed to capture experiences and insights from a variety of individuals with informed perspectives. You have been selected as a survey recipient due to your involvement with the ESPA programme, and we look forward to your insights.

Responses will be kept anonymous.

If you have any questions, please contact Dr Catherine Lyall [clyall@informationbrowser.com](mailto:clyall@informationbrowser.com)

Thank you

## BACKGROUND

**1. It would be helpful to know your organisation/institution (although responses will be anonymised in all reports):**

**2. Please tell us what your role was relative to ESPA (select ONE):**

- Peer reviewer
- Panel member
- Panel Chair
- Lead applicant (successful)
- Lead applicant (not successful)
- Other (please specify)

### 3. Please tick ALL the funding competitions with which you were involved:

- ESPA-2011
- ESPA-2012
- Strengthening Research Capacity grants
- Partnership and Project Development grants
- Can't remember
- Other (please specify)

## COMMUNICATION OF CRITERIA

### 4. Information about the desirability of an **INTERDISCIPLINARY** approach to the research was clearly conveyed in the following materials:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember	N/A
Calls for proposals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Definition of assessment criteria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Application forms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guidance sent to reviewers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Briefing papers at panel sessions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 5. Information about the desirability of **IMPACTS** on international development was clearly conveyed in the following materials:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember	N/A
Calls for proposals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Definition of assessment criteria	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Application forms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guidance sent to reviewers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Briefing papers at panel sessions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## APPLICANT RESPONSIBILITIES AND GUIDANCE

Questions 6 and 7 are for APPLICANTS ONLY. If you were a reviewer or panel member please go to Question 8.

### 6. Your experience of the proposal writing process:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember
It was relatively straightforward to meet the requirements of the funding call	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparation of materials required for the bid was excessively burdensome	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Guidance was available from the funders while proposals were being written	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A two-stage process with initial Expression of Interest followed by full proposal is a good approach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 7. As an applicant, please identify and rank the usefulness of any of the following guidance that you may have received specifically regarding interdisciplinarity and/or likelihood of impact on development

	Very useful	Quite useful	Not useful	Can't remember	N/A
Copies of the Call for Proposals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Description of ESPA Programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ESPA's Knowledge Strategy and/or Impact Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NERC's written guidance for applicants	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Informal discussion with Directorate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Grant development workshop (2012 awards only)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

## REVIEWER RESPONSIBILITIES AND GUIDANCE

Question 8 is for REVIEWERS/PANEL MEMBERS ONLY. If you were an applicant please go to Question 10.

### 8. Your experience of the peer review process

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember
Reviewing for ESPA was straightforward	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a reviewer, I wish I had received more guidance on assessing interdisciplinarity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
As a reviewer, I wish I had received more guidance on assessing likelihood of impact on international development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A two-stage process with initial Expression of Interest followed by full proposal is a good approach	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

### 9. As a reviewer, please identify and rank the usefulness of any of the following guidance that you may have received in helping you to assess interdisciplinarity and/or likelihood of impact on development

	Very useful	Quite useful	Not useful	Can't remember	N/A
Copies of the Call for Proposals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Description of ESPA Programme	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ESPA's Knowledge Strategy and/or Impact Strategy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
NERC's written guidance for reviewers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Briefing paper prior to review panel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chair and/or Secretariat verbal discussion during review panel	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Informal discussion among reviewers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Other (please specify)

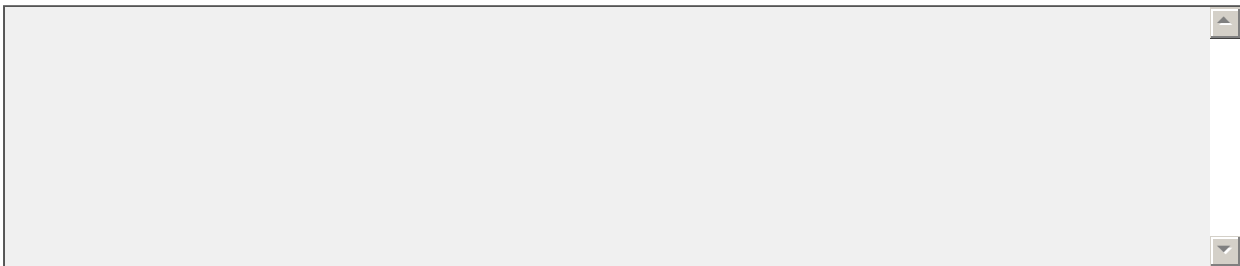
## ISSUES

We would like to learn about any issues you experienced with the ESPA review process.

