



Bridging the gap between policy and knowledge  
on biodiversity in Europe

## Method 10

# Multiple expert consultation with formal consensus method such as Delphi

### Summary of method

This method is a subset of expert consultation, representing the most rigorous approach to eliciting expert knowledge. It combines the knowledge of multiple, carefully selected experts into either quantitative or qualitative assessments, using formal consensus methods such as the Delphi process (described and reviewed by Mukherjee *et al.* 2016), or other elicitation techniques, including Cooke's method of weighting experts for their accuracy, described in Martin *et al.* (2012).

Such approaches have been empirically demonstrated to generate estimates for ecological parameters that are more accurate than the estimates of the best-regarded expert in the group (Burgman *et al.* 2011).

### Key references

Burgman MA *et al.* (2011) Expert status and performance. *PLoS ONE* 6, e22998.

Martin TG *et al.* (2012) *Eliciting expert knowledge in conservation science*. *Conservation Biology* 26, 29-38.

Mukherjee N *et al.* (2015). *The Delphi technique in ecology and biological conservation: applications and guidelines*. *Methods in Ecology and Evolution* 6, 1097-1109.

Slocum N (2003). *Participatory Methods Toolkit. A practitioner's manual*. United Nations University, King Baudouin Foundation and the Flemish Institute for Science and Technology Assessment. Available from:

[http://archive.unu.edu/hq/library/Collection/PDF\\_files/CRIS/PMT.pdf](http://archive.unu.edu/hq/library/Collection/PDF_files/CRIS/PMT.pdf) Accessed 29/01/2017.

### Examples of application

Many examples of the use of Delphi to address environmental issues are described in Mukherjee *et al.* (2015). Lemieux and Scott (2011) documented the role of senior decision-makers in a Delphi process to identify and assess policy-relevant climate change adaptation options for protected area management by the Ontario Parks agency.



Lemieux CJ and Scott DJ (2011). Changing climate, challenging choices: identifying and evaluating climate change adaptation options for protected areas management in Ontario, Canada. *Environmental management*, 48(4), 675.

**Multiple expert consultation with formal consensus method such as Delphi**

Cost	Higher than expert consultation. Takes more time from the experts, but does not have to involve travelling. 1 week–1 month FTE organising time
Time required	1 week–2 months. Takes longer than expert consultation because at least two rounds of consultation are usually required
Repeatability	Moderate. Slightly higher than expert consultation
Transparency	Moderate. Can be increased by good reporting of method and elicitation process
Risk of bias	Moderate. Depends on expert selection, but combining expert opinions balances out biases. Biases associated with group decision-making are avoided or reduced by anonymous scoring
Scale (or level of detail)	All scales, level of detail much higher than simple expert consultation
Capacity for participation	Moderate. Can be done with a mixed group of stakeholders with very different areas of expertise
Data demand	Good overview of expertise/experts in the field needed for adequate selection; can depend on experts' access on data
Types of knowledge	Scientific, technical, opinion-based; explicit or tacit
Types of output	Judgements, forecasting, risk assessment
Specific expertise required	Good knowledge of the procedure required, including supporting software etc.

**Strengths**

Relatively fast  
Relatively low cost

**Weaknesses**

Demands quite a bit of expert time

Applicable to several types of knowledge  
More rigorous, repeatable and transparent than basic expert consultation  
Reduced risk of bias, compared to other forms of expert judgement

Usually no documentation of the evidence or studies used, but can be combined with summaries or systematic map  
Subject to bias from individual experts with strong unsubstantiated opinions, but much less than basic expert judgement

