



# **Bringing Foresight to decision-making - lessons for policy-making from selected non-European countries**

Policy Brief by the Research, Innovation, and Science Policy Experts (RISE)

Kerstin Cuhls  
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*Contact:* Katarzyna Bitka, Emanuele Barbarossa

*E-mail:* [katarzyna.bitka@ec.europa.eu](mailto:katarzyna.bitka@ec.europa.eu)

[emanuele.barbarossa@ec.europa.eu](mailto:emanuele.barbarossa@ec.europa.eu)

[RTD-RISE@ec.europa.eu](mailto:RTD-RISE@ec.europa.eu)

[RTD-PUBLICATIONS@ec.europa.eu](mailto:RTD-PUBLICATIONS@ec.europa.eu)

*European Commission*  
*B-1049 Brussels*

# **Bringing Foresight to decision-making - lessons for policy-making from selected non-European countries**

***Policy Brief by the Research, Innovation, and Science Policy Experts (RISE)***

Kerstin Cuhls, with contributions by Matthias Weber and Dan Andrée

Members of RISE

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## HIGHLIGHTS

**1. Make full use of Foresight processes and their results that are available throughout Europe – for being alerted, for identifying opportunities, for strategy-building, and for being prepared through anticipating different futures.**

**2. Ensure the tight institutional embedding of Foresight in the EC by designating a centralized capacity with clearly defined responsibilities in the policy-preparing processes, backed up by high-level support and the right channels to the decision-making process.**

**3. Closely connect the EC-internal Foresight network to national and international communities in order to get input from Foresight into policy-making, and to reach out to different actors and players in the innovation system.**

**4. Training and experiencing Foresight is key to the emergence of a Foresight culture and to enhancing the absorptive capacity for strategic knowledge.**

### **1. Background**

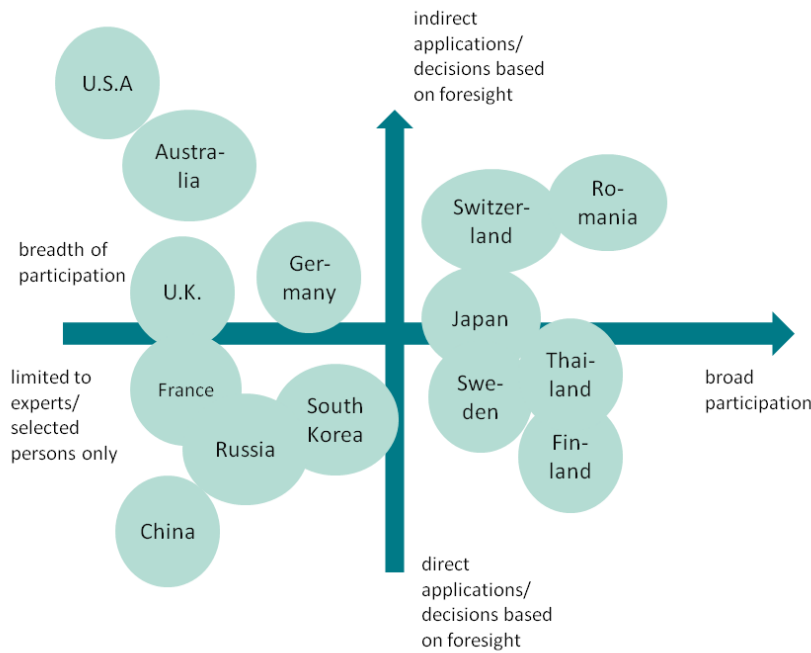
Foresight involves the systematic consideration of different futures in order to foster debates, scan the horizon, and anticipate changes, opportunities as well as disruptive emergencies. Based on the conviction that the future can be influenced strategically, Foresight aims to help prepare policies and policy measures (EFFLA Policy Briefs no. 1, 2, 9, 11; 2012-2014). More specifically, Foresight is used to support priority-setting, develop thematic portfolios, and identify critical technologies that guide national or organizational investments. Participative processes are often regarded as a component of Foresight and are used to foster stakeholder involvement and public engagement in both the development and implementation of policies.