### **10. No major issues were associated with the ESPA review processes**

Strongly agree     Agree     Neutral     Disagree     Strongly disagree

**11. If you answered Disagree or Strongly Disagree to the previous question, please provide a brief description of an issue that you think should be noted. If possible, please also describe how the issue was addressed – or how such an issue could be addressed in future**



## CONNECTIVITY BETWEEN REVIEW CRITERIA & IMPLEMENTATION

**12. Explicitly including interdisciplinarity and pathways to impact in the review criteria makes it more likely that these dimensions will actually be implemented in projects**

- Strongly agree     Agree     Neutral     Disagree     Strongly disagree

**13. Guidance or help from the ESPA Directorate following peer review could enhance the ability of individual selected projects to implement interdisciplinarity/impact pathways**

- Strongly agree     Agree     Neutral     Disagree     Strongly disagree

**14. If you answered Agree or Strongly Agree to the previous question, please describe very briefly the most useful step the Directorate could take to build upon the review criteria and help projects develop genuine interdisciplinarity and pathways to impact**



## ADVICE FOR FUTURE FUNDERS & REVIEWERS

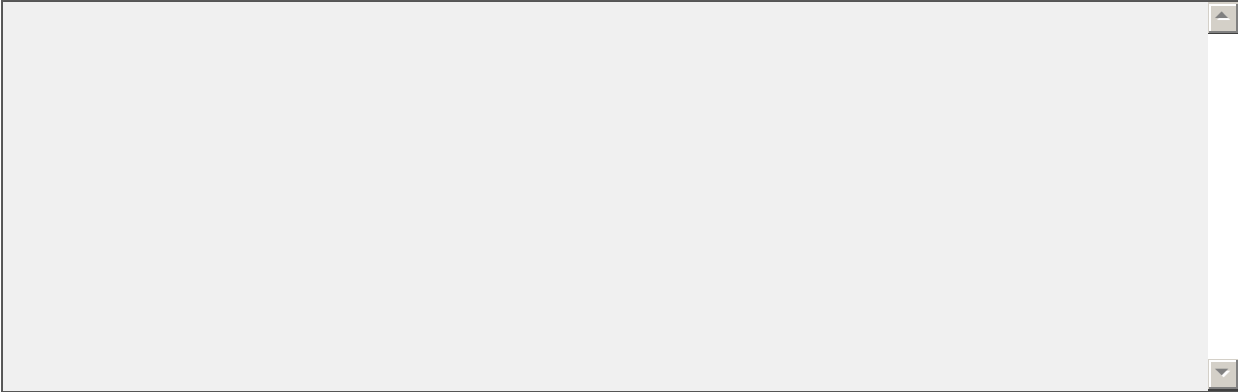
**15. What is the most important piece of advice or lesson learned about the review process that you would pass on to future funders seeking interdisciplinarity and/or impacts on complex problems?**



## CONCLUDING POINTS

Thank you very much for taking the time to complete this survey; your responses are an extremely valuable contribution to our effort to illuminate the critical step of review processes when funders seek interdisciplinary integration and/or impacts.

**16. If you have any additional comments to make, please feel free to offer them here.**



## ANNEX E: Survey results

**Table 1: Respondent's role within ESPA**

	Response %	Response Count
Peer reviewer	30%	29
Panel member	23%	22
Panel Chair	1%	1
Lead applicant (successful)	38%	36
Lead applicant (not successful)	7%	7
Other (please specify)	1%	1
<i>answered question</i>		<b>96</b>

Note: We wanted to keep the survey simple in order to encourage responses. While recognising that some respondents may have performed multiple roles within ESPA, we wanted to force them to answer according to their primary role thereby avoiding complicated sub-questions. This partly explains why twenty respondents selected the 'Other' category when asked about their role in Question 3. On investigation, several of these had identified themselves as Co-Is but had been listed in the contacts database provided by ESPA as PIs and were hence adjusted to the 'Lead applicant successful' category; in some cases a judgement was made based on the respondents' comments which, for example, suggested that they had held multiple roles but had answered primarily from a particular standpoint. After these data preparation adjustments, only one response remained in the 'Other' category where the respondent had misunderstood the question and had given their job title as the response.

**Table 2: Respondent's organisation or institution**

	Response %	Response Count
Charity, International	2%	2
Charity, UK	1%	1
International body	5%	4
Research institute, International	11%	9
Research institute, UK	6%	5
University, International	14%	11
University, UK	58%	47
University, unknown	1%	1
Unknown	1%	1
<i>answered question</i>		<b>81</b>

**Table 3: Experience across ESPA funding competitions**

	Response Percent	Response Count
ESPA-2011	52%	49
ESPA-2012	52%	49
Strengthening Research Capacity grants	6%	6
Partnership and Project Development grants	23%	22
Can't remember	10%	9
Other (ESPA 2013)	7%	7
Other (PFG)	4%	4
Other (miscellaneous)	3%	3
<i>answered question</i>		<b>94</b>
<i>skipped question</i>		<b>2</b>

