Science foresight forum

Science foresight function in research funding and performing organisations

- Survey results
- Conclusions and discussion

Objectives of the forum

- To outline the specific characteristics (e.g. principles, criteria) of science foresight.
- To map and identify good practices for science foresight (e.g. through publishers, scientific associations, MOs, other international institutions).
- To identify the needs and gaps of science foresight at the European level
- To identify the required tools, methodologies and data needed (in collaboration with the MO Forum on Evaluation of Publicly Funded Research).
- To identify mechanisms to engage and motivate the best scientists in the respective research field.
- To propose appropriate joint foresight processes/framework in science.

Survey results...

The survey

14 organisations responded

> One ministry (FIVU)
>
> Four research performing organisations (CSIC, INRA, SAS, CNR)
>
> Nine research funding organisations (two of which do not perform foresight)

12 out of the 14 organisations perform foresight

> **According to our definition:** FIVU, RCN, SAS, AKA, ESRC, INRA
>
> **Slightly different definition or analyses with elements of foresight:** VR, CNR, SFI, DFG, Wellcome trust, (Also FWF although they chose to say they do not perform foresight)
>
> **No response on definition:** CSIC

Two organisations do not perform foresight

> FWF
>
> FWO no comment on definition

"How does the above definition of "Foresight" differ from how it is understood in your organisation?"

A "Foresight" can be defined as systematic, participatory, intelligence gathering and medium to long-term vision-building process, aimed at guiding present-day decisions. Foresight contributes to the early identification of emerging issues that could have far reaching implications for European Science and technology in the long run and to building stakeholder commitment to action. It helps analysis of changes in global research and innovation systems and the socio-economic context in which they operate. (<u>Definition to be revisited after the survey results</u>)

1. Ministry

    "The definition matches our understanding."

2. Research funding organisations

    "In our organisation, we would call this process, prioritisation"

    "It does fit to our understanding of foresight, but we focus more on the international and global than the European scope solely."

    "The FWF does not conduct foresight in the narrow sense but we use some elements for science policy advise and strategic road mapping"

    "We do not use the term "foresight" for our work, but we have performed analyses and engaged researchers in a process which has lead to the identification of areas for strategic research funding. The work contains many aspects and methods that can be related to foresight activities"

    "We don't really use the term "foresight" to describe planning activities, although we do use several of the techniques that might form part of a "foresight" process to inform our internal medium to long-term strategic planning. In the UK, the term Foresight is really primarily associated with the UK Government's Foresight programme."

3. Research performing organisations

    "Foresight contributes to identify today's research and innovation priorities on the basis of current scenarios and foreseen developments in science"

Other organisations performing foresight

Germany – Fraunhofer Institute for Systems and Innovation Research (ISI) , Federal Ministry for Education and Research (BMBF), Commission of Experts for Research and Innovation (EFI)

UK – Government (particularly Foresight office, department for Business, Innovation and Skills); learned societies (e.g. Royal Society) to some extent, some industry, other Research Councils

Ireland – The Irish government is running a prioritisation exercise in 2011 which involves a number of agencies and industry parties

Finland – National science and innovation council, ministeries, funding organisations

Belgium – VRWI, Flemish Advisory Council for Science and Innovation

Italy – The Italian Ministry of Education and Research. Also private foundations such as Fondazione Rosselli and some University Departments as well

Slovak republic – SOVVA, Neulogy, ministries

Norway – Industries, public organisations, regional agencies

Denmark – Danish Board of Technology   DTU RISØ (Research Organisation)

Vetenskapsrådet

Types of foresight exercises conducted

Science foresight (75%), science policy advice (67%), technological foresight (50%), and strategic road-mapping (33%)

Typical timeline and scope

Short timeline (< 3 years) most common (58%)

National 77%, international 39%, European 8%

Is science foresight part of organisation's overall strategy?

Yes (31%)

No (69%)

Vetenskapsrådet

Methods used

Identifying issues

    Bibliometry, surveys and strategy planning most common (80-90% 1-10 studies/year)

    SWOT analysis, stakeholder mapping and horizon scanning (65-75%)

    Stocktaking analysis and inventories less common (40-45%)

Explorative approach

    Trend exploration (60%)

    Delphi (0%)

Creative approach

    Expert panels/commissions (100%)

    Brainstorming (73%)

    Scenarios building (73%)

    Mind-mapping (27%)

Prioritisation

    Critical technology (45%)

    Road-mapping (36%)

    Other organisations' strategies taken into account

Other methods used

”We undertake landscape overviews in particular fields of science, and also hold frontiers type workshop to bring together experts to discuss a particular area of science”

"We are a research performing organization with planning 4 years in advance. Every two years the strategy is reviewed and corrected if necessary. This process is made by different committees involved in the 8 scientific and technical areas covered by our organisation”

Organising foresight

Having no foresight unit is more common

Commissioning foresight – 50/50

People specifically in charge of foresight within the organisation – 50/50

Most of them have other tasks as well

Foresight function most often located in strategy or evaluations department

Most organisations do not have an established process for discussing results

Reporting outside the organisation

Most do not have to report to another organisation

Those who do report to the government

Most organisations publish some of their foresight analyses (67%)

Initiating foresight

Internally (usually management) or government

Motivation for initiating a foresight project

1. ## Ministry

   "Foresight methodology is wide spread and used in ordinary day-to-day work. Not so much as projects as such."

2. ## Research funding organisations

   "Usually ideas raised either by staff as a result of monitoring work and discussions with our key communities, or might be ideas raised by others. Also our strategic planning cycle."

   "to make more efficient use of tax payers money."

   "background for research policy decisions"

   "opening up alternative strategic choices, widening the scope of existing activities"

   "To get more knowledge about Swedish research and the Swedish research system in an international perspective."

3. ## Research performing organisations

   "The necessity of opening a new research area and/or a major question on which we need to invest in the future."

   "To draw up the Decennial strategic vision document (Documento di Visione Strategica Decennale - DVSD) contemplated by the CNR's Statute."

   "Need of new information, plans and strategies for next time period or for some new projects, new situations, opportunities or problems we must reflect and solve"
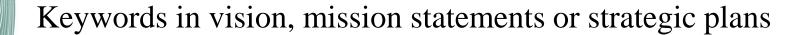
   "It is mandatory by law."

Use of foresights

Establishing new funding priorities 100%

Recruitment of researchers 25% (only research performing organisations)

Impact of foresight

Most often not measured (75%)

Keywords in vision, mission statements or strategic plans

Ambition displayed

Leading science, exceptional research 100%

First rate people, exceptional researchers, world-class science, promoting the best 83%

Leadership in governance, being a model 33%

A national concern

To advance the national health, prosperity and welfare 91%

For the benefit of health and wealth 55%

An engine for growth 55%

The research applications

Transfer of knowledge 91%

Translation of research into practice 73%

A node for innovation 55%

Commercial exploitation, key player in business 18%

Keywords in vision, mission statements or strategic plans, cont.

Principles and values well defined

Excellence 100%

Good practice 92%

Rigorous transparency, ethics, accountability 75%

Fredom 58%

Social responsibility

Dialogue about implications for society 70%

Return on investment 50%

To engage the public, listening to the public 40%

Freedom with social responsibility, serving society 30%

Request of efficiency

More efficient usage of governments funding 73%

Effective organisation 55%

Performance 55%

A capable and responsive organisation 55%

Improving financial position and infrastructure 18%

Conclusions(?) and discussion

Science foresight does not seem to be commonly used in Europe…

Is foresight in science controversial?

Is the methodology immature?

What do we need that science foresight could add?