### **2. Making Foresight effective for decision-making**

Before the benefits of Foresight can be reaped on the European level, a major challenge that needs to be overcome is improving the interfaces between Foresight and policy-making in order to ensure that Foresight is actually integrated into decision-making. Looking at Foresight activities in different countries or multi-country organizations reveals that there is no single model of Foresight that fits all purposes and backgrounds, but that there are successful systematic practices from which to learn. In Europe, Finland, the UK, Germany, France and Romania can provide valuable insights in this respect, and there are also interesting experiences further abroad to be taken into account. These are of particular interest in this policy brief and are ready to be exploited.

The diversity of the Foresight approaches is important, as are the purposes to which the approaches need to be adapted. Foresight can be used directly in policy-making, but also to support strategic advisory bodies; in both cases, it is used as a tool to inform and develop policy in a specific area or to “join up” policies across domains (Cassingena Harper 2013). Its aim is often to provide the means to guide, develop and shape research, technology and innovation policy, and Foresight activities have been carried out for whole national innovation systems or sectors (EFFLA Policy Brief no. 9, 2013). On the European Commission level, a lot has been achieved already, but there are still some issues to be addressed (André 2015).

Figure 1: Breadth of the Foresight approaches versus application in policy-making contexts



Source: Own elaboration

The ways other countries bring Foresight to the attention of decision-makers and how it is then implemented differ as well. Internationally, we find countries that emphasize awareness-raising activities. Others publish their findings in White Papers (e.g. Australia) or rely on distribution of futures knowledge via purely educational activities (like Taiwan) to train the next generation of policy-makers. Direct use of Foresight in high-level councils can be found in South Korea and Japan. In Japan, for instance, the Foresight group of the responsible National Institute of Science and Technology Policy (NISTEP 2009) reports directly to the Council of Science and Technology Policy (CSTP, meanwhile Council of Science, Technology and Innovation, CSTI), whose members are from Ministries and industry, but also include the Prime Minister. These conditions provide a natural channel for its transfer into policy-making.

Analyzing the Foresight activities of selected countries shows that Foresight results are applied both directly and indirectly. Some countries favour broad participation (involvement of laypersons, different actor groups, persons with different backgrounds), others prefer only experts to be involved. Some use Foresight directly and link it with the innovation system (direct plans), others tend to use it indirectly (diffusion of the results, informing policy-making). Figure 1 gives a rough impression of the different countries' Foresight approaches in their respective innovation systems.

### 3. How Foresight can make a difference: Examples from Europe and beyond

The Foresight experiences made over the past decades offer a wide spectrum of options how to improve decision-making and make it more forward-looking. Ultimately, however, Foresight must make a real difference in terms of the decisions that are taken and the choices that are made. There are several examples that allow demonstrating the value-added of Foresight for decision-making.

An interesting case is Japan where Foresight is transferred via different ways and media to the different addressees, even with the help of Manga. With 50 years of experience, they are the most experienced foresighters and can trace their historical data back to 1972.

#### Example Japan: Innovation 25 Strategy 「イノベーション25」

When Prime Minister Koizumi asked for "innovation" in parliament, he received no answer. This was the starting point for the accumulation of a paper called "Innovation 25" which directly used Foresight results, especially the regular Delphi survey. The rather short theses form that is normally used in Delphi surveys was enhanced, the topics explained in more detail and scenarios for the public even in the form of Manga were written. The information widely circulated in and via the Council for Science and Technology Policy (CSTP) and a national Innovation 25 strategy derived from it.

Recent experiences made in Thailand forcefully demonstrate the negative consequences of not taking Foresight results seriously, and thus stress the potential of Foresight for getting prepared for the seemingly unlikely.

#### Example: Thailand Scenarios on Climate Change

In the Foresight of Thailand, scenarios on climate change were derived from different indicators, a Delphi survey and discussions in workshops. The workshops were very important to estimate potential impacts of a climate change in Thailand. In one of the scenarios, rising water levels and floods including their direct impacts were an issue. It was assumed that in very short time after floods riots would occur. Many people thought that this scenario would be very improbable and accused the authors of being unrealistic. Only a few months after the foresight was published, strong rainfall led to floods in Thailand with many people dead –the cascade of the early consequences (e.g. riots) could tragically be read in the report. People were unprepared.

There are also some interesting examples from Europe, showing that Foresight did have an impact on important choices in society and government. The UK Foresight triggered the launch of a major campaign for raising awareness of the consequences and reasons of obesity, and the German BMBF Foresight led to the establishment of a new thematic priority and a corresponding organisational change in research policy.