**Table 4: Clarity of information about interdisciplinary goals of programme**

Information about the desirability of an INTERDISCIPLINARY approach to the research was clearly conveyed in the following materials:								
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember	N/A	Response Count
Calls for proposals	47.8% (43)	37.8% (34)	4.4% (4)	0.0% (0)	0.0% (0)	5.6% (5)	4.4% (4)	90
Definition of assessment criteria	28.4% (25)	48.9% (43)	10.2% (9)	0.0% (0)	1.1% (1)	9.1% (8)	2.3% (2)	88
Application forms	27.0% (24)	40.4% (36)	11.2% (10)	3.4% (3)	0.0% (0)	11.2% (10)	6.7% (6)	89
Guidance sent to reviewers	23.0% (20)	34.5% (30)	4.6% (4)	1.1% (1)	1.1% (1)	4.6% (4)	31.0% (27)	87
Briefing papers at panel sessions	21.7% (18)	18.1% (15)	8.4% (7)	0.0% (0)	0.0% (0)	9.6% (8)	42.2% (35)	83
							<i>answered question</i>	<b>90</b>
							<i>skipped question</i>	<b>6</b>

**With N/A responses removed:**

Answer Options	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember	Response Count
Calls for proposals	50.0%	39.5%	4.7%	0.0%	0.0%	5.8%	86
Definition of assessment criteria	29.1%	50.0%	10.5%	0.0%	1.2%	9.3%	86
Application forms	28.9%	43.4%	12.0%	3.6%	0.0%	12.0%	83
Guidance sent to reviewers	33.3%	50.0%	6.7%	1.7%	1.7%	6.7%	60
Briefing papers at panel sessions	37.5%	31.3%	14.6%	0.0%	0.0%	16.7%	48

**Table 5: Clarity of information about international development impact goals of programme**

Information about the desirability of IMPACTS on international development was clearly conveyed in the following materials:								
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember	N/A	Response Count
Calls for proposals	40.9% (36)	36.4% (32)	8.0% (7)	0.0% (0)	1.1% (1)	6.8% (6)	6.8% (6)	88
Definition of assessment criteria	33.3% (29)	40.2% (35)	9.2% (8)	1.1% (1)	1.1% (1)	9.2% (8)	5.7% (5)	87
Application forms	28.7% (25)	41.4% (36)	9.2% (8)	2.3% (2)	1.1% (1)	10.3% (9)	6.9% (6)	87
Guidance sent to reviewers	21.8% (19)	28.7% (25)	9.2% (8)	0.0% (0)	2.3% (2)	5.7% (5)	32.2% (28)	87
Briefing papers at panel sessions	20.7% (17)	24.4% (20)	4.9% (4)	1.2% (1)	0.0% (0)	9.8% (8)	39.0% (32)	82
<i>answered question</i>								<b>89</b>
<i>skipped question</i>								<b>7</b>

**With N/A responses removed:**

Answer Options	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember	Response Count
Calls for proposals	43.9%	39.0%	8.5%	0.0%	1.2%	7.3%	82
Definition of assessment criteria	35.4%	42.7%	9.8%	1.2%	1.2%	9.8%	82
Application forms	30.9%	44.4%	9.9%	2.5%	1.2%	11.1%	81
Guidance sent to reviewers	32.2%	42.4%	13.6%	0.0%	3.4%	8.5%	59
Briefing papers at panel sessions	34.0%	40.0%	8.0%	2.0%	0.0%	16.0%	50

**Table 6: Experience of the proposal writing process**

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>	<b>Can't remember</b>	<b>Response count</b>
It was relatively straightforward to meet the requirements of the funding call	10.4% (5)	33.3% (16)	14.6% (7)	29.2% (14)	10.4% (5)	2.1% (1)	48
Preparation of materials required for the bid was excessively burdensome	20.4% (10)	34.7% (17)	28.6% (14)	10.2% (5)	4.1% (2)	2.0% (1)	49
Guidance was available from the funders while proposals were being written	4.2% (2)	52.1% (25)	27.1% (13)	10.4% (5)	2.1% (1)	4.2% (2)	48
A two-stage process with initial Expression of Interest followed by full proposal is a good approach	44.7% (21)	40.4% (19)	10.6% (5)	2.1% (1)	0.0% (0)	2.1% (1)	47
						<i>answered question</i>	<b>49</b>
						<i>skipped question</i>	<b>47</b>

