biodiversa

The ERA-NET promoting European research on biodiversity

Annex 1

Practical method note 8

Delphi method

PRACTICAL METHOD NOTE 8

WHAT IS THE DELPHI METHOD?

Named after the ancient Greek oracle, this tool was developed at the RAND Corporation in the early 1950s to investigate the potential impact of nuclear war[1]. The Delphi method has been used internationally across many studies and fields, for a wide range of purposes. The Delphi technique is a participatory method used in reflective research by structuring a group communication process so that it enables a group of individuals to deal with a complex problem. The method has a number of variations, but generally involves gathering feedback from a panel of experts over multiple rounds[2].

HOW TO USE THE DELPHI METHOD

In a typical process, panel experts respond to set questions without knowledge of the other panellists' responses. In the following rounds, responses are then presented back to each expert along with their own. Participants are given opportunity to revise their individual responses based on those of other participants. It is usual to have approximately three rounds, after which consensus or contrasting views emerge. The aim is not to reach consensus but rather to achieve a stability of responses, where no one panellist would change their view, even though they may disagree. By engaging a 'panel' of participants (normally experts) in an anonymous survey, the technique is used to generate opinion and/or consensus about a particular topic or policy issue over a series of iterative rounds (for a thorough review of the method and systematic guidelines for its application, see Donohoe and Needham[3]). The technique explores contrasting and minority views and opinions and can help understand uncertainty.

The Delphi method typically follows these steps:

1. Participant panel members' responses remain anonymous throughout.
2. Participants complete a series of written questionnaires developed by the researcher.
3. Questionnaires are returned to the researcher who collates the responses to the questions posed in each round and feeds these responses back to the participants for their consideration, giving each panel member the opportunity to adjust their responses accordingly, if they so wish.
4. The researcher uses these responses to identify areas of consensus and conflict, and presents these back to the panel for further comment.
5. Through exchanging information participants can change their positions in light of new evidence and generate new ideas.
6. The question posed needs to be asked over a series of stages to allow deliberation and iteration and to give participants time to consider their ideas and opinions in the context of others.
7. Ideally the Delphi process should be between 3 and 5 rounds.

BENEFITS AND DRAWBACKS OF THE DELPHI METHOD

The Delphi process enables a group of people to work together anonymously to reach a decision, develop ideas and/or gather knowledge on a topic. As such, it removes power imbalances amongst the group by preventing more powerful individuals from dominating the process[4,5]. As the questionnaire process does not require any face-to-face meetings it can be less costly to a project and participant, enabling them to complete questionnaires at a time and place that suits them. This enables extra flexibility to engage with the individuals outside of the usual consultant and geographically disparate groups. The process is flexible in that it can be applied to most situations and questions. As an iterative process it allows people to consider their own views in the context of those of others, which can lead to consensus-building and early identification of key barriers or points of potential conflict. The iterative nature of the Delphi method arguably works better than individual interviews because the structured feedback process increases creativity by widening knowledge and stimulating ideas[6].

However, in order to be effective, the process requires skilled facilitation, and may also require the responses and feedback to be collated by a non-biased individual, as the majority of power lies with the one individual collating the responses. As the process must take place over a number of rounds it is important that it is stimulating, or participant dropout rates may be high.

CASE STUDY
EXPERIENCES FROM BIODIVERSITY RESEARCH

The Delphi method can be used in a full participatory way: The Delphi method was used in each case study area for the HighARCS project (see the *Handbook* for a list of BiodivERsA projects) to capture multiple perspectives and to attempt to reach consensus on problems and potential solutions in relation to highland aquatic resources (see Bunting[7] for further details). Rather than using a conventional Delphi approach, which normally involves an expert panel, the HighARCs project implemented a stakeholder Delphi process, where a diverse range of stakeholders from different hierarchical levels, and with conflicting viewpoints, were asked to contribute their knowledge and opinions about aquatic resources.

Using the Delphi method can capture a lot of information: A stakeholder Delphi approach was viewed as a successful way of overcoming the limitations of workshops where it is difficult to capture all existing views and where there can be reluctance from participants to speak out in the presence of others.

The Delphi method may be viewed as 'formal' and hinder open discussion: Some drawbacks were also experienced. In one site there was hesitation from some senior forestry department stakeholders to engage in what was viewed as a formal process where their views would be recorded in writing. The process was viewed as alien and caused some tensions to arise. The researchers recommend carefully considering whether the Delphi method is the right method of engagement depending on the

CASE STUDY
EXPERIENCES FROM BIODIVERSITY RESEARCH

stage of the project, and how it might influence existing stakeholder relations. For example, if there is constructive open discussion ongoing it might be seen as a backward step to start a very structured and anonymous process such as the Delphi method.

Risk of stakeholder drop out: Methodological issues may also arise, due to the iterative and time-consuming nature of the Delphi method, where stakeholder representation change at different points or completely disappear from the process. In the case of HighARCS, stakeholder dropout raised questions over the validity of replacing them in subsequent rounds.

Stakeholders in Vietnam working on an action plan for the conservation and development of fisheries resources for the HighARCs project. Photo by Nguyen Phong.

SUGGESTED REFERENCES FOR THE DELPHI METHOD

1 LINSTONE, H.A. and TUROFF, M. (Eds.) 1975. The Delphi Method: Techniques and applications. Addison-Wesley Publishing Company, Advanced Book Program, pp. 37-71.

2 BENGSTON, D.N. 2012. Futures research: A neglected dimension in environmental policy and planning. In: BENGSTON, D.N. 2012. Environmental Futures Research: Experiences, Approaches, and Opportunities, Department of Agriculture, Forest Service, Northern Research Station, Pennsylvania, USA.

3 DONOHOE, H.M. and NEEDHAM, R. D. 2008. Internet-based Ecotourism Marketing: Evaluating Canadian Sensitivity to Ecotourism Tenets. Journal of Ecotourism, 7 (1), 1-29.

4 LANDETA, J. 2006. Current validity of the Delphi method in social sciences, Technological Forecasting and Social Change, 73, 467-482.

5 SCOTT, A.J. 2011. Focusing in on focus groups: effective participative tools or cheap fixes for land use policy? Land Use Policy, 28, 684-694.

6 POWELL, C. 2003. The Delphi technique: myths and realities. Journal of Advanced Nursing, 41, 376–382.

7 BUNTING, S. 2010. Assessing the Stakeholder Delphi for facilitating interactive participation and consensus building for sustainable aquaculture development. Society and International Resources: An International Journal, 23, 758-775.

Annex 1 of "*The BiodivERsA Stakeholder Engagement Handbook.* BiodivERsA, Paris (108 pp).

The BiodivERsA Stakeholder Engagement Handbook is available online at http://www.biodiversa.org/577

For further information on this report, contact:

Helen Baker (helen.baker@jncc.gov.uk) or Matt Smith (matt.smith@jncc.gov.uk)