#### Example UK: Tackling Obesities

In the UK Foresight, obesity was identified as an increasing problem, especially in the UK. An Obesity System Atlas linking different factors and influences was drawn and the impacts evaluated. Scenarios were formulated to address the longer-term effects. Based on the reports and findings a campaign in schools, universities and other places started for awareness-raising, with education and other measures.

#### Example Germany: Topic Human-Technology Interaction derived from the BMBF Foresight Cycle I

In the German national Foresight of the Federal Ministry of Research and Education (BMBF), a broad search for long-term interdisciplinary topics in research was performed from 2007 to 2009. One of the results was the topic "Human-Technology Cooperation", recommending very different actor groups to cooperate in order to foster the topic into a fruitful direction for innovations, regulated and also taking ethical issues into account. Based on this foresight, the division (Referat) 524 "Demographic Change and Human-Technology Cooperation" (now "Interaction") was established in BMBF with the task of identifying new concepts and funding R&D projects in the field – meanwhile running a diversity of projects.

There are also some good historical examples of the power of foresight for getting prepared for a changing world. Royal Dutch/ Shell has a good track record in anticipating events and developments that might seem unlikely at a first glance, but which – if they materialize – might change the business in the oil industry.

#### Famous examples from the past: Foresight in Industry - Royal Dutch/ Shell and the oil crisis

In the 1980s Shell maintained its reputation for using scenario thinking as part of its planning system, two famous examples are (Schwartz 1991):

- Oil would become a commodity with prices set by the market, not by either the companies or the producers. Prices would thus behave like those of commodities like nickel, copper and wheat. Once oil began indeed to act like other commodities, Shell had designed an oil trading system so was once again in pole position compared to its rivals.
- Oil and gas prices could drop. With oil, OPEC's unified facade could crumble, worsened by a slowing demand for oil because of better energy conservation and efficiency. Even more strikingly, the continuation of the Soviet system was not assured, which could have implications for the natural gas market. Shell avoided investing in new oil fields or following the acquisition trail being trodden by its major competitors, who were engaged in an acquisition spree, buying other oil companies at premium prices. Once the dust had settled following the price drop, Shell was able to pick up additional assets at bargain prices.



## 4. Recommendations

Derived from the experiences in selected European and non-European countries, the following recommendations are made by RISE:

### 1. Make full use of Foresight processes and their results that are available throughout Europe – for being alerted, for identifying opportunities, for strategy-building, and for being prepared anticipating different futures.

There are a lot of Foresight activities on the European level, the Member States and even regional or company levels. Different platforms give an overview but a concerted action is necessary to fully exploit the material and thinking that is available and to channel it directly into the policy-making context.

### 2. Ensure the tight institutional embedding of Foresight in the EC by designating a centralized capacity with clearly defined responsibilities in the policy-preparing processes, backed up by high-level support and the right channels to the decision-making process.

For the European Commission, it is **essential** to create and maintain an **entry point** with a broker function (node) as an institutional anchor for Foresight and a service point for the policy-making entities in the European Commission. Identifying the right addressees as decision-makers and convincing them of Foresights' benefits and gaining their long-term support might be one of their future functions (broker in the system, like in the UK or the German BMBF Foresight). For this, a strong **internal "network"** has to be constructed and maintained as support for this node or coordinating unit. A lot has already been achieved but there are still steps to go (Andrée 2015).

This unit should have a **coordinating function** for the different studies and activities that are conducted in the EC. In the virtual APEC Center, for example, different countries are brought together and coordinated to perform Foresight on specific issues or topics. The results are transferred back to the responsible decision-makers in the national systems of innovation, but also published as lessons for all countries.

**Promoters** of Foresight activities who have a deep understanding of the field and good links to the innovation and policy eco-systems could act as another entry point. The Promoter might be a single, influential person (powerful by rank or position, visible, well-known or just a good networker in the system) and/ or an institution in the eco-system with direct links to those who should become active.

A **high ranking Science, Technology and Innovation Council** or **regulatory committees** (high-level group, cross cutting, with an advisory character) which are compatible with legislation could be helpful. Very good experiences have been made with the Finland Futures Committee, the Japanese CSTP, or the Korean Council, which act as mediators transferring issues into the system. In other European countries, councils already exist (e.g. Austria) or are being set up (e.g. Sweden) but their role depends on their mandate.

### 3. Closely connect the EC-internal Foresight network to national and international communities in order to increase the efficiency of Foresight for policy-making, and to reach out to different actors and players in the innovation system.