**Table 6a: Experience of the proposal writing process cross tabulated with funding call**

	Please tick ALL the funding competitions with which you were involved:			
	ESPA- 2011	ESPA- 2012	Strengthening Research Capacity grants	Partnership and Project Development grants
<b>It was relatively straightforward to meet the requirements of the funding call</b>				
Strongly agree	6.3% (2)	4.0% (1)	0.0% (0)	15.0% (3)
Agree	40.6% (13)	36.0% (9)	20.0% (1)	20.0% (4)
Neutral	15.6% (5)	20.0% (5)	20.0% (1)	10.0% (2)
Disagree	25.0% (8)	28.0% (7)	20.0% (1)	40.0% (8)
Strongly disagree	12.5% (4)	12.0% (3)	20.0% (1)	15.0% (3)
Can't remember	0.0% (0)	0.0% (0)	20.0% (1)	0.0% (0)
	32	25	5	20
<b>Preparation of materials required for the bid was excessively burdensome</b>				
Strongly agree	21.2% (7)	16.0% (4)	40.0% (2)	30.0% (6)
Agree	39.4% (13)	24.0% (6)	20.0% (1)	30.0% (6)
Neutral	27.3% (9)	52.0% (13)	20.0% (1)	30.0% (6)
Disagree	9.1% (3)	8.0% (2)	0.0% (0)	10.0% (2)
Strongly disagree	3.0% (1)	0.0% (0)	0.0% (0)	0.0% (0)
Can't remember	0.0% (0)	0.0% (0)	20.0% (1)	0.0% (0)
	33	25	5	20

**Table 7: Applicants' views of effectiveness of specific guidance regarding interdisciplinarity and/or likelihood of impact on development**

	Very useful	Quite useful	Not useful	Can't remember	N/A	Response Count
Copies of the Call for Proposals	37.5% (18)	43.8% (21)	2.1% (1)	8.3% (4)	8.3% (4)	48
Description of ESPA Programme	35.4% (17)	50.0% (24)	2.1% (1)	4.2% (2)	8.3% (4)	48
ESPA's Knowledge Strategy and/or Impact Strategy	16.7% (8)	54.2% (26)	12.5% (6)	6.3% (3)	10.4% (5)	48
NERC's written guidance for applicants	6.3% (3)	45.8% (22)	14.6% (7)	20.8% (10)	12.5% (6)	48
Informal discussion with Directorate	4.2% (2)	29.2% (14)	16.7% (8)	8.3% (4)	41.7% (20)	48
Grant development workshop (2012 awards only)	6.7% (3)	22.2% (10)	11.1% (5)	4.4% (2)	55.6% (25)	45
Other (please specify)						3
					<i>answered question</i>	<b>48</b>
					<i>skipped question</i>	<b>48</b>

**N/A responses removed:**

Answer Options	Very useful	Quite useful	Not useful	Can't remember	Response count
Copies of the Call for Proposals	40.9%	47.7%	2.3%	9.1%	44
Description of ESPA Programme	38.6%	54.5%	2.3%	4.5%	44
ESPA's Knowledge Strategy and/or Impact Strategy	18.6%	60.5%	14.0%	7.0%	43
NERC's written guidance for applicants	7.1%	52.4%	16.7%	23.8%	42
Informal discussion with Directorate	7.1%	50.0%	28.6%	14.3%	28
Grant development workshop (2012 awards only)	15.0%	50.0%	25.0%	10.0%	20



**Table 8: Experience of peer review process**

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Can't remember	Response Count
Reviewing for ESPA was straightforward	11.8% (6)	51.0% (26)	19.6% (10)	11.8% (6)	3.9% (2)	2.0% (1)	51
As a reviewer, I wish I had received more guidance on assessing interdisciplinarity	7.8% (4)	21.6% (11)	27.5% (14)	41.2% (21)	0.0% (0)	2.0% (1)	51
As a reviewer, I wish I had received more guidance on assessing likelihood of impact on international development	15.7% (8)	25.5% (13)	23.5% (12)	33.3% (17)	0.0% (0)	2.0% (1)	51
A two-stage process with initial Expression of Interest followed by full proposal is a good approach	37.3% (19)	47.1% (24)	11.8% (6)	0.0% (0)	2.0% (1)	2.0% (1)	51
						<i>answered question</i>	51
						<i>skipped question</i>	45

**Table 9: Reviewers' views of effectiveness of specific guidance regarding interdisciplinarity and/or likelihood of impact**

	Very useful	Quite useful	Not useful	Can't remember	N/A	Response Count
Copies of the Call for Proposals	50.0% (26)	34.6% (18)	0.0% (0)	9.6% (5)	5.8% (3)	52
Description of ESPA Programme	40.4% (21)	48.1% (25)	1.9% (1)	5.8% (3)	3.8% (2)	52
ESPA's Knowledge Strategy and/or Impact Strategy	17.3% (9)	44.2% (23)	11.5% (6)	19.2% (10)	7.7% (4)	52
NERC's written guidance for reviewers	25.0% (13)	40.4% (21)	11.5% (6)	17.3% (9)	5.8% (3)	52
Briefing paper prior to review panel	13.5% (7)	32.7% (17)	7.7% (4)	15.4% (8)	30.8% (16)	52
Chair and/or Secretariat verbal discussion during review panel	32.7% (17)	15.4% (8)	9.6% (5)	9.6% (5)	32.7% (17)	52
Informal discussion among reviewers	25.0% (13)	13.5% (7)	9.6% (5)	9.6% (5)	42.3% (22)	52
Other (please specify)						4
					<i>answered question</i>	<b>52</b>
					<i>skipped question</i>	<b>44</b>

**With N/A responses removed:**

Answer Options	Very useful	Quite useful	Not useful	Can't remember	Response count
Copies of the Call for Proposals	53.1%	36.7%	0.0%	10.2%	49
Description of ESPA Programme	42.0%	50.0%	2.0%	6.0%	50
ESPA's Knowledge Strategy and/or Impact Strategy	18.8%	47.9%	12.5%	20.8%	48
NERC's written guidance for reviewers	26.5%	42.9%	12.2%	18.4%	49
Briefing paper prior to review panel	19.4%	47.2%	11.1%	22.2%	36
Chair and/or Secretariat verbal discussion during review panel	48.6%	22.9%	14.3%	14.3%	35
Informal discussion among reviewers	43.3%	23.3%	16.7%	16.7%	30

**Table 10: Comparing applicant and reviewer views of effectiveness of guidance materials**

	Applicants		Reviewers	
	Very useful	Quite useful	Very useful	Quite useful
Copies of the Call for Proposals	37.5% (18)	43.8% (21)	50.0% (26)	34.6% (18)
Description of ESPA Programme	35.4% (17)	50.0% (24)	40.4% (21)	48.1% (25)
ESPA's Knowledge Strategy and/or Impact Strategy	16.7% (8)	54.2% (26)	17.3% (9)	44.2% (23)
NERC's written guidance	6.3% (3)	45.8% (22)	25.0% (13)	40.4% (21)

**Table 11: Overall experience of ESPA review processes**

No major issues were associated with the ESPA review processes		
	Response %	Response Count
Strongly agree	11.0%	9
Agree	37.8%	31
Neutral	14.6%	12
Disagree	22.0%	18
Strongly disagree	14.6%	12
	<i>answered question</i>	<b>82</b>
	<i>skipped question</i>	<b>14</b>

**Table 11a: Overall experience of ESPA review processes cross tabulated with funding call**

	Please tick ALL the funding competitions with which you were involved:			
No major issues were associated with the ESPA review processes	ESPA- 2011	ESPA- 2012	Strengthening Research Capacity grants	Partnership and Project Development grants
Strongly agree	10.9% (5)	15.9% (7)	0.0% (0)	0.0% (0)
Agree	26.1% (12)	38.6% (17)	25.0% (1)	31.6% (6)
Neutral	19.6% (9)	13.6% (6)	0.0% (0)	15.8% (3)
Disagree	19.6% (9)	18.2% (8)	25.0% (1)	15.8% (3)
Strongly disagree	23.9% (11)	13.6% (6)	50.0% (2)	36.8% (7)
answered question	46	44	4	19

**Table 12: Overall experience of ESPA review processes**

No major issues were associated with the ESPA review processes					
	Please tell us what your role was relative to ESPA (select ONE):			Response Percent	Response Count
	Peer reviewer	Panel member	Lead applicant (successful)		
Strongly agree	27.3% (6)	9.5% (2)	3.1% (1)	12.0%	9
Agree	36.4% (8)	33.3% (7)	46.9% (15)	40.0%	30
Neutral	22.7% (5)	9.5% (2)	12.5%(4)	14.7%	11
Disagree	13.6% (3)	38.1% (8)	21.9% (7)	24.0%	18
Strongly disagree	0% (0)	9.5% (2)	9.3% (5)	9.3%	7
<i>answered question</i>					<b>75</b>
<i>skipped question</i>					<b>12</b>

**Table 13: Review criteria**

Explicitly including interdisciplinarity and pathways to impact in the review criteria makes it more likely that these dimensions will actually be implemented in projects		
	Response %	Response Count
Strongly agree	19.0%	16
Agree	51.2%	43
Neutral	19.0%	16
Disagree	8.3%	7
Strongly disagree	2.4%	2
<i>answered question</i>		<b>84</b>
<i>skipped question</i>		<b>12</b>

**Table 14: Information provision by funders**

Guidance or help from the ESPA Directorate following peer review could enhance the ability of individual selected projects to implement interdisciplinarity/impact pathways		
	Response %	Response Count
Strongly agree	13.1%	11
Agree	40.5%	34
Neutral	32.1%	27
Disagree	10.7%	9
Strongly disagree	3.6%	3
<i>answered question</i>		<b>84</b>
<i>skipped question</i>		<b>12</b>

