Scientific Advice Mechanism

Group of Chief Scientific Advisers

Scientific Opinion "MAKING SENSE OF SCIENCE UNDER CONDITIONS OF COMPLEXITY AND UNCERTAINTY"

Outcomes of the Scoping Workshop

Brussels, 4 June 2018

Purpose

The present document presents the outcomes of the Scoping Workshop held on 4 June 2018.

The objective of the workshop was to highlight the areas of debate and subtopics to address (building on the Scoping Paper) as well as existing evidence requiring special attention for the Opinion.

The specific outcome of the workshop is a list of sub-questions that the Opinion can address. The list is intended as guidance for further work on the Opinion.

Participants

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Core question

> *How to provide good science advice to EC policymakers, based on available evidence, under conditions of scientific complexity and uncertainty*?
>
> **Scoping Paper** (1 February 2018)

Sub-questions developed as an outcome of the workshop

1. <u>**Complexity and uncertainty in science for policy**</u>

1.1. What principles, approaches and methods can be introduced into the EC science advisory processes to ensure their maximum relevance and usefulness for policymakers while addressing complexity and uncertainty?

NB.
In addressing question 1.1.:
different kinds of complexity should be considered, including:

– complex, ambiguous, conflicting, plural or contested scientific evidence, or conflicting interpretations of the same evidence;

– complexity arising from different styles of reasoning (e.g. by diverse science disciplines addressing the same policy question);

– complex policy questions (e.g. complex causality) and multiple ways to frame the same issue through policy questions;

– complex societal and political context, including: societal opinion, ideologies political priorities, and sources of evidence outside science;

different kinds of uncertainty should be considered, including:

– technical uncertainty (e.g. missing data);

– methodological uncertainty, (e.g. uncertainty as to how to study an issue);

– epistemological uncertainty (i.e. uncertainty as to what kinds of knowledge should be brought in to study an issue and reasons for doing so, and uncertainty as to what is at stake).

1.2. What are the best practices in assessing and communicating uncertainty as part of the science advisory process?

1.3. What are the main challenges in the EU's current policy and regulatory response to scientific complexity and uncertainty? How are Member States, international organisations, and non-EU OECD countries responding to these challenges? How could a future EC science advisory system address them?

2. __Appropriate and high-quality evidence for policy__

2.1. What are the attributes of good science – both generally and specifically of science carried out for public policy? How well do the classic attributes of validity, reliability and relevance cover it?

NB. In addressing question 2.1, the **reproducibility** of science should be considered, as part of wider validity, when relevant.

2.2. What are the different kinds of scientific evidence that are relevant for advice to policy and under what conditions? What quality framework(s) and methods can be applied to the evidence used for advice to EC policy, to ensure that the quality criteria used are those (most) relevant to the different types of evidence needed?

2.3. What good practices (applicable to the EC context) exist for the use of expert knowledge and collective expert bodies, including for acknowledging the role of experts, in the process of science advice?

2.4. What are effective ways of mitigating various types of biases in producing, selecting and interpreting evidence for policy?

2.5. What are good practices in dealing with and communicating scientific dissent (i.e. legitimate and divergent interpretations of evidence) in the process of science advice, without opaque aggregation?

3. __Good science advice__

3.1. What principles, practical experiences and lessons on science advice, as well as on the interaction between evidence, science advice and policy – are relevant and applicable to the EC context?

NB. In addressing question 3.1., the following aspects should be considered in particular:

– Feedback mechanisms on how science advice, and the evidence which underpins it, has been taken into account in policy (and why not, should that be the case)

– The interaction between science advice and policy as a deliberative process, including the mechanisms and approaches that induce trust in science advice