A strong **external "network"** of the coordination unit has to be developed and maintained (like the function of the APEC Center mentioned above integrating different countries' activities, trainings and meetings and international experts), which includes Foresight organizers and experts (individuals, advisory groups, councils, see EFFLA Policy Brief 10) as well as external contributors and decision-makers (promoters of topics, internal commissions), and which has close connections to the European Commission and the internal actors there. Input into the policy system can thus take place on different levels.

In Foresight, the **"moderation" function**, bringing the "right actors" together in one place and at one time, has huge influence on the effects and implementation of Foresight later on. The coordination institution mentioned as a possible entry point could play a prominent role here. A joint EU vision of things to come (including challenges, disruptions, societal and other developments) should be promoted. In some Asian countries, national activities are regularly compared and some joint activities are performed (e.g. in China, Japan and South Korea). Additionally, issue-specific joint activities which integrate several (but not necessarily all) European countries could add specialized information and promote more specific policies – even at a regional level. It might be helpful to conduct Foresight activities at regular intervals in order to gradually build up historical lines of data and learn from this information.

#### **4. Training and experiencing Foresight is key to the emergence of a Foresight culture and to enhancing the absorptive capacity for strategic knowledge.**

**General knowledge** about the pros and cons of Foresight and its methods should be communicated and futures literacy should be supported. This is needed to achieve a critical mass of persons who have the ability to think long-term, information about Foresight methods and what is feasible as well as the personal capability to free their thinking from the limitations of existing time frames and deadlines. This is only possible via **education and regular training** and via experiencing Foresight in practice. Policy-makers need to be informed about or even literate in Foresight. Establishing training facilities at universities or integrating Futures Research into curriculae would be a major step forward in institutionalising futures literacy. Up to now, there are only a few educational facilities (e.g. in Finland, UK, Germany and Italy) offering this type of knowledge in Europe.

**Create “spaces” for new thinking and Foresighting**, either by using existing ones like the Innovation Convention, conferences, regional events, and topic-related events, or by creating new platforms, meeting places and individual opportunities. This would enhance the time horizon for thinking into the future and interdisciplinary discussions –together with decision-makers.

#### **5. Conclusions**

This Position Paper, which is based on a study focusing on countries outside Europe clearly underpins the earlier recommendations of EFFLA. As an institutionalized setting, the first step towards having an **entry point and node for using Foresight and forward-looking activities for policy-making** in the European Commission has been made by establishing Unit A6: Policy Analysis, Foresight and Data in DG RTD. Its function in the system could still be broadened to include that of an internal and external network broker. In particular, further steps are needed to integrate Foresight thoroughly into the main policy- and strategy-preparing activities within the DG RTD, e.g. in the context of developing and updating R&I framework programmes and their respective work programmes.

Further steps could include the establishment of a **high-level council** to approve and support Foresight projects as well as the recruitment of **promoters** to diffuse the contents. It is also necessary to develop an understanding of Foresight and the **competencies** needed to exploit the potentials of forward-looking activities.

**Permanent external networking** with Foresight experts of all kinds has to be developed as a “culture” in order to fully exploit existing knowledge about futures: **Time** and **institutional stability** are needed to build up Foresight and futures thinking capacity in organizational and policy routines so that monitoring challenges and tackling the observed issues becomes a normal task of decision-makers. Foresight management and a Foresight culture play an essential role in bringing knowledge into the system and in developing tried and trusted ways to transfer futures knowledge to the right place and the right person in the system – at the right time.

Time is also needed because long-term developments cannot be rushed and do not fit into policy cycles of 4 to 5 years. They cannot be decided on the spot by policy-makers, but only after a time-lag. It is important to already start planning for the next Framework Programme after Horizon 2020. Ideas have been taken up in several Policy Briefs of EFFLA in 2012 and 2013. Patience is needed for these new developments which become visible much later and new forms of evaluation have to consider this time-lag, too. The long-term experience in Japan shows that tenacity (especially of the performing institutions and the coordinators) is an important factor to reach the relevant decision-makers.

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This policy brief is based on the study taking stock of recent and past Foresight activities in non-European countries with a focus on Southeast Asia. To demonstrate some existing Foresight processes in Europe, selected European foresight activities were added. The purpose of this brief is to point at best practices in national foresight activities and their link to policy-making. The brief is selective but allows giving some recommendations for future work at the interface between Foresight and policy-making.

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