## ANNEX F: Advice on review processes for future funders of interdisciplinarity

### Clarity of Expectations

- “Be very clear what you mean about interdisciplinarity in a proposal call. Is it good enough to have a team with different disciplines or do you have to showcase how you will integrate the different disciplines?”
- “Be honest at what level (interdisciplinarity) starts weighing into the decision-making process. People might spend a lot of time on the interdisciplinary team but not enough on defining arguments or need in terms of the science (and similarly with impacts).”
- “Funders should be clear about what criteria are weighted in what order so that proposals can adapt to that.”
- “The approach we’ve taken – we developed quite an explicit conceptual framework ... and used that for framing the calls.”
- “Do these steps carefully: designing the call, designing the Expression of Interest form, then the sift should almost be obvious.”
- “Make sure your call documents are crystal clear; invest the extra time to do that “A (possible) problem with expressions of interest – if the call isn’t really clear, people can fail on the EOI.”
- “Allow in the proposal process a much more flexible approach to defining the problem, gathering the data and aim(ing) at likely outcomes.”
- (With regard to likelihood of impact) “The sift process is pretty good, with the caveat that the call is well-defined and that the EOI is designed so that you can tell if the team is actually going to answer the question.”
- “In terms of impact, that needs to be part of it from the very beginning; it can’t be just a tick box. It might need more involvement from the Directorate to be sure it is actually happening.”

### Management of the Review Process

#### Staging:

- “I like the idea of the two-stage application. I find that enables people to put in a pitch and then, if they haven’t quite understood what interdisciplinarity is about or the spirit of the call or they haven’t put a great deal of attention to the impact arena or are unlikely to, they are knocked out without putting in much time. This worked well. ... When you’ve got a proposal that requires interdisciplinarity, impact and top quality science, you’ve got a challenge on your hands; they have to be very good to get through; so this way it is not a lot of people’s time.”
- “I am very much in favour of different stages.... Staging saves time for both applicants and reviewers.”
- “(Use) a sift stage, especially if there are large numbers – so just spending the reviewers’ time on (some) and it is kinder to the applicants.”
- “A multi-stage process that keeps winnowing out, at each stage. First stage – a concept note, then at each stage of the process those people who made it through had to do more work but they also had a better chance of success. By the end, the pool being assessed was smaller, and the number of reviewers diminished so we could make sure they really had the knowledge to do it.”
- “At each stage we feed applicants more information as well, to try to help steer them, drip-feeding as people can’t absorb too many things at once .... Broad framework first, then keep circling in, drip-feeding information till they get to the right level of focus.”
- “(Have) a staged approach; use a concept note stage and work closely with the research community so a common understanding.”
- “Ask for expressions of interest to develop consortium projects ... fund only consortium

development projects that have a chance of reaching fruition. Perhaps even obligate yourself to guaranteeing an interview for all projects developed through the process... keep the volume of material to be reviewed, rebutted and re-reviewed to a manageable amount.”

- When it comes to a final stage, having a presentation and interview process can be very useful, with an opportunity for the team (ideally including videoconference presence for international partners) to respond to criticisms. (FG)

Informing:

- “Hold workshops to discuss calls.”
- “A key lesson – do not assume you can write on a piece of paper and they will do it; you actually have to go through and engage with people. People often read what they want to read (and for example re-work old bids). .. Certainly a lesson is to have a two-stage process, and a workshop to explain, and help guide people through the process. That made a huge difference in quality. Trying to do it in on hit is dangerous.”
- “In terms of selection process, for some programmes (informal discussion helping in proposal preparation) is definitely beneficial ... (and this suggests that) a directorate not be involved in selection.”
- “It only makes sense to educate the research community to address objectives and criteria you put out in a programme, and at the same time educate the reviewers to look at it from the same perspective. Otherwise you are doing everyone a disservice, and a waste of time and money.”
- “Better think about educating reviewers, as well as the community.”

Conducting the Process:

- “Make sure your review process is rigorous, transparent and fair; that people who can spot an impact pathway when they see one are put in charge of the process”.
- “In light of different conceptual approaches and understandings upon (how) interdisciplinarity might be conducted, a robust and transparent review process –not dominated by an individual perspective – is essential.”
- “It would be useful to know how the panel ranking process is conveyed to the executive panel making decisions on funding.”

### Composition and Preparation of Review Panels

Selecting Panel Reviewers:

- “Try to get those with true interdisciplinary skills on the panels, we would have invested more on that if had more time.”
- “You need a sufficient number of people on a panel who have experience and expertise in interdisciplinarity per se, rather than relying on people really just looking at one disciplinary box. ... Recognise interdisciplinarity as a specialism... (but) you have to avoid giving suggestion of being too evangelical. Interdisciplinarity certainly as a role but it is not the only road ... interdisciplinarity should be seen as one path, one tool in the box.”
- “You want to have people on the panel who are interdisciplinary, rather than just representatives of a discipline.”
- “Look for people with this sort of interdisciplinary background.”
- “Promote researchers and approaches that are genuinely inter-disciplinary within the decision-making process, even if they do not have the prestige of some of the disciplinary specialists working in the field.”
- “There need to be a greater proportion of interdisciplinarians on the panel. When you get these different epistemologies, getting agreement is always going to be difficult. ... It's the inability of academics to see that working at the interface is noble enough without



being groundbreaking social or natural science. Actually working at the interface is the difficult bit and reviewers do not accept that; they want it to be cutting edge social or natural science.”

- “Select either a range of panellists from an interdisciplinary perspective or pick people with previous experience of interdisciplinary research; you need a little of both. If they are specific knowledge people, they will probably need training. ... Interdisciplinary reviewing-specific training could be a good idea, though some people just get it or don’t.”
- \*Thought needs to go into the composition of the panel and who can represent (what areas, e.g. overseas or development).”
- “Make sure you have the best chair you can for the process, and a chair that can make sure views are balanced across members.”
- “Select the head of the panel very wisely and make sure they stick to a very objective, panel-based decision-finding process throughout the process”
- “Possibly a chair with interdisciplinary background --- able to listen to a range of different perspectives”.
- “I think the chairing of the review process is critical. A chair with real, long-term interdisciplinary experience and a commitment to this way of working is key for setting the tone of the assessment and for drawing on the strengths of the members of the review panel.”
- “It may be possible to draw up a list of say 60 people who could constitute a core group of reviewers for the duration of (a) programme or for particular funding rounds for a 24/36 month period. They could then be trained and thoroughly familiarised with the funder’s R&D agenda and thereafter called upon to review proposals. They would recuse themselves as and when a conflict of interest was identified in relation to any proposal. The reward could be the kudos of being ‘appointed’ to this review ‘chamber’.
- “At the end of the day, there are probably more people with interdisciplinary understanding than twenty years ago, but it is a painfully slow process.”

#### Preparing Panel Reviewers:

- “More work needs to be done in making sure the panel are aware of what the programme is trying to achieve, and what considerations they ought to be taking into account.”
- “Train reviewers... or at least spend a day of discussion and information ... building a common understanding of what is the overall aim of the programme.”
- “Give very clear directions to reviewers and panellists.”
- “Clarification in relation to the panel discussion and scoring on the day before the actual panel discussion was very useful and helped me to understand better the roles and responsibilities of the panel members during the discussion. This helped me to better prepare for the next day but it would be good to make some of that more explicit in the guidance sent out prior to the panel so that panel members can use that to score the proposals and write comments.”
- “(Use) a mock panel – we can see the difference it makes and have very direct feedback that it works.”
- “Have some sort of support function, as NERC provided with the secretariat, to help with questions as reviewers read documents.”
- “There really has got to be enough time for these reviews (panels).”
- Ensure that interdisciplinary research programmes are open minded and not excessively prescriptive ... In light of different conceptual approaches and understandings upon (how) interdisciplinary might be conducted, a robust and transparent review process - not dominated by an individual perspective - is essential. My experience...is that the different funding agencies came at the programme from different directions with different expectations and criteria.
- “Would it be better to have a college of reviewers, a set of reviewers who commit to ESPA (for example)? The benefit is that you get people signed up to it for a number of

years and they do it thoroughly. But then it is so important to get the right mix of people! Especially interdisciplinary. ...You would have to build in mechanisms to help panel members resist lobbying, but there would be the same core of people available to see the process through.”

General comments/peer reviewers:

- Generally when researchers are trying to do something difficult, ask reviewers to focus on the bits they are expert in; don't expect so much of one reviewer. Having a lot of academics is better, with a better chance of balancing each other out. (FG)
- “Networking enables reviewers to have wider knowledge and serve better. This is especially so when reviewers from developing nations... interact with those from developed nations.”
- “Make it explicit on the review forms which aspects of the proposal individuals are able to comment on ... ask reviewers to comment specifically and separately on the area of their own expertise, plus on the interdisciplinarity aspects of the project, but not on the area that isn't in their expertise.”
- “Kindly ensure that peer reviewers are adequately informed about the required time for preparation (before peer review).

#### Awareness of the Challenges of Interdisciplinarity

- “Interdisciplinary work is essential – the challenge I guess is finding the sweet spot between superficiality and unrealistic expectations – has anyone found it yet?”
- “Fund this type of research and be critical and challenge people to come up with interdisciplinary ideas.”
- “It's extremely important and I thoroughly enjoy working in interdisciplinary teams, but it remains extremely challenging. Understanding how others are thinking inevitably takes much more time, for example generating a paper or a development impact.”
- “Interdisciplinarity per se may not be the important question but are all the necessary skills and expertise present in the team?”
- There is a danger of bodies commissioning interdisciplinarity still thinking that you have to have all the disciplines and then get them to work together, rather than recognising that there are individuals researchers who are themselves interdisciplinary –and that they are not of lesser quality. (FG)
- Interdisciplinarity is across a much wider range than just natural plus social science; the challenges of interdisciplinarity within social sciences is crucial, for example. (FG)
- Why can't we start with a social science question rather than a natural science problem, start with a political or cultural issue? It's about how you frame the question. (FG)
- “Interdisciplinarity and impact are NOT the same. So, overcome the implicit assumption that social science research is focussed on impact. That is simply not the case. Blue skies social science is as important as blue skies natural science. Both should be supported and both can contribute to interdisciplinary sciences.”
- “Developing country researchers have much more difficulty understanding this thing called multi-disciplinarity than developed countries. ... By default, if you did nothing, some requirements for interdisciplinarity research would act as a barrier for developing country researchers rather than facilitating their participation, so it is really important when designing calls not to generate unintended consequences. ... There are still some excellent multi-disciplinary teams and groups in developing countries, but less prevalent.”
- The programme has to make sure it promotes interdisciplinarity as world-class science to counter residual disciplinary snobbery .... Perhaps especially an issue for developing country partners. (FG)
- “The main problems are with academic reviewers.”
- “In general, reviewers do not understand interdisciplinarity well, and have limited appreciation for the difficulties involved in implementing interdisciplinary projects.”

- “There is need for more clarity in regard to interdisciplinarity and/or multidisciplinary.”
- “Take care to avoid tokenistic interdisciplinary engagement.”
- “Interdisciplinarity and complex problems do not necessarily require large (bloated) consortium projects.”
- “Although the total budget limit is substantial it is very hard to split the budget up over even a moderate range of relevant disciplines while guaranteeing high quality research from all the individual components and covering the bridging activities which are necessary to produce interdisciplinary synergy. To really investigate the feasibility of a large project (particularly to be sure that the budget will cover the required work) requires a lot of detailed planning, but it is difficult to convey complex plans to the reviewers.”
- “Really try to break down the barriers (so you are) looking at the proposals as a whole, not a series of components.”

### Learning and Adapting

Adapting at the project level:

- “There does need to be that level of flexibility for a project PI to pursue interesting things.”
- “During the actual implementation process, there is great pressure NOT to report on problems with interdisciplinarity, or with partners.”

Funders’ interactions:

- “Getting the governance of the programme right is very important; we invested a lot in that. That was a worthwhile investment even though it may have taken us a bit longer to get the programme agreed and approved..... Get governance right between funders, directorate, researchers... and get that right before you sing on the dotted line; it’s very hard to adjust once in full flow.”
- “A lot of issues involve deliberation (among funders) and discussions to improve understanding and that takes time.”
- “We (funders) used a consensual approach ... It does work, if all are prepared to compromise a certain amount.”
- “The way we’ve been able to communicate has improved in the same way as interdisciplinarity.”
- “The different funding agencies came at the programme from different directions with different expectations and criteria.”
- “Ensure that all research councils funding the programme are engaged in the review process to ensure the development of interdisciplinary knowledge.”
- “Not specifically about the review process ... that is not the be all and end all of the solution because you have to appreciate the cultural differences not only within the community but across the funders, and that is going to colour things. If you embark on this, you can’t just say ‘Well, get the process right’. That’s not enough; you really have to invest in building relationships across funders so you agree a message. If not, a confused message (will be sent out) and that doesn’t work. You have to be united.”

At the programme level:

- “I don’t know how we could have resolved the issue of getting huge (long-term) programmes up and running at the start, but we had to get going. Probably we could have started off with smaller calls and learned from it, but how then do you resolve issues of needing to get long-term projects going? Probably we could have taken another year, made sure systems were up and running and learned lessons before going out with a huge call. ... Maybe large calls should come in at end of year two.”
- “If you are starting off something new, you need to give the community time to develop, the best way is to do baby steps... would swap around, do small 6-12 months (projects), then medium, then finish with long projects. The problem is time scales and logistics.”
- “Continued reflexive learning is really important. It is time-consuming and can seriously annoy the community because they can feel you are shifting the goal posts. But, if we

are doing research, if we do not learn as we go, why are we paid?"

- "I thank the ESPA program for responding to feedback provided by the panel. It is great that funders and programs are willing to learn during the process of implementing a program."
- "I would like to add an appreciation of the fact that the programme has clearly worked hard in the 2012 call to address many of the 'issues' with the submission and review processes in past calls."
- "I have valued the time that I have spent as a reviewer for ESPA projects, since it has been a great learning experience for me as well."
- "We are still lesson-learning!"

Making the most of learning:

- "The difficulty now is that if people launch another programme, different officials will be there, no one will probably have memory of the problems to brief them ... Research Councils really try their best though they don't learn sufficiently, there is not sufficient memory. ... (Yet) A lot of the initial things (encouraging interdisciplinary research, getting researchers to organise networks initially, or scoping programmes and the like that will allow people to come together, and will give them time) – Research Councils actually do quite well. The problem does come much more at the reviewing stage where a number of people have insufficient knowledge of the programme but are making decisions... a lot of the problems are in the review panel. You've got people fighting for their individual disciplines."
- "Very pleased this study is going on. Lots of other calls ask for interdisciplinarity, but it is not clear how, it is more bolted on –which is harder for reviewers and applicants—so ESPA, which is interdisciplinary throughout, and RELU, are good points for